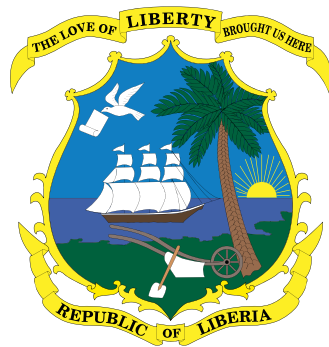


REPUBLIC OF LIBERIA



MINISTRY OF HEALTH



INTEGRATED MANAGEMENT OF NEONATAL AND CHILDHOOD ILLNESSES (IMNCI)

PARTICIPANTS MANUAL

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Monrovia, June 2026

FOREWORD



The health and well-being of Liberia's children remain a high priority for the Government of Liberia and the Ministry of Health. Despite notable progress in reducing child morbidity and mortality over the years, preventable illnesses continue to pose significant threats to the survival and healthy development of newborns, infants, and young children. Strengthening the quality of healthcare

services for this vulnerable population is therefore essential to achieving national health goals and advancing universal health coverage.

It is my privilege to present the Revised Integrated Management of Neonatal and Childhood Illness (IMNCI) Guide, an important resource designed to support healthcare workers in delivering comprehensive, evidence-based, and quality care to newborns and children throughout Liberia. This revised guide reflects the Ministry of Health's commitment to continuously improving clinical standards and ensuring that healthcare providers are equipped with the current knowledge, tools, and best practices for the prevention, diagnosis, treatment, and referral of common childhood illnesses.

The IMNCI strategy has long served as a cornerstone of child survival efforts by promoting an integrated approach to managing the major causes of neonatal and childhood morbidity and mortality. The revised guide incorporates updated global recommendations, emerging scientific evidence, and lessons learned from implementation within Liberia's health system. It places renewed emphasis on neonatal care, nutrition, immunization, growth monitoring, early detection of illness, appropriate case management, and effective referral systems, while reinforcing family and community participation in child health.

This revision comes at a critical time as Liberia continues its efforts to reduce neonatal, infant, and under-five mortality and accelerate progress toward the Sustainable Development Goals and national health sector priorities. By standardizing clinical practice and strengthening the capacity of healthcare workers at all levels of care, this guide will contribute significantly to improving the quality of services and health outcomes for children across the country.

The Ministry of Health recognizes the invaluable contributions of healthcare professionals, technical experts, development partners, training institutions, and stakeholders who participated in the review and updating of this guide. Their expertise, dedication, and commitment have helped ensure that this document remains responsive to Liberia's health needs and aligned with relevant global recommendations and evidence-based practices.

I encourage all healthcare providers, supervisors, trainers, and program managers to use this guide as an essential reference in their daily work. Its effective implementation will require sustained supervision, continuous capacity building, and strong collaboration among all stakeholders involved in maternal, newborn, and child health.

Together, we can ensure that every child in Liberia has the opportunity not only to survive but also to thrive and reach their full potential. The Ministry of Health remains committed to supporting the effective implementation of this guide and advancing interventions that improve the health and well-being of our children and strengthen the resilience of Liberia's health system for future generations.

Hon. Dr. Louise M. Kpoto, MD, MPH, MMed-OBGYN PHD, FWACS, MLCPS

Minister of Health

Republic of Liberia

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The Ministry of Health of the Republic of Liberia expresses its sincere appreciation to all individuals, institutions, and partners whose dedication, expertise, and collaborative efforts made the revision of the Integrated Management of Neonatal and Childhood Illness (IMNCI) Guide possible.

The Ministry particularly acknowledges the technical leadership and coordination provided through the Family Health Division and the contributions of relevant departments, programs, technical working groups, and stakeholders who participated in the review and revision process.

We extend our sincere appreciation to the national experts, pediatricians and their association, clinicians, nurses, midwives, public health specialists, trainers, and program managers who contributed their time, knowledge, and expertise to reviewing, updating, and validating the contents of this guide. Their technical contributions have helped ensure that the revised IMNCI Guide reflects current scientific evidence, relevant global recommendations, and the health needs and context of Liberia.

The Ministry also recognizes the valuable contributions of technical working group members, facilitators, reviewers, editors, training institutions, development partners, and administrative support staff whose commitment and assistance were instrumental in bringing this important document to completion.

The successful revision of this guide reflects the collective commitment of the Ministry of Health and its partners to strengthening the quality of newborn and child health services in Liberia. The Ministry looks forward to continued collaboration with all stakeholders in supporting the dissemination, implementation, and effective use of the revised IMNCI Guide at all levels of the health system.

On behalf of the Ministry of Health, I extend my sincere appreciation to everyone who contributed to this important undertaking and reaffirm the Ministry's commitment to improving the health and well-being of Liberia's newborns and children.

Dr. Catherine T. Cooper
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Ministry of Health
Republic of Liberia

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INTRODUCTION

Globally, under-five mortality (U5M) has declined significantly over the past three decades, dropping by about 61% from 94 deaths per 1,000 live births in 1990 to 37 deaths per 1,000 in 2023, though the pace of reduction slowed from 3.7% annually between 2000–2015 to 2.2% between 2015–2023. Sub-Saharan Africa continues to bear the highest burden, with 1 in 13 children dying before their fifth birthday compared to 1 in 185 in high-income countries. In Liberia, despite progress in child health, U5M remains among the highest in West Africa. The 2019–2020 Liberia Demographic and Health Survey reported 94 deaths per 1,000 live births, while the 2022 census showed 93, reflecting only a 1% improvement. Infant mortality in 2024 stands at 45.64 per 1,000 live births, a 13.23% decline from 2023, but neonatal mortality remains high at 37 per 1,000, up from 27 in 2013 and well above the global average of 17. The leading causes of U5M in Liberia are malaria, lower respiratory infections, diarrheal diseases, and neonatal complications such as prematurity, birth asphyxia, and sepsis, all of which are preventable and treatable. Contributing factors include malnutrition, limited healthcare access, and poor sanitation. To address these challenges, Liberia adopted the Integrated Management of Childhood Illness (IMCI) strategy in the early 2000s, later transitioning to the Integrated Management of Newborn and Childhood Illness (IMNCI), revised in 2026. Developed by WHO and UNICEF, IMNCI combines preventive and curative measures, empowering families, communities, and health facilities to improve child survival. It uses a symptom-based approach to assess and manage children under five, focusing on nutrition, immunization, feeding, and parental counseling. The case management process follows structured steps: **assess, classify, identify treatment, treat, counsel, and follow-up**. Classifications are color-coded—**red for urgent referral, yellow for treatment initiation, and green for home care**—ensuring appropriate action based on severity. Separate charts guide management for infants up to two months and children aged two months to five years, helping providers deliver consistent, efficient care. Overall, while Liberia has made progress, sustained implementation of IMNCI, stronger health systems, and active parental involvement remain critical to reducing neonatal and under-five mortality further.

MODULE 1: SICK YOUNG INFANT FROM BIRTH TO 2 MONTHS

1.1 MANAGEMENT OF THE SICK YOUNG INFANTS (BIRTH UP TO 2 MONTHS) FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA, AND LOCAL BACTERIAL INFECTION

1.1.1 ASSESS AND CLASSIFY THE SICK YOUNG INFANT

1.1.1.1 CHECK THE YOUNG INFANT FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA AND LOCAL BACTERIAL INFECTION

All sick young infants should be assessed for possible serious bacterial infection because conditions such as pneumonia, sepsis, and meningitis can rapidly become life threatening. Signs of very severe disease may also indicate conditions such as birth asphyxia, and complications of preterm birth.

Assess the signs in the order shown on the chart while the young infant is calm or asleep. First, count the breathing rate and check for chest indrawing, nasal flaring, and grunting. Then ask the mother/caregiver to undress the young infant so you can examine the skin for signs such as pustules or jaundice. Look at the skin all over his/her body (for example: pustule, jaundice, molting, etc), and measure the temperature. At this stage, observe whether the infant is lethargic, unconscious, or has abnormal movements.

ASK THE MOTHER OR Caregiver About THE YOUNG INFANT'S PROBLEMS ARE
Determine whether this is:

- ☐ An initial visit — assess the infant as outlined in the chart ☐

Or

- ☐ A follow-up visit — use the follow-up instructions. ☐

CHECK FOR POSSIBLE SERIOUS BACTERIAL INFECTION

ASK:

- Has the infant has convulsion?
- Is the infant having difficulty in feeding?
- Has the infant had fever or hot skin

LOOK, LISTEN, and FEEL

- See if the young infant is lethargic or unconscious or convulsing now
- Count the breaths in one minute
“Repeat the count if = 60 breath/minute
- Look for severe chest in-drawing.
- Look and listen for grunting.
- Look for pus draining from the ear.
- Look at the umbilicus.
 - Is it red or draining pus?
 - Does the redness extend to the skin?
- Look at the young infant movements: If the infant is sleeping, ask the mother to wake him/her.
 - Does the infant move on his/her own? If the infant is not moving, gently stimulate him or her.
 - Does the newborn move only when stimulated, but then stops?
 - Does the newborn not move even if stimulated?
- Measure axillary temperature.
- Look for skin pustules. Are there many or severe pustules?

The young infant
must be calm

Classify

How to assess each sign is described below:

ASK: Has the child had Difficulty in Feeding?

Any difficulty mentioned by the Mother/Caregiver is important. A young infant who was feeding well earlier but stopped feeding well or is not feeding at all may have a serious infection. A newborn, who has not been able to feed since birth may be premature or may have complications such as birth asphyxia.

These infants who are either not able to feed or are not feeding well should be referred urgently to hospital. The Mother/Caregiver may also mention difficulties such as her infant feeds too frequently (or not frequently enough), she does not have enough milk, her nipples are sore, or she has flat or inverted nipples. You will assess these difficulties later during breastfeeding assessment.

ASK: Has the infant had convulsions (fits) during this illness?

Ask the Mother/Caregiver if the young infant has had convulsions during this current illness. Use words the Mother/Caregiver understands such as “jerking” or “seizure” or “spasms” or “becoming stiff”, “stops breathing and becomes blue”. Many times, there may be only repetitive twitching of the mouth or blinking of eyes, lip smacking or a staring look. The young infant may lose consciousness.

ASK: Has the infant had fever or hot skin?

LOOK: Count the breaths in one minute.

Count for one minute to decide whether the infant has fast breathing. The young infant must be calm when you watch and listen to his or her breathing. Young infants usually breathe faster than older infants and young children.

- Normal breathing rate of a healthy young infant is between 30 to 60 breaths per minute□
- 60 breaths per minute or more is fast breathing in a young infant.□
- If the first count is 60 breaths or more, repeat the count.□

This is important because the breathing rate of a young infant is often irregular. The young infant will occasionally stop breathing for a few seconds, followed by a period of faster breathing. If the second count is also 60 breaths or more, the young infant has fast breathing.

LOOK for severe chest indrawing.

Chest wall indrawing is the inward movement of the muscles between and below the bony structures of the chest wall when the child breathes in.

- Expose the chest and abdomen when looking.
- Look for chest indrawing when the young infant breathes in.
- The child has chest indrawing if the lower chest wall goes in when the child breathes in.

Chest indrawing occurs when the effort the child needs to breathe in is much greater than normal. In normal breathing, the whole chest wall (upper and lower) and the abdomen move out when the child breathes in. When chest indrawing is present, the lower chest wall goes in when the child breathes in.

Mild chest indrawing is normal in a young infant because the chest wall is soft. Severe chest indrawing is very deep and easy to see. Severe chest indrawing is a sign of pneumonia and is serious in a young infant.



The child breathing in WITHOUT chest indrawing



The child breathing in WITH chest indrawing

FEEL: Measure axillary temperature or use the infrared thermometer.

To measure axillary temperature, keep the thermometer inside the axilla for one minute or after the beep is heard or used the temporal region for infrared thermometer measurement. Fever (axillary temperature of 37.5°C or above) is uncommon in the first two months of life. Young infants can also respond to infection by dropping their body temperature to below 36.5°C (axillary temperature). Low body temperature is called hypothermia.

If a young infant has fever or hypothermia, this may mean the infant has possible serious bacterial infection. If the high or low temperature is the only severe sign, repeat the measurement after 30 minutes. In the meantime, remove clothing and let the baby who has fever cool. If the baby has hypothermia, wrap the baby to warm her for 30 minutes. Use the second reading to decide if the infant has fever or low temperature.

LOOK at the umbilicus – is it red or draining pus?

The umbilical cord usually separates between seven to fourteen days after birth, and the wound heals within few days of dropping. Redness of the end of the umbilicus or pus draining from the umbilicus are signs of umbilical infection. Early recognition and treatment of an infected umbilicus are essential to prevent sepsis.



Red Umbilicus

LOOK for skin pustules. Are there pustules?

Examine the skin on the entire body. Skin pustules are red spots or blisters which contain pus. If you see pustules, is it just a few pustules or are there many? Many pustules may indicate a serious infection.

LOOK at the young infant's movements.

- Does the young infant move on his/her own?
- Does the infant move only when stimulated but then stops?
- Does the infant not move at all?

Observe the infant's movements while you do the assessment.

If a young infant does not wake up during the assessment, ask the mother/caregiver to wake him. An awake young infant will normally move his arms or legs or turn his head several times. If the infant is awake but has no spontaneous movements, gently stimulate the young infant. If the infant moves only when stimulated and then stops moving, or does not move at all, it is a sign of lethargy. An infant who cannot be woken up even after stimulation should also be considered to be unconscious.

LOOK: See if the young infant is convulsing now.

Convulsions in the young infant are sometimes subtle and may require close observation by the health worker in order to detect them. While in the older child, the child's hands and legs stiffen because the muscles are contracting, in the young infant, they may manifest as abnormal movements of the limbs, lips or tongue, blinking of eyes, staring gaze, apneic spells (abnormal and frequent cessations of breath) or cyanotic attacks (bluish discoloration of the skin).

1.1.1.2 CLASSIFY ALL SICK YOUNG INFANTS FOR POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA, AND LOCAL BACTERIAL INFECTION

Classify the sick young infant:

To classify all sick young infants for possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection, compare the infant's signs to signs listed in the chart and choose the appropriate classification. If the infant has any sign in the **red row**, select **POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE**. If the infant has only the sign in the second row and no sign in the red row, select **PNEUMONIA**. If the infant has any sign in the third row, select **LOCAL BACTERIAL INFECTION**. An infant who has none of the signs in the top three rows gets the classification **INFECTION UNLIKELY**.

Presence of any one of the following signs • Convulsions OR • Not able to feed at all or not feeding well OR • Fast breathing (=70 breaths per minute OR • Severe chest in drawing OR • Grunting OR • Movement only when stimulated or no movement at all OR • Numerous skin pustules (more than 5 pustules) OR • Red umbilicus extending to the skin or draining pus OR • Fever (=37.5°C) OR • Severe hypothermia (< 35.5°C) OR • Pus draining from the ear.	POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE	➤ Give first dose of pre-referral intramuscular antibiotics ➤ Give intramuscular phenobarbitone if ongoing convulsions ➤ Start to re-warm the newborn if hypothermia ➤ Advise mother how to keep the newborn warm on the way during the transfer ➤ Prevent low blood sugar ➤ Refer the newborn to hospital **
• Fast breathing (60-69 breaths per minute or more)	PNEUMONIA	➤ Give oral amoxicillin for 7 days. ➤ Advise the mother to give home care. ➤ Follow up in 3 days.
• Red umbilicus • Skin pustules (less than 5)	LOCAL BACTERIAL INFECTION	➤ Give an appropriate oral antibiotic ➤ Teach the mother to treat local infections at home ➤ Advise mother on give home care for the newborn

		➤ Advise mother when to return immediately ➤ Follow up in 3 days
• None of the signs of very severe disease or local bacterial infection	INFECTION UNLIKELY	➤ Treat the newborn for any other identified problem ➤ Advise mother on home care for the newborn ➤ Advise mother when to return immediately.

POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE

A young infant with signs in this classification may have a serious disease and be at high risk of dying. The serious infection may be pneumonia, sepsis or meningitis. It is difficult to distinguish between these conditions in a young infant.

A young infant with any sign of **POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE** needs urgent referral to hospital. Before referral, give a first dose of intramuscular antibiotics. Treat to prevent low blood sugar by giving breast milk or give sugar water if it is not possible to give breast milk. If the young infant is not able to feed, give breast milk or sugar water by nasogastric tube.

Advising the Mother/Caregiver to keep her sick young infant warm is very important. Young infants have difficulty maintaining their body temperature. Low temperature alone can kill young infants. Let her wrap the young infant in warm blankets.

PNEUMONIA

Young infants who present with fast breathing as the only sign of illness may have pneumonia. However, when fast breathing is the only sign of illness, the respiratory rate determines the classification and recommended treatment. Young infants with respiratory rate between 60 to 69 breaths per minute can be treated with oral antibiotics at home if they present with fast breathing alone. These young infants should be followed up in 3 days to check that they are improving. If not, they must be referred to the next level higher.

Infants with fast breathing of 70 or more are classified as **VERY SEVERE DISEASE** and should be given pre-referral treatments and urgently referred.

LOCAL BACTERIAL INFECTION

Young infants with this classification have an umbilical or a skin infection.

Treatment includes giving an appropriate oral antibiotic at home for 5 days. The Mother/Caregiver should also treat the local bacterial infection at home. Local bacterial infections can progress rapidly in young infants and she should return for follow-up in 3 days to be sure the patient's symptom is improving.

INFECTION UNLIKELY

Young infants with this classification have none of the signs of possible serious bacterial infection or very severe disease, pneumonia, or local bacterial infection. Advise the mother/caregiver to give home care to the young infant.

1.1.1.3 JAUNDICE

Jaundice is a yellow discoloration of skin and mucus membranes. Many normal babies, particularly small babies (< 2.5 kg at birth or born before 37 weeks of gestation), may have jaundice during the first week of life. This jaundice usually appears on the third or fourth day of life and occurs because the infant's liver is not fully mature to eliminate the bilirubin (yellow pigment) formed in the body. This type of jaundice is mild and disappears before the age of two weeks in full term and by the age of three weeks in preterm babies. It does not need any treatment.

Jaundice, that appears in less than 24 hours after birth, or that extends to the palms or soles requires urgent treatment and should be referred. If not treated, it may damage the young infant's brain. Jaundice that persists beyond the age of three weeks needs further investigation therefore refer the patient.

CHECK THE YOUNG INFANT FOR JAUNDICE

Assess every young infant for jaundice. It is important to look for jaundice in natural light. To look for jaundice, press the infant's skin over the forehead with your fingers to blanch, remove your fingers and look for yellow discoloration. To assess for severity, repeat the process over the palms and soles.

If Jaundice, ASK: When did the yellow discoloration start? Age of the young infant >3 weeks	Look for jaundice (Yellow eyes or skin) Look at the newborn palms and soles. Are they yellow?	CLASSIFY
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CLASSIFY JAUNDICE

- Jaundice appearing within less than 24 hours of life OR - Jaundice of palms and soles at any age. OR - Jaundice in a baby >3 weeks old	SEVERE JAUNDICE	➤ Treat to prevent low blood sugar ➤ Refer URGENTLY at the hospital in Kangaroo position to keep the baby warm
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- Yellowness appearing after 24 hours of life AND - Yellowness not extending to Palms and Soles	JAUNDICE	➤ Teach mother on how to provide home care for the newborn ➤ Tell mother to return if infant is not breastfeeding adequately or not wetting 3 or more diapers per day ➤ Tell mother to return immediately if palms and soles become yellow ➤ Follow up in 2 days.
NO JAUNDICE	NO JAUNDICE	➤ Teach mother on how to provide home care for the newborn

- A young infant who is less than 24 hours of age and has jaundice OR any young infant who has yellow palms or soles should be classified as **SEVERE JAUNDICE**. These infants require urgent referral to next higher-level facility.
- Young infants with jaundice who are more than 24 hours old and do not have yellowness extending to the palms or soles should be classified as having **JAUNDICE**, if there are no signs of serious bacterial infection/severe disease. They can be treated at home.
- If the young infant with **JAUNDICE is older than 3 weeks**, refer to next higher -level facility for assessment.
- A young infant who has no jaundice gets the classification **NO JAUNDICE**.

1.1.2 IDENTIFY APPROPRIATE TREATMENT

For each of the young infant's classifications, find the treatments recommended on the YOUNG INFANT chart booklet.

DETERMINE IF THE YOUNG INFANT NEEDS URGENT REFERRAL

If the infant has any classification in a red row, he or she usually needs urgent referral to the next higher-level facility for care.

For the severe classifications (red), "Refer urgently to next higher-level facility" ("Urgently" means refer the child immediately after giving any necessary pre-referral treatments. Do not give treatments that would unnecessarily delay referral):

Mother/caregiver should be counseled about the need to urgently refer the child.

IDENTIFY URGENT, PRE-REFERRAL TREATMENT NEEDED

Before urgently referring a young infant to hospital, identify all appropriate pre-referral treatments. Urgent pre-referral treatments are listed for each classification in a red row in bold print on the chart.

Of the classifications that require urgent referral, only the young infant who has POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE should receive a first dose of intramuscular antibiotics prior to referral. These young infants should be treated to prevent low blood sugar; and mother/caregivers should be taught how to keep the young infant warm on the way to the hospital. Similar care should also be done for infants with SEVERE JAUNDICE. Referral should not be delayed at all.

IDENTIFY TREATMENTS FOR A YOUNG INFANT WHO DOES NOT NEED URGENT REFERRAL

Identify treatments for each classification by reading the chart booklet. Classifications in yellow rows or green rows can be satisfactorily treated at home, with a follow-up visit to check that the infant is improving.

1.1.3 TREAT THE SICK YOUNG INFANT WHO NEEDS URGENT REFERRAL

The sick young infant with a severe disease classification is at risk of death and needs to have treatment immediately. The best treatment option for the sick young infant with severe signs is at a higher level. Health workers need to use good counseling and negotiation skills when talking to and supporting caregivers to accept referral.

GIVE URGENT PRE-REFERRAL TREATMENTS

Below are the urgent pre-referral treatments for a young infant:

- Give first dose of intramuscular antibiotics if the infant has the classification POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE. Young infants in this classification should get two antibiotics: intramuscular gentamicin and ampicillin because they are often infected with a broad range of bacteria and the combination of gentamicin and ampicillin is effective against this broad range of bacteria.
- Treat the young infant to prevent low blood sugar as shown above
- Teach the mother/caregiver how to keep the infant warm on the way to the hospital
- Explain to the mother/caregiver the need for referral and try to resolve any problems, prepare a referral note, gather any necessary supplies for the trip, and finally review with her what to do on the way to the next level.

TREAT THE NEWBORN AND COUNSEL THE MOTHER

➤ Give pre-referral antibiotic dose

➤ Give first doses of Intramuscular AMPICILLIN and GENTAMICIN

WEIGHT	GENTAMICIN Dose: Weight 1-2kg: 3 mg per kg per day in a single dose 3-5kg: 5 mg per kg per day in a single dose		AMPICILLIN Dose: 1-2kg: 100 mg per Kg/per day divided into 2 doses 3-5kg: 150mg per Kg/per day divided into 3 doses
	Add 2 ml of distilled water to one 2ml vial containing 40mg = 4 ml to 40 mg: 10mg/ml	Add 6 ml of distilled water to one 2 ml vial containing 80 mg = 8ml 10 mg/ml	Add 2ml distilled water to one 500 mg vial
1 kg	0.25 ml*		0.2ml per dose
2 kg	0.50 ml*		0.4 ml per dose
3 kg	1.5 ml*		0.6 ml per dose
4 kg	2 ml*		0.8 ml per dose
5 kg	2.5 ml*		1 ml per dose

➤ DO NOT USE 40 mg/ml GENTAMYCIN not diluted.

It is preferable to refer the newborn classified: VERY SEVERE BACTERIAL INFECTION OR VERY SEVERE DISEASE or if the referral is not possible, give ampicillin and gentamycin for at least 5 days. Give ampicillin every 6 hours plus gentamycin every 24 hours.

➤ Give an appropriate oral antibiotic

➤ To treat local bacterial infection: *FIRST-LINE ANTIBIOTIC = CLOXACILLIN*

WEIGHT	CLOXACILLIN 25mg/kg/dose: Give <u>Three times a day for 5 days</u>
	SYRUP of 125 mg in 5 ml
1 up to 3 kg	2.5 ml per dose
4 up to 5 kg	5ml per dose

REFER THE YOUNG INFANT

- Using proper counseling technique, explain to the mother/caregiver the need for referral and get her agreement to take the infant. If you suspect that she does not want to take the infant, find out the possible reason(s) why.
- Calm the mother/caregiver's fears and help her resolve any problems. For example:
 - If the mother/caregiver fears that her infant will die at the hospital, reassure her that the hospital has physicians, supplies, and equipment that can help cure her infant.

You may not be able to help the mother/caregiver solve her problems and be sure that she goes to the hospital. However, it is important to do everything you can to help.

- Write a referral note for the mother/caregiver to take with her to the hospital. Tell her to give it to the health worker there.

WHERE REFERRAL IS REFUSED OR NOT FEASIBLE, FURTHER CLASSIFY THE SICK YOUNG INFANT

- The best possible treatment for an infant with a very severe illness is at a hospital. However, referral may not be feasible in all the time.
- To help reduce deaths in severely ill newborns that cannot access treatment in hospital, the health worker can further classify the young infant to determine what appropriate treatment can be given in outpatient until referral is feasible. For this further classification, a special table is used to identify treatment; see Chart Booklet
- To further classify the sick young infant where referral is refused or not feasible, check for the signs in the left column of the table. When the infant has signs in more than one row, choose the most severe classification.

TREAT THE SICK YOUNG INFANT AND COUNSEL THE MOTHER

IF REFERRAL IS REFUSED OR NOT FEASIBLE, FURTHER ASSESS AND CLASSIFY THE SICK YOUNG INFANT WITH POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE.

SIGNS	CLASSIFY	IDENTIFY TREATMENT
The sick young infant has any one of the following: • Convulsions • Not able to feed at all • No movement on stimulation • Weight < 2 kg	CRITICAL ILLNESS	→ Reinforce URGENT referral. Explain to the caregiver that the infant is very sick and must be urgently referred for hospital care. → If referral is still not feasible, give once-daily intramuscular gentamicin and twice-daily intramuscular ampicillin until referral is feasible or for 7 days if referral is still not feasible. → Treat to prevent low blood sugar. → Teach the mother how to keep the young infant warm at home. → Advise the mother to return daily for the injections. → Treat any other classification of illness in the young infant. → Reassess the young infant at each visit.
The sick young infant has any one of the following: • Not feeding well on observation • Temperature 38 °C or more • Temperature less than 35.5 °C • Severe chest indrawing • Movement only when stimulated	CLINICAL SEVERE INFECTION	→ Give once-daily intramuscular gentamicin* and oral amoxicillin for 7 days. → Treat to prevent low blood sugar. → Teach the mother how to keep the young infant warm at home. → Advise the mother to return for the next injection the following day. → Treat any other classification of illness in the young infant. → Reassess the young infant at each visit.
The sick young infant has: • Fast breathing (60 breaths per minute or more) in infants less than 7 days old	SEVERE PNEUMONIA	→ Give oral amoxicillin for 7 days. → Teach the mother how to give oral amoxicillin twice daily. → Treat any other classification of illness in the young infant. → Advise the mother to return for follow-up in 3 days.

* Countries may decide to treat with intramuscular gentamicin for 7 days or 2 days. If a country chooses 2 days, the mandatory follow-up visit is in 3 days.

CRITICAL ILLNESS

- Infants with any one (or more) of the signs listed in the top row of the chart above are classified as CRITICAL ILLNESS.
- They have signs that require inpatient care. They need to be referred to the next higher-level facility urgently and should not be treated at outpatient level.
- These infants are at higher risk of dying and thus you should explain again to the mother/caregiver that the infant is very sick and needs advanced care.
- Give the infant the urgent pre-referral treatment. Do whatever you can to facilitate referral of sick young infants with CRITICAL ILLNESS because these infants will need specialized care including parenteral antibiotics, oxygen, feeding through a nasal gastric tube, and round-the clock monitoring.
- If referral is still not feasible, give treatments as described in the right column of the Assess and Classify box in the chart above.

CLINICAL SEVERE INFECTION

- If the young infant does not have any of the signs of critical illness, determine if the young infant has any one of the signs of CLINICAL SEVERE INFECTION:
- Infants with any one (or more) of these signs are classified as CLINICAL SEVERE INFECTION. These infants also need referral. However, when treatment at a referral facility is refused or not feasible, they could be treated with intramuscular gentamicin injections given at the outpatient clinic and oral amoxicillin given at home.

They can be treated with either of the following options:

Option 1: Give oral amoxicillin for 7 days and gentamicin injection for 7 days

Option 2: Give oral amoxicillin for 7 days and gentamicin injection for 2 days only

SEVERE PNEUMONIA

- If an infant's only sign of very severe disease is fast breathing (70 breaths per minute or more, counted twice), the infant is classified as having SEVERE PNEUMONIA.

These infants should be referred to the next higher level facility. However, when referral is refused or not feasible, they could be treated at outpatient clinic with oral amoxicillin. Use the amoxicillin dosage chart on chart booklet.

Remember that infants whose only sign was fast breathing (60 to 69 breaths per minute, counted twice) were classified as PNEUMONIA and are treated with oral amoxicillin; they are not referred initially, but are followed up in 3 days and then referred if they are not improving or are worse.

1.1.1 TREAT THE SICK YOUNG INFANT AND COUNSEL THE MOTHER/CAREGIVER

Based on the young infant's classifications, you have identified the treatments and counseling needed.

1.1.1.1 GIVE INTRAMUSCULAR INJECTIONS OF ANTIBIOTICS

There are three situations when you will give young infant antibiotics intramuscularly:

- For a young infant classified as POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, give the first dose of gentamicin and ampicillin intramuscularly prior to urgent referral.
- Where referral is refused or not feasible, and the young infant is classified as CRITICAL ILLNESS after further assessment, and referral is still not feasible, give a daily injection of gentamicin. In addition, give an injection of ampicillin twice each day.
- Where referral is refused or not feasible, and the young infant is classified as CLINICAL SEVERE INFECTION after further assessment, give a daily gentamicin injection. In addition, the Mother/Caregiver will give oral amoxicillin tablets to the young infant twice each day.

HOW TO GIVE INTRAMUSCULAR INJECTIONS

PREPARE GENTAMICIN FOR INTRAMUSCULAR INJECTION

- Wash your hands thoroughly and put on gloves.
- Gather a vial or ampoule of gentamicin, sterile needle, syringe, alcohol/antiseptic swabs and injection safety box.
- Injectable gentamicin is available in liquid form in 2 ml ampoules or vials in several strengths of 10mg/ml, 20 mg/ml or 40 mg/ml check the concentration. Most commonly available preparation is 40mg/ml. Check that the gentamicin has not expired.
- Use a small 2 ml or 3 ml syringe with 0.1 ml markings to accurately measure the dose. The needle should be 23 G or 24 G of up to 2.5 cm long.
- Refer to your Chart Booklet to determine the dose appropriate for the young infant's weight.
- Draw up the medicine into the syringe.
- Check that you have the correct dose and inject the medication.

Give ONLY ONE injection of gentamicin daily and give the injection in the right or left thigh alternately from day to day.

PREPARE AMPICILLIN FOR INTRAMUSCULAR INJECTION

- The procedure of preparing ampicillin for intramuscular injection is similar to that described above for gentamicin except that ampicillin is available as powder in vials and needs adding sterile water. Follow the directions on the vial to prepare the medicine.
- Draw up 1.3 milliliters of sterile water and add it to the 250 milligram vial of ampicillin. Shake vial to mix the powder and water until it's completely dissolved.

Various disposable syringes with markings:



*5 ml syringe with
0.2 ml markings*



*3ml syringe with
0.1 ml markings*



*1ml syringe with
0.01 ml markings*

Ampoule and vial



Ampoules are very small bottles of medicine with thin pointed glass tops that you break off.



Vials are very small bottles of medicine with sealed rubber tops.

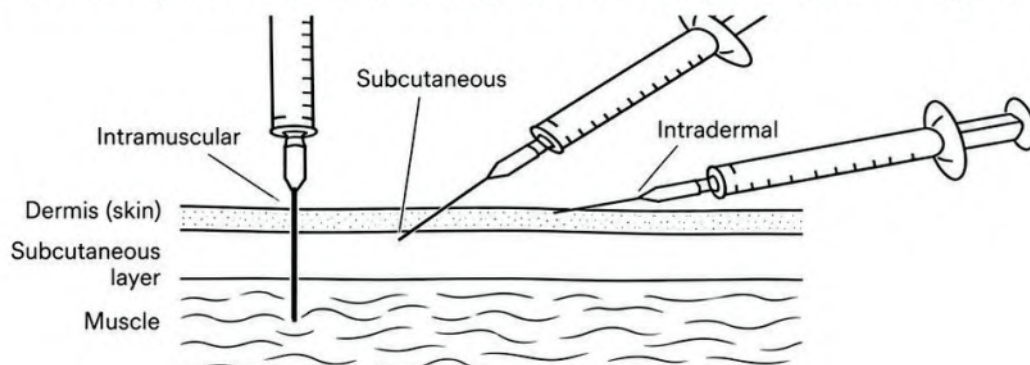
Breaking an ampoule



Intramuscular injection site in anterolateral thigh of infant



Visual comparison of intramuscular, subcutaneous, and intradermal injections



GIVE AN INTRAMUSCULAR INJECTION

- Explain to the mother/caregiver the necessity of giving the injection to the infant.
- Show the mother/caregiver how to hold the infant gently but very firmly, as the child will probably start wriggling as the injection is given to avoid danger of injury from the needle.
- Locate the proper injection site in the upper outer thigh.
- Clean the injection site with cotton and isopropyl alcohol.
- Confirm that the volume in the syringe corresponds to the correct dose for this infant.
- Stretch out (make taut or tight) the skin and muscle at the injection site between the thumb and first finger of the left hand.
- Hold the syringe like a pencil. When ready to inject, insert the needle into the skin at a 90-degree angle with a quick thrust, going deep enough to enter the muscle tissue.
- Draw back the plunger slightly to make sure there is no blood
- Give antibiotic drug by pushing the plunger slowly until the complete solution has been ejected.
- Leave the needle in place for a few seconds after completing to inject the solution.
- Remove the needle quickly in one stroke and press firmly over the injection site with a dry cotton wool.
- Hold the cotton wool in place for 1 to 2 minutes to prevent bleeding.

1.1.1.1 GIVE AN APPROPRIATE ORAL ANTIBIOTIC

- Follow the steps below to teach a mother/caregiver how to give an oral antibiotic at home.
 - Determine the appropriate oral medicine for the young infant and the dosage for the infant's weight

Oral amoxicillin is given to young infants who:

- Have LOCAL BACTERIAL INFECTION, or
- Have PNEUMONIA (fast breathing alone) in infant 7–59 days old

When referral is refused or not feasible, oral amoxicillin (and intramuscular gentamicin) is also given to young infants who:

- Have CLINICAL SEVERE INFECTION, or
- Have SEVERE PNEUMONIA (fast breathing alone) in infant less than 7 days old.

- Tell the mother/caregiver the reason for giving the medicine to the infant.
- Demonstrate how to measure a dose.
- Observe the mother/caregiver practice measuring a dose by herself.
- Ask the mother/caregiver to give the first dose to her infant and observe.
- Explain carefully how to give the medicine. Label and package the medicine. Tell the mother/caregiver how many times per day to give the dose. Tell her when to give it (such as early morning, lunch, dinner, before going to bed) and for how many days.
- Explain that all the tablets or syrup must be used to complete the course of treatment, even if the infant gets better.
- Check the Mother/Caregiver's understanding before she leaves the clinic.

- ❖ If you feel that the Mother/Caregiver is likely to have problems when she gives her infant the medicine(s) at home, offer more information, examples and practice. An infant needs to be treated correctly to get better

1.1.4.3 TEACH THE MOTHER/CAREGIVER HOW TO TREAT LOCAL INFECTIONS AT HOME

There are three types of local infection in a young infant that a mother/caregiver can treat at home: an umbilicus which is red or draining pus, skin pustules, or thrush. Twice each day for an infected umbilicus or skin pustules and four times each day for thrush, the mother/caregiver cleans the infected area and then applies gentian violet. Half-strength gentian violet must be used in the mouth

Explain and demonstrate the treatment to the mother/caregiver. Then watch her and guide her as needed while she gives the treatment to her infant. Ask her to return for follow-up in 2 days or sooner if the infection worsens. Explain that she should stop using gentian violet after 5 days (for umbilical or skin infection) or 7 days (for thrush). Ask her checking questions to be sure that she knows how many times a day to give the treatment and when to return.

If the mother/caregiver will treat skin pustules or umbilical infection, give her a bottle of full strength (0.5%) gentian violet.

If the Mother/Caregiver will treat thrush, give her a bottle of half-strength (0.25%) gentian violet.

1.1.4.4 MANAGE JAUNDICE

Young infants with JAUNDICE need home care just like those without any problem. They do not need any medication. However, the mother/caregiver needs to be counseled to return immediately if palms and soles appear to be yellow. Also, you should follow up infants with jaundice the next day to assess if jaundice is worsening.

1.1.5 GIVE FOLLOW-UP CARE FOR THE SICK YOUNG INFANT

Follow-up visits are recommended for young infants who are classified as, PNEUMONIA or SEVERE PNEUMONIA, LOCAL BACTERIAL INFECTION, or JAUNDICE.

Extremely important is follow-up of infants having CRITICAL ILLNESS and CLINICAL SEVERE INFECTION where referral was refused or not feasible and are treated at home. They need close follow-up for signs of deterioration at each contact for treatment.

As with the sick child who comes for follow-up, a sick young infant is assessed differently at a follow-up visit than at an initial visit. Once you know that the young infant has been brought to the clinic for follow-up, ask whether there are any new problems. Also, assess every young infant for signs of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE, PNEUMONIA, and LOCAL BACTERIAL INFECTION. An infant who has a new problem should receive a full assessment as if it were an initial visit.

1.1.5.1 CRITICAL ILLNESS WHERE REFERRAL WAS REFUSED OR NOT FEASIBLE

When a young infant classified as having CRITICAL ILLNESS returns for each injection of antibiotics, follow the instructions in the “Critical illness” box of the follow-up section of the chart booklet. These infant needs inpatient care and should not be treated at outpatient level. Explain again to the caregiver that the infant is very sick and needs urgent referral for hospital care.

If referral is still not feasible, continue giving once daily IM gentamicin (depending on the national recommendations for 2 or 7 days) and twice -daily IM ampicillin until referral is feasible or for 7 days.

1.1.1.1 CLINICAL SEVERE INFECTION WHERE REFERRAL WAS REFUSED OR NOT FEASIBLE

Infants having CLINICAL SEVERE INFECTION who are treated at home need close follow-up for signs of deterioration. At each contact for gentamicin injection and, if a 2 -day gentamicin regimen is used, in 3 days, that is on day 4 of treatment, assess the infant for signs of deterioration.

Refer the young infant urgently if:

- the infant becomes worse or
- any new sign of CLINICAL SEVERE INFECTION appears while on treatment or
- if no improvement in 3 days, or
- any sign of CLINICAL SEVERE INFECTION is still present at the contact for 7th injection of gentamicin.

If the young infant is improving, complete the 2 days (or 7 days) treatment with IM gentamicin. Ask the Mother/Caregiver to continue giving the amoxicillin twice daily until all the medicines are finished.

1.1.1.2 PNEUMONIA OR SEVERE PNEUMONIA

- When a young infant classified as having PNEUMONIA or SEVERE PNEUMONIA, returns for follow-up in 3 days.
- Reassess the young infant for Possible Serious Bacterial Infection or Very Severe Disease, Pneumonia, and Local Bacterial Infection at each visit.
- Refer the young infant if:
 - The infant becomes worse after treatment is started or
 - Any new sign of POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE appears while on treatment.
- ❖ If the young infant is improving, ask the mother/caregiver to continue giving the oral amoxicillin twice daily until all the medicines are finished.
 - Ask the Mother/Caregiver to bring the young infant back in 4 more days.
- Young infants with fast breathing alone should be checked as often as possible but it is mandatory to do so in 3 days, that is on day 4 of treatment.

1.1.1.3 LOCAL BACTERIAL INFECTION

- When a young infant classified as having LOCAL BACTERIAL INFECTION returns for follow up in 3 days.
- To assess the young infant, look at the umbilicus or skin pustules. Then select the appropriate treatment.
 - If umbilical pus or redness or skin pustules remains same or is worse, refer the infant to the next higher level facility.

- If umbilical pus and redness are improved, tell the mother/caregiver to complete the 5 days of antibiotic that she was given during the initial visit.
- If skin pustules have improved tell the mother/caregiver to continue giving the antibiotic. She should also continue cleaning and applying gentian violet to the skin pustules or umbilicus for a total of 5 days.

1.1.1.1 JAUNDICE

- When a young infant classified as having JAUNDICE returns for follow-up in 1 day.
- At follow up, assess if the infant has yellow palms or soles.
 - If the infant has yellow palms or soles, classify as SEVERE JAUNDICE and refer urgently to hospital.
 - If no yellow palms or soles, but jaundice has not decreased compared to the initial visit, continue to follow up daily until jaundice starts decreasing.
 - If jaundice has started decreasing, reassure the mother/caregiver and ask her to continue home care. Ask her to return for another follow-up visit at 3 weeks.
 - If a young infant continues to have jaundice beyond 3 weeks of age, refer to hospital for further assessment.



Exercise

Case: Musu

Musu is 7 weeks old. Her weight is 3 kg. Her axillary temperature is **37.8°C**. Her Mother/Caregiver has brought her because she has difficulty of breast feeding. The health worker first assesses her for signs of possible serious bacterial infection or very severe disease, pneumonia, and local bacterial infection. Her Mother/Caregiver says that she has not had convulsions and is not breastfeeding well. Her breathing rate is 68 per minute. The health worker recounts the breathing rate and it is 66 per minute. She was sleeping in her mother/caregiver's arms but awoke when her Mother/Caregiver unwrapped her. She has severe chest indrawing. Her umbilicus is not red or draining pus. She has a rash in the area of her diaper, but there are no pustules. There are no signs of jaundice in the skin. She is crying and moving her arms and legs. When the health worker asks the mother/caregiver about diarrhoea, the mother/caregiver replies no diarrhea. She stopped once when her mother/caregiver put her to the breast. She began crying again when she stopped breastfeeding.

1.2 MANAGEMENT OF THE NEWBORN DELIVERED IN FACILITY

1.1.1 Essential Newborn Care (ENC)

Essential Newborn Care is a set of evidence-based, simple, low-cost interventions that can dramatically reduce newborn deaths & complications when provided immediately after every birth.

There are 4 pillars of ENC

1. Immediate & Thorough Drying + Delayed Cord Clamping + Skin-to-Skin Contact
 - Dry the baby thoroughly with a clean, dry cloth.
 - Delay cord clamping for 1 – 3 minutes in vigorous term & preterm babies (improves iron stores & reduces anemia)
 - Place the naked baby prone on the Mother/Caregiver's bare chest (skin-to-skin) immediately after birth & cover both with a warm blanket.
2. Early initiation of Breastfeeding (within the first hour)
 - Help the Mother/Caregiver initiate breastfeeding within the first hour of life (even before expelling the placenta).
 - No prelacteal feeds (water, glucose water, formula, honey, etc.) should be given.
3. Thermal Care (Warm chain)

Always prevent hypothermia by

- Immediate drying & skin-to-skin contact
 - Warm delivery room
 - Bathing delayed for at least 24 hours
 - Kangaroo Mother/Caregiver Care (KMC) for low-birth weight / preterm babies
4. Hygiene & Cord Care (Infection Prevention)
 - Hand washing with soap by birth attendant & Mother/Caregiver
 - Clean cord cutting with sterile instrument
 - Cord care with chlorhexidine gel; keep cord dry

Additional Key Components of ENC

- Vitamin K injection 1 mg IM (0.5 mg for <1500 g) within 1 hour
- Tetracycline Eye ointment on both eyes within 1 hour

ESSENTIAL NEWBORN CARE ACTIONS

Immediate Newborn Care After Birth

Step 1

Dry baby's body with dry and warm towel. Wipe eye, as you dry stimulate breathing. Wrap with another dry towel and cover the head while the baby is on mother's abdomen.

Step 2

Assess Breathing, while drying, and manage accordingly - See BIRTH ASPHYXIA chart.

Step 3

Clamp/tie the cord two fingers from abdomen and another clamp/tie two fingers from the 1st one.

Cut the cord between the 1st and 2nd clamp/tie.

Step 4

Place the baby in skin-to-skin contact with the mother.

Keep all babies without complication, in skin to skin contact for one hour.



Step 5

Initiate breastfeeding immediately within 1 hour of life.

Step 6:

Apply Tetracycline eye ointment once on both eyes.

Step 7

Apply Chlorohexidine on the cord.

Step 8

Give Vitamin K, 1 mg IM on anterior mid lateral thigh. (If GA < 34 wks or Wt<1,500gm , 0.5 mg).

Step 9

Measure baby temperature, Weigh baby & classify - See BIRTH WT & GA Chart.

NOTES

- a) If baby needs resuscitation cut the cord immediately. Otherwise, wait for 1-3 minutes.
- b) Place newborn identification band on the wrist or ankle.
- c) Don't forget to record what is done to the newborn.
- d) Give HepB-BD, BCG and OPV 0 before discharge.
- e) Delay bathing of the baby for 24 hours after birth.
- f) Advise mother to apply Chlorohexidine on the cord daily for 7 days and NEVER apply to the eyes.
- g) If mother has respiratory infections (like flu, Covid), advise her to wear face mask and to wash her hands while caring the newborn.
- h) Provide postnatal visits at 6 - 24 hours, 3 days, 7 days and immunization visit at 6 weeks.

1.1.1 Check all sick newborns for history suggesting birth asphyxia.

Birth asphyxia is a diagnosis that is made when a newborn does not initiate breathing or sustain normal breathing immediately after birth. It is also diagnosed when a newborn who does not cry immediately after birth. This means that a fetus or newborn had poor oxygen supply to their body including the brain before, during, or after delivery. Birth asphyxia in Liberia happens mostly during delivery. Many babies in Liberia die because they suffer birth asphyxia. The diagnosis asphyxia can also be made using an APGAR score of <5 in the 5th and 10th minutes after birth. A health care provider promptly recognizing that a baby is asphyxiated can improve the outcome by helping the baby to start breathing immediately after the baby is born. If this is not done, the baby could die or develop damaging lifelong complications.

Several situations can put a baby at risks of birth asphyxia.

- Before delivery
 - High blood pressure in a pregnant woman (pre-eclampsia, eclampsia, and Chronic hypertension)
 - Infection in the pregnant woman (Sepsis or septic shock)
 - Uterine rupture
 - Post-term fetus
 - Maternal anemia
 - Maternal diabetes
- During delivery
 - Prolong or obstructed labor
 - Cord prolapse, cord knot or compression (the cord presents out of the uterus before the baby is delivered)
 - Placenta Previa (placenta covering the cervix where the baby should pass to come out)

- Placenta abruptio (placenta separation from the uterine wall)
- Uterine rupture
- After delivery
 - Meconium aspiration
 - A newborn deteriorating from conditions including complex congenital heart disease, severe anemia, prematurity, multiple gestation with compromise to one twin etc.....
 - Congenital pneumonia

1.2.2.1 ASSESS AND CLASSIFY ALL NEWBORNS FOR BIRTH ASPHYXIA

2.2.1.1 ASSESS FOR BIRTH ASPHYXIA

If you are attending to a delivery, or the baby was brought to you immediately after birth, Assess and Check for Birth Asphyxia while drying and wrapping with dry towel or cloth.

Ask, Look and check for:	
Ask: • Was there prolonged or obstructed labor? • Was the baby born in meconium-stained fluid? • Is there history of the baby not crying / Weak cry immediately after birth? • Does the baby have any danger sign (ex: seizures, not sucking, unconscious etc...)?	Look and check for: • Look at the baby's breathing ○ Is the baby not breathing? ○ Is the baby gasping? ○ Is the baby breathing poorly (<30 breath/minute)? ○ Is the baby breathing normally (Crying or breathing > 30 breaths/min)?

Classify
for
Birth

1.2.2.1.2 CLASSIFY BIRTH ASPHYXIA (DEPRESSED NEONATE)

- Determine if a baby has Birth Asphyxia and is not breathing or breathing poorly, helping the baby breathe within the first minute “Golden Minute of Life” is very important for better outcome.

***IF YOU ARE ATTENDING DELIVERY or BABY BROUGHT TO YOU IMMEDIATELY AFTER BIRTH**

- Assess and check for Birth Asphyxia while drying and wrapping with dry cloth
- If there is Birth Asphyxia, start resuscitation within the 1st minute "Golden Minute of life"

Assess.	Classify	Identify Treatment
○ Not breathing or gasping at birth	RESUSCITATION NEEDED	• Follow RESUSCITATION OF BIRTH ASPHYXIA • Reassess for improvement @ 5 MINS
○ Is the baby not breathing after 5min? or ○ Is the baby gasping after 5min? or ○ Is the baby breathing poorly (<30 breath per minute) after 5min? or ○ No crying / weak cry after birth? Or ○ Any danger sign	BIRTH ASPHYXIA	• Provide Essential Newborn Care • Refer newborn as soon as possible • If baby remains weak or is having irregular breathing after 5mins resuscitation; refer urgently to hospital while continuing to resuscitate on the way • If baby shows no response (no spontaneous breathing) after 20 minutes, stop resuscitation
○ Is baby breathing well and active after 5 mins?	BIRTH ASPHYXIA LESS LIKELY	➤ Monitor baby and mother continuously for 6 hours. If any danger signs reclassify as BIRTH ASPHYXIA and refer. ➤ Follow up after 12 hrs, 24 hrs (in the facility), 3 days, 7 days and 6 weeks
• Breathing normally (crying or ≥30 breaths/ minute)	NO BIRTH ASPHYXIA	➤ Give ENC ➤ Give HepB-BD, BCG and OPV 0 ➤ Advise mother when to return immediately ➤ Follow after 6 hrs (in the facility), 3 days and 7 days and 6 weeks

The 1st classification is for babies delivered in facility. It tells the need for resuscitation as described below. For babies delivered outside and brought to you, classify as Birth Asphyxia, Birth Asphyxia Less Likely or No Birth Asphyxia.

4.3.1 Birth asphyxia & newborn resuscitation

Primary respiratory problem in most cases of perinatal asphyxia is lack of initiation of ventilation or lack of effective ventilation, so the most important intervention is to assist the neonate to take breaths more effectively. For **neonates who are not breathing at birth, a self-inflating bag-mask can effectively provide positive pressure ventilation with room air**. Supplemental oxygen may be required in some cases.

Conduct a rapid assessment of all newborns within a few seconds while drying* the baby; rapidly assess:

- ☐ **A**pppearance (color, cyanosis)
- ☐ **P**ulse rate
- ☐ **G**rimace
- ☐ **A**ctivity and muscle tone
- ☐ **R**espiration: is the baby breathing?
- ☐ Birth trauma; congenital abnormalities (congenital heart disease)

***Dry the baby thoroughly at birth. Drying helps keep the baby warm and stimulates breathing.**

Note the baby's general appearance (look at physical activity, muscle tone, posture and level of consciousness), skin (color, texture, nails; any rashes), lung functions, heart sounds and pulses in the groin (femoral), abdomen.

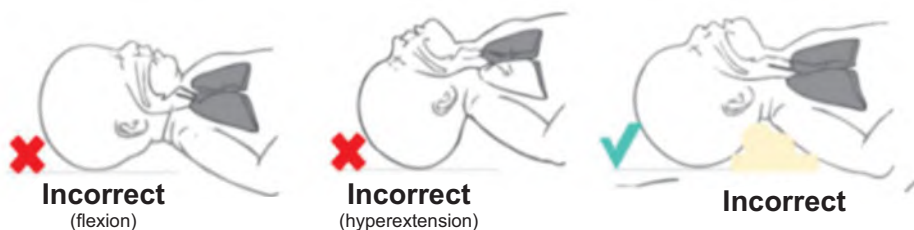
IMMEDIATELY help baby to breathe if **ANY** of the following is observed:

- Not breathing at all
- Not crying
- Breathing shallowly or with only agonal breaths
- Gasping
- Heart rate less than 100 bpm
- Central cyanosis

Follow the **ABC** for newborn resuscitation within the first 60 seconds of birth (The Golden Minute).

Airway

Clear the airway by positioning the neck slightly extended. Placing a small roll of cloth under the shoulders may help. Stimulate breathing by rubbing the back 2-3 times, but do not slap.



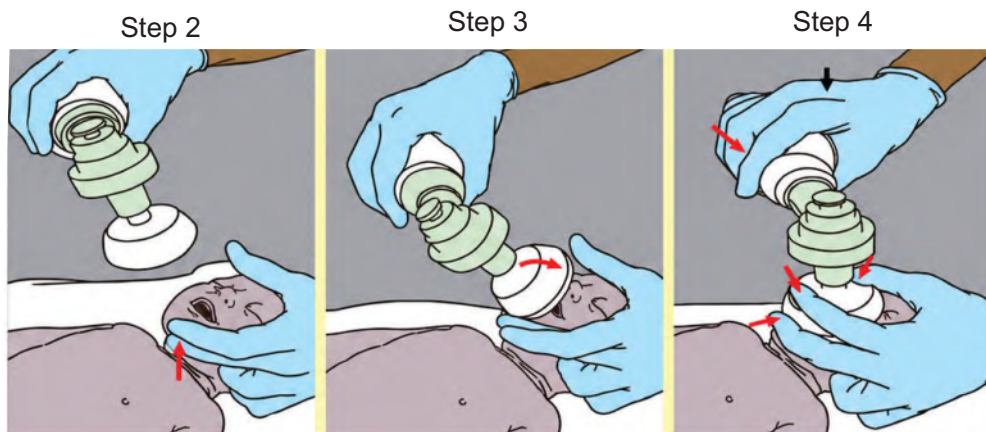
Only carry out suction if newborn has mouth or nose blocked by meconium that can interfere with positive pressure ventilation; if so, suction from mouth (first) **then** nose. Suction equipment can be used to clear excessive mucus or secretions from airway (oral or nasal passages) of neonates to facilitate breathing. Suction may cause bradycardia. Be careful not to traumatize the oropharynx. Suction can be done using either electrical suction machines, foot-operated suction machines, or manual suction devices. Suctioning for too long, or too deep or vigorous can cause injury; do not suck right down the throat. **DO NOT** suction more than 2 times for a duration of exceeding 20 seconds.

If the baby is still not breathing well after cleaning airway and brief stimulation, **IMMEDIATELY VENTILATE** using bag-mask. **DO NOT** prolong suctioning or stimulation.

Breathing

Provide positive pressure ventilation (PPV) by **ventilating with a resuscitation bag-mask**:

- 1) Position the neck slightly extended in neutral position.
- 2) Hold the mask on the face with the thumb and index finger on top of the mask. Use the middle finger to hold the chin up toward the mask.
- 3) Fit mask to face; make a **tight seal** between mask and face
 - Check that mask size is correct – mask should cover the chin, mouth, and nose, but not the eyes
 - If you hear air escaping from the mask, form a better seal; most common leak is between nose and cheeks
- 4) Squeeze bag to provide oxygen



- 5) Watch for smooth flow of air from the bag into the baby, **not** jerky breaths.
- 6) Observe for normal chest movement.
- 7) **Give 40-60 breaths per minute.**
- 8) The first 5 breaths should involve longer time for inflation.
- 9) Count aloud: “breathe–2–3”; squeeze the bag as you say “breathe” and release while you say “2...3”. If chest is moving with each ventilation breath, continue ventilation for 60 seconds or until baby begins to breathe.
 - Be sure not to squeeze too hard to cause pneumothorax.

Circulation

Check the heart rate with a stethoscope (or feel an umbilical pulse if stethoscope unavailable) and continue to ventilate



The primary cause of cardiopulmonary arrest in newborns is due to failure of ventilation/respiration, thus resuscitation focuses on restoring adequate ventilation. If respiratory arrest just occurred, often times rescue breaths alone are sufficient to restore normal circulation, and focus in neonatal resuscitation should be on ensuring effective ventilation with chest rise and improvement in heart rate.

If baby's heart rate is less than 60 bpm, start chest compressions with thumb on the sternum, or 2 fingers is used in addition to rescue breaths. **Perform 3 chest compressions to 1 breath (compression—compression—compression—breath).**

If neonate is not responding, check the seal on the bag-mask, reposition and ensure open airway, increase pressure of rescue breaths, and connect the resuscitation bag-mask to oxygen. If there is no return of spontaneous breathing and circulation after 20 minutes of effective resuscitation, it is appropriate to counsel the family and stop CPR.

Give oxygen if:

- Pulse SpO₂ < 90% with a good pulse wave. (Pulse oximetry may be unreliable if the child's peripheral perfusion is poor)
- Give oxygen to all young infants with: Convulsions, Apnea or breathing <30 breaths per minute, Fast breathing, severe chest indrawing, nasal flaring or grunting
- Use nasal prongs
 - It is the preferred method for delivering oxygen to pre-term and low-birth-weight infants, with a flow rate of 0.5-1 L/min, which can be increased to 2 L/min in severe respiratory distress
 - Place them just inside the nostrils and secure with a piece of tape on the cheeks near the nose, and take care that the nostrils are kept clear of mucus, which could block the flow of oxygen

Use 1mm prongs for small babies and 2mm prongs for term babies. If you have only adult-size prongs, and the outlet tubes are too far apart to fit into the child's nostrils, cut the outlet tubes off and direct the jet of oxygen into the nostrils.

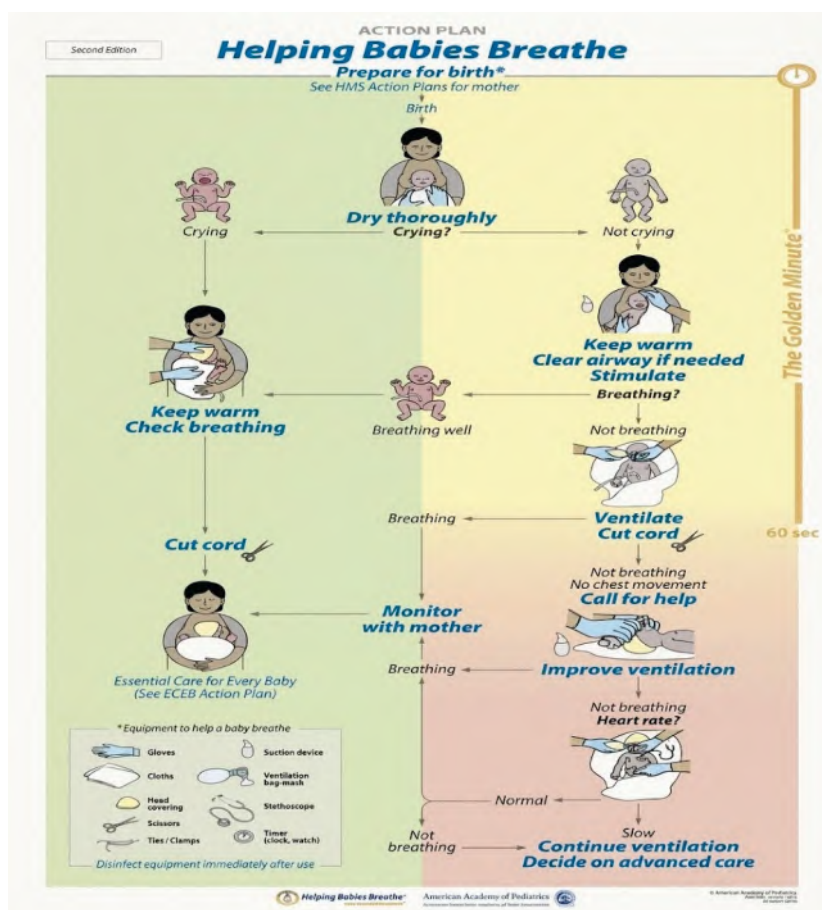
1.2.2.2 IDENTIFY TREATMENT FOR BIRTH ASPHYXIA

It is important to identify the treatment needed for an asphyxiated baby immediately otherwise the baby may die, or the baby may become severely disabled for life.

1.2.2.2.1 For babies delivered in your facility

- Start ventilation (Helping babies Breathe chart below)

- In newly born babies who do not start breathing despite thorough drying and additional stimulation, positive-pressure ventilation (ambu-bagging) should be initiated within one minute after birth.
- In neonates born through meconium-stained amniotic fluid who has not start breathing on their own, suction the mouth & nose quickly before initiating bag mask ventilation (ambu-bagging).
- Adequacy of ventilation should be assessed by observing visible chest movements and an accompanied increased heart rate after 60 seconds of ventilation.
- Reassess the baby at five minutes to determine the next course of action or the need for referral.



➤ When to Stop ventilation

- For newly born babies with no detectable heart rate after 20 minutes of effective ventilation, resuscitation should be stopped.
- For newly born babies who continue to have a heart rate below 60/minute and no spontaneous breathing after 20 minutes of resuscitation, resuscitation should be stopped.

❖ For Babies Classified as **Birth Asphyxia**

If baby remains weak or is having irregular breathing after 20 minutes

- Refer patient to a hospital immediately
- Ensure patient is transported safely (with ongoing effective resuscitation during transport)
- Communicate with the Referral facility

- If baby starts breathing regularly, continue giving essential newborn care
 - Monitor continuously for the first 24 hours for breathing difficulty, convulsions, poor suck or any other danger signs.
 - Refer if newborn symptoms progress or any danger signs are observed. Refer the newborn immediately and safely.
- ❖ For babies classified as No BIRTH ASPHYXIA
 - Provide Essential Newborn care

1.2.2.3 COUNSEL THE MOTHER/CAREGIVER

- Counsel the mother/caregiver of a baby with birth asphyxia:
 - To reduce mother/caregiver's anxiety, promote survival, prevent complications, and support development.
 - Close monitoring at home is essential in the first few weeks of life.
 - On early detection of danger signs including 'poor feeding, convulsions and on the need to be brought back to the health facility.
 - The baby needs extra attention to ensure normal feeding, growth, and development.
 - Promote exclusive breast feeding, hygiene and etc.
 - Encourage to complete all immunizations on schedule. Ensure the baby has taken the first vaccine and has a follow up date.
 - Stress the importance of follow-up visits for growth and development assessment.

1.2.3 ASSESS THE NEWBORN FOR BIRTHWEIGHT & GESTATIONAL AGE

- If you are attending delivery or a baby is brought to you within seven days of birth, you must assess for birth weight and gestational age.
- Every newborn assessment within the first hours should determine:
 - Actual birth weight
 - Whether the newborn is **Term, Preterm or Post-term**
 - Whether the baby is **Appropriate, Small, or Large for Gestational age.**
- **Low birth weight (LBW) and Prematurity** are among the leading causes of neonatal morbidity and mortality.
- **LBW and Preterm** babies are more likely to have breathing and feeding problems and develop infection and die than babies with a normal birth weight.

1.2.3.1 ASSESSING AND CLASSIFYING BIRTH WEIGHT AND GESTATIONAL AGE

Assess, Look

- Ask the gestational age
- Ask for birth weight or
- Weigh the baby (within 7 days of life)

ASSESS FOR BIRTH WEIGHT

- Ask for birth weight (outborn baby) or weigh the baby as soon as possible after birth (preferably within 1 hour)
- If home delivery: weigh immediately at first contact (within 7 days of life)

Classifying Birth Weight

Category	Birth weight
Normal Birth Weight	$\geq 2,500$ g
Low Birth Weight (LBW)	1,500 g – 2,499 g
Very Low Birth Weight (VLBW)	< 1500 g

Assessing Gestational Age

- Gestational age is the duration of pregnancy in weeks when the baby was born.

ASK the Gestational Age

- Last Normal Menstrual Period (LNMP) OR Antenatal Ultrasound records (if available)** – First trimester ultrasound scan is the most accurate).

ASSESS Gestational Age by looking at Physical & Neurological Assessment

- If gestational age cannot be assessed by the above 2 methods, use a clinical maturity assessment tool (like the **New Ballard Score or Parkin Score**)
- The **Parkin Score** – is a quick, reliable clinical tool for estimating a newborn's gestational age using just four external physical signs: **skin texture, skin color, ear firmness, and breast size**.

Feature	0	1	2	3	4
Skin Texture	Dark red, very thin	Thin & smooth	Smooth, medium thickness	Superficial peeling & rash	Thick, cracking & peeling
Skin color	Dark red	Uniformly pink	Pale pink	Pale, pink only on extremities	Pale everywhere
Ear firmness	Soft, no recoil	Soft edge, slow recoil	Some cartilage, ready recoil	Firm cartilage	Hard cartilage
Breast tissue	Not palpable	Palpable < 0.5 cm	Palpable 0.5 – 1 cm	Palpable 1 cm	$>$

Score	1	2	3	4	5	6	7	8	9	10	11	12
Gestational Age (weeks)	27	30	33	34 1/2	36	37	38 1/2	39 1/2	40	41	41 1/2	42

Classifying Gestational Age

Category	Gestational Age
Term	≥ 37 weeks
Preterm	32 – 37 weeks
Very Preterm	< 32 weeks

ASSESS	CLASSIFY	TREATMENT
• Weight < 1,500gm - OR • Gestational age < 32 weeks	VERY LOW BIRTH WEIGHT AND/OR VERY PRETERM	• Continue breastfeeding (if not sucking feed expressed breast milk by cup and spoon) • Start Kangaroo Mother Care (KMC) • Give Vitamin K 0.5mg IM on anterior mid lateral thigh, if not already given • Refer URGENTLY with mother to hospital with KMC position
▪ Weight 1,500 - 2,500 gm. - OR • Gestational age 32-37 weeks	LOW BIRTH WEIGHT AND/OR PRETERM	• KMC if <2,000gm • Counsel on optimal breastfeeding & danger signs • Counsel mother on prevention of infection • Give Vitamin K 1mg IM (if GA < 34 wks, 0.5 mg IM) on anterior mid lateral thigh if not already given • If baby = 2,000 gms reassess after 6 –24 hrs, follow-up visits at age 3 days, 7 days, 14 days, 28 days and 6 weeks • Give 1st dose of vaccine • Advise mother when to return immediately
▪ Weight = 2,500 gm. - OR • Gestational age = 37 weeks	NORMAL BIRTH WEIGHT AND/OR TERM	➤ Counsel on optimal breastfeeding ➤ Counsel mother/family on prevention of infection • Reassess in 6 –24 hrs, and follow-up in 3 days, 7 days, 14 days, 28 days and 6 weeks ➤ Give 1st dose of vaccine ➤ Give Vitamin K 1mg IM on anterior mid-thigh if not already given ➤ Advise mother when to return immediately

1.2.3.2 TREATING AND COUNSELLING LOW BIRTH WEIGHT AND PRETERM BABIES

1.2.3.2.1 Thermal Protection – Kangaroo Mother/Caregiver Care (KMC)

KMC is the standard of care for stable LBW infants and has three core components:



Continuous skin-to-skin contact between the baby's front and the Mother/Caregiver's chest
Skin-to-skin contact starts at birth and is continued day and night. The baby, wearing only a nappy/diaper and hat, is placed upright on the Mother/Caregiver's bare chest between her breasts. There may be brief interruptions such as when the baby is being bathed.

Exclusive breastfeeding: the baby breastfeeds within one hour after birth and then every two to three hours. For those unable to suck effectively, the Mother/Caregiver must be supported to express breast milk for cup or tube feeding.

Support for the Mother/Caregiver: The Mother/Caregiver needs support from family and healthcare workers to continue KMC day and night. The Mother/Caregiver can continue to do what she normally does while providing KMC, for example, cook, clean & sleep.

KMC helps the baby in stabilizing its temperature, making the breathing stable and regular, improving immunity, reducing infection and enabling it to feed better and gain weight faster. KMC helps the Mother/Caregiver in becoming more attached to her baby emotionally; gives her confidence and ability to care for her small baby.

KMC categories:

- Facility KMC: < 1.5 kg
- Ambulatory KMC: 1.5–1.8 kg
- Community KMC: >1.8 kg (stable)

1.2.4.2.1 Feeding and Nutrition

Feeding Schedule and Route for Low Birth Weight and Preterm Newborns

This chart provides guidelines for how often and by which route to feed stable LBW and preterm infants. The regime progresses from initial stabilization to full oral feeding based on the infant's weight, gestational age, and clinical progress.

Weight & Gestational Age	Ideal Feeding Schedule	Feeding Route (by Infant's Age)	
		Days 1-3	Day 3 to Week 3
< 1.5 kg and/or < 32 weeks	Feed every 2 hours	Tube Feeds (Nasogastric/Orogastric)	Tube or Cup Feeds (Transition to cup as the baby shows readiness)

Weight & Gestational Age	Ideal Feeding Schedule	Feeding Route (by Infant's Age)	
1.5 – 1.8 kg and/or 32 - 34 weeks	Feed every 3 hours	Tube or Cup Feeds (Based on infant's sucking ability and coordination)	Breastfeed If unsatisfactory, supplement with Cup
> 1.8 – 2.5 kg and/or > 34 weeks	Feed every 3 hours or on demand	Breastfeed If unsatisfactory, use Cup	Breastfeed

Vitamin & Iron Supplementation:

- Vitamin K: 0.5 mg IM at birth for preterm infants.
- Multivitamins: If available, provide daily from when full feeds are tolerated until 6 months.
- Iron: Start at 2 weeks of age if tolerating full feeds (2-4 mg/kg/day) until 6 months.

Infection Prevention

- Practice strict handwashing.
- Keep the umbilical cord clean and dry.
- Minimize invasive procedures.
- Counsel the family on recognizing signs of infection (lethargy, fever, poor feeding) and seeking care immediately.

When to Refer

- Immediately refer a Low Birth Weight or preterm newborn to a hospital if ANY of the following signs are present.
 - Weak / Floppy (lethargic)
 - Convulsions or fits
 - Fever ($\geq 37.5^{\circ}\text{C}$) or Hypothermia ($< 35.5^{\circ}\text{C}$)
 - Respiratory Distress: Fast breathing ($>60/\text{min}$), grunting, severe chest indrawing
 - Apnea: Noticeable pauses in breathing
 - Unable to feed from breast or by cup
 - Not gaining weight or excessive weight loss

1.2.3.3 POSTNATAL FOLLOW-UP FOR LBW INFANTS

An extra home visit is required for LBW babies compared to normal-weight infants to ensure close monitoring and support.

Visit Timing	Key Assessments & Actions
Reassess within 24hrs	• Check for all danger signs. • Support and observe Kangaroo Mother/Caregiver Care (KMC).

Visit Timing	Key Assessments & Actions
	• Assess and support breastfeeding. • Ensure Vitamin A (200,000 IU) was given to the Mother/Caregiver. • Provide missed immunizations (BCG, OPV).
Visit at 3 Days	• Repeat full newborn assessment. • Reinforce counselling on KMC, feeding, and infection prevention. • Check for signs of jaundice. • Discuss family planning with the Mother/Caregiver.
Visit at 7 Days	• Check weight and assess for weight gain. • Ensure all immunizations and maternal Vitamin A are provided. • Finalize plans for continued KMC and feeding support at home. • Schedule next follow-up visit as needed.

1.3. DIARRHEA IN A SICK YOUNG INFANT (BIRTH TO 2 MONTHS)

1.3.1 ASSESS AND CLASSIFY SICK YOUNG INFANT FROM BIRTH UP TO 2 MONTHS FOR DIARRHEA

1.3.1.1 ASSESS DIARRHEA

ASK: DOES THE YOUNG INFANT HAVE DIARRHOEA?

If the mother/caregiver says that the young infant has diarrhea, assess and classify for dehydration. The normally frequent, loose or semi-solid stools of a breastfed young infant are not diarrhea. The mother/caregiver of a breastfed young infant can recognize diarrhea because the consistency or frequency of the stools is different than normal. A young infant has diarrhea if the stools have changed from usual pattern and are more frequent than usual, and are watery (more water than faecal matter). The assessment is similar to the assessment of diarrhea for an older infant or young child, but thirst is not assessed because it is not possible to distinguish thirst from hunger in a young infant.

Read the steps to assess the child for dehydration if the child has diarrhea:

THEN ASK:
Does the young infant have diarrhea?

IF YES, ASK:

- For how long?
- Is there blood in the stool?

LOOK AND FEEL:

- Look at the young infant's general condition.
 - Is the infant restless and irritable?
- Infant's movements:
 - Does the infant move only when stimulated and then stops?
 - Does the infant not move even when stimulated?
- Look for sunken eyes.
- Pinch the skin of the abdomen. Does it go back:
 - Very slowly (longer than 2 seconds)?
 - Slowly?

LOOK AT THE YOUNG INFANT'S GENERAL CONDITION: IS THE INFANT RESTLESS AND IRRITABLE?

- An infant has the sign restless and irritable if the infant is restless and irritable all the time or every time he is touched and handled.

LOOK at the young infant's movements:

- Does the young infant move on his or her own?
- Does the infant move only when stimulated but then stops?
- Does the infant not move at all?

LOOK FOR SUNKEN EYES

- The eyes of a dehydrated infant may look sunken.
- Even though the sign "sunken eyes" is less reliable in a low-weight infant, it can still be used to classify the young infant's dehydration.

PINCH THE SKIN OF THE ABDOMEN:

➤ DOES IT GO BACK:

- Very slowly (longer than 2 seconds)?
 - Slowly?
 - Immediately?
- Locate the area on the infant's abdomen halfway between the umbilicus and the side of the abdomen
 - Use your thumb and first finger. Do not use your fingertips as this will cause pain.
 - Pinch the skin for one second and then release it.
 - When you release the skin, look to see if the skin pinch goes back: Very slowly (longer than 2 seconds) or Slowly or Immediately



1.3.1.2 CLASSIFY DIARRHEA

- To classify diarrhea in a young infant compare the infant's signs to the signs listed and choose one classification for dehydration.
- Choose an additional classification if the infant has diarrhea for 14 days or more, or blood in the stool.
 - If the young infant has two or all three of the signs in the **Red row**, classify the infant as having SEVERE DEHYDRATION
 - If the young infant has two or all three signs in the **Yellow row**, classify the infant as having SOME DEHYDRATION
 - A young infant who does not have enough signs to be classified as having SOME or SEVERE DEHYDRATION is classified as having NO DEHYDRATION.

SIGNS	CLASSIFY AS:	TREATMENT (Urgent pre-referral treatments are in bold print)
➤ Two of the following signs: • Movement only when stimulated, or • No movement even when stimulated • Sunken eyes • Skin pinch goes back very slowly	SEVERE DEHYDRATION	➤ If infant has another severe classification: ○ Refer URGENTLY to hospital with mother/caregiver giving frequent sips of ORS on the way ○ Advise mother to continue breastfeeding more frequently ○ Advise mother/caregiver how to keep the young infant warm on the way to hospital ➤ If infant does not have any other severe classification; give fluid for severe dehydration (Plan C).
➤ Two of the following signs: • Restless or irritable • Sunken eyes • Skin pinch goes back slowly	SOME DEHYDRATION	➤ If infant has another severe classification: ○ Refer URGENTLY to hospital with mother/caregiver giving frequent sips of ORS on the way ○ Advise mother to continue breastfeeding more frequently ○ Advise mother/caregiver how to keep the young infant warm on the way to hospital ➤ If infant does not have any other severe classification. ○ Give fluid for some dehydration and Zinc (Plan B) ○ Advise mother/caregiver when to return immediately ○ Follow-up in 2 days

➤ Not enough signs to classify as some or severe dehydration	NO DEHYDRATION	➤ Advise Mother/Caregiver when to return immediately ➤ Follow-up in 5 days if not improving ➤ Give fluids to treat diarrhoea at home and Zinc (Plan A)
➤ Diarrhoea lasting 14 days or more	SEVERE PERSISTENT DIARRHEA	➤ Give first dose of IM Ampicillin & Gentamycin ➤ Treat to prevent low blood sugar ➤ Advise how to keep infant warm on the way to the hospital ➤ Refer to hospital
➤ Blood in stool	DYSENTERY	➤ Give first dose of IM Ampicillin & Gentamycin ➤ Treat to prevent low blood sugar ➤ Advise how to keep infant warm on the way to the hospital ➤ Refer to hospital

- ❖ Note that there is only one possible classification for persistent diarrhea in a young infant. This is because any young infant who has persistent diarrhea has suffered with diarrhea a large part of his life and should be referred.

1.3.1.3 IDENTIFY APPROPRIATE TREATMENT FOR DIARRHEA IN A SICK YOUNG INFANT

- For each of the young infant's classifications, find the treatments recommended on the YOUNG INFANT charts. List them on the recording form.
- **DETERMINE IF THE YOUNG INFANT NEEDS URGENT REFERRAL**
 - If the young infant has **SEVERE DEHYDRATION** as the only severe classification, the infant needs rehydration with IV fluids according to Plan C.
 - If your clinic has the ability to treat the infant according to Plan C, you may keep and treat the infant. Otherwise urgently refer the infant for IV therapy.
 - If a young infant has both **SEVERE DEHYDRATION** and **POSSIBLE SERIOUS BACTERIAL INFECTION OR VERY SEVERE DISEASE** or **SEVERE JAUNDICE**, refer the infant urgently to hospital. The mother/caregiver should give frequent sips of ORS on the way and continue breastfeeding.

➤ **IDENTIFY URGENT, PRE-REFERRAL TREATMENT NEEDED**

- Before urgently referring a young infant to hospital, give all appropriate pre-referral treatments.
- Some treatments should not be given before referral because they are not urgently needed and would delay referral.
- Young infants urgently referred for SEVERE DEHYDRATION should be given frequent sips of ORS and breastfeeding on the way to hospital.
- Mother/caregivers of all referred infants should be taught how to keep the young infant warm on the way to the hospital.

1.3.1.4 TREAT DIARRHOEA

Diarrhoea in young infants can quickly lead to dehydration, malnutrition, and serious illness if not managed properly. Early and appropriate treatment is therefore essential to replace lost fluids and salts, maintain adequate nutrition, and prevent complications. The management of diarrhoea depends on the infant's level of dehydration and follows three treatment plans: Plan A for infants with no dehydration, Plan B for infants with some dehydration, and Plan C for infants with severe dehydration. In all cases, continued exclusive breastfeeding, appropriate fluid replacement, and caregiver education are important components of care

➤ **PLAN A: TREAT DIARRHEA AT HOME**

- Treatment of a young infant who has diarrhea with **NO DEHYDRATION**.
- Eventually, all infants with diarrhea will be treated on Plan A.
- Explain the three rules of home treatment to the mother/caregiver.
 - RULE 1: Give extra fluid (as much as the child will take)
 - RULE 2: Continue exclusive breastfeeding
 - RULE 3: Know when to return

RULE 1: GIVE EXTRA FLUID & RULE 2: CONTINUE EXCLUSIVE BREASTFEEDING

- All infants and children who have diarrhea need extra fluid and continued feeding to prevent dehydration and give nourishment.
- Additional fluids that may be given to a young infant are ORS solution and clean water.
- If an infant is exclusively breastfed, do not introduce a food-based fluid.
- If a young infant will be given ORS solution at home, show the mother/caregiver how much ORS to give the infant after each loose stool.
 - For a young infant this would be 50 – 100 ml.
 - She should first offer a breastfeed, and then give the ORS solution.
 - Remind the mother/caregiver to continue giving extra fluid until the diarrhea stops, then stop giving ORS solution. I
 - If the child vomits, wait 10 minutes before giving more fluid. Then resume giving the fluid, but more slowly.

- When you give the mother/caregiver ORS, show her how to mix the ORS solution and how to give it to her child.
- Ask the mother/caregiver to practice mixing the ORS solution herself while you observe her.

RULE 3: KNOW WHEN TO RETURN

Advise the caretaker to return immediately if the young infant has any of these signs:

- Breastfeeding poorly
- Reduced activity
- Becomes sicker
- Develops a fever
- Feels unusually cold
- Develops fast breathing
- Develops difficult breathing

➤ PLAN B: TREAT SOME DEHYDRATION WITH ORS

- Plan B is treatment of a young infant who has diarrhea with **SOME DEHYDRATION**.
- It includes an initial treatment period of **4 hours in the clinic**.
 - The mother/caregiver slowly gives a recommended amount of ORS solution by spoonful or sips.
 - A young infant who has a severe classification and SOME DEHYDRATION needs urgent referral to hospital.
 - Do not try to rehydrate the young infant before he leaves.
 - Quickly give the mother/caregiver some ORS solution.
 - Show her how to give frequent sips of it on the way to the hospital.
 - DETERMINE AMOUNT OF ORS TO GIVE DURING FIRST 4 HOURS.
 - Use the chart in Plan B to determine how much ORS to give.
 - An infant up to 4 month of age (weighing < 6 kg) needs 200 – 450 ml of ORS.
 - The weight of the infant, the degree of dehydration and the number of stools passed during rehydration will all affect the amount of ORS needed.
 - The infant will usually want to drink as much as he needs.
 - Another way to estimate the amount of ORS solution needed (in ml) is:
 - Multiply the infant's weight (in kilograms) by 75.
 - For example, an infant weighing 3.5 kg would need:
 - $\text{kg} \times 75 \text{ ml} = 260 \text{ ml}$ of ORS solution in 4 hours
 - Notice that this amount fits in the range given in the box. The box will save you this calculation.
 - Giving ORS solution should not interfere with a breastfed baby's normal feeding.
 - The mother/caregiver should pause to let the baby breastfeed whenever the baby wants to, and then resume the ORS solution
 - ❖ SHOW THE MOTHER/CAREGIVER HOW TO GIVE ORS SOLUTION.
- After 4 hours:

- Reassess and classify the young infant using the ASSESS AND CLASSIFY chart for dehydration and choose the appropriate plan to continue treatment.
 - If the signs of dehydration are gone, the infant is put on Plan A.
 - If there is still some dehydration, the infant repeats Plan B.
 - If the infant now has SEVERE DEHYDRATION, you will need to treat the child quickly in the clinic (Plan C)
- ❖ **Note:** Reassess the infant before 4 hours if the infant is not taking the ORS solution or seems to be getting worse.
- ❖ **IF THE MOTHER/CAREGIVER MUST LEAVE BEFORE COMPLETING TREATMENT:**
 Sometimes a mother/caregiver must leave the clinic while her infant is still on Plan B, that is, before the infant is rehydrated.
 In such situations, you will need to:
 - Show the mother/caregiver how to prepare ORS solution at home.
 - Have her practice this before she leaves.
 - Show her how much ORS solution to give to complete the 4-hour treatment at home.
 - Give her enough packets to complete rehydration.
 - Also give her 2 more packets as recommended in Plan A.
 - Explain the 3 Rules of Home Treatment (See Plan A):

PLAN C: TREAT SEVERE DEHYDRATION QUICKLY

Severely dehydrated young infants need to have water and salts quickly replaced.

Intravenous (IV) fluids are usually used for this purpose.

- Rehydration therapy using IV fluids or using a nasogastric (NG) tube is recommended only for infants and children who have severe dehydration.
- The treatment of the severely dehydrated young infant depends on:
 - The type of equipment available at your clinic or at a nearby clinic or hospital,
 - The training you have received,
 - Whether the child can drink.

1.3.1.5 FOLLOW-UP CARE FOR THE SICK YOUNG INFANT WITH DIARRHOEA

If the young infant previously diagnosed & treated for DIARRHEA returns for follow-up in 2 days.

ASK: Has the diarrhea stopped?

- If the diarrhea has stopped, tell the mother/caregiver to continue exclusive breastfeeding
- If the diarrhea has not stopped, reassess, classify & treat the young infant for diarrhea.



Exercise

This exercise is designed to help participants practice accurately recording assessment findings for a sick young infant on the Young Infant Recording Form and correctly classifying the infant for possible bacterial infection and diarrhoea. Using the information provided in each case scenario and the YOUNG INFANT chart booklet, participants will identify clinical signs, document assessment results, and determine the appropriate classifications based on IMNCI guidelines.

Before beginning the exercise:

- Obtain blank Young Infant Recording Forms from the facilitator.
- Refer to the YOUNG INFANT chart in the chart booklet.

For each case:

1. Label the recording form with the young infant's name.
2. Read the case carefully and record the infant's age, weight, temperature, and presenting problem.
3. Mark the visit as an "Initial Visit."
4. Record all assessment findings on the form.
5. Classify the infant for possible bacterial infection and diarrhoea.
6. Proceed to the next case after completing the classification.

Case 1: Koffah

Koffah is a 3-week-old male infant. His weight is 3.6 kg. His axillary temperature is 36.5° C. He is brought to the clinic because he is having diarrhea. During the assessment for possible bacterial infection, the mother reported that Koffah had not experienced convulsions and had no difficulty feeding. On examination, his respiratory rate was 50 breaths per minute. He had no chest indrawing, nasal flaring, or grunting, and his fontanelle was not bulging. There was no pus draining from the ears, the umbilicus appeared normal, and no skin pustules were seen.

Further assessment revealed that Koffah had been having diarrhoea for four days, with no blood in the stool. The health worker observed that his eyes were sunken, he was not moving even during examination, and the skin pinch returned very slowly, taking about three seconds.

1.4 CHECK FOR FEEDING PROBLEM OR LOW WEIGHT

Adequate feeding is essential for growth and development. Poor feeding during infancy can have lifelong effects. Growth is assessed by determining weight for age. It is important to assess a young infant's feeding and weight so that feeding can be improved if necessary.

The best way to feed a young infant is to breastfeed exclusively. Exclusive breastfeeding means that the infant takes only breast milk, and no additional food, water or other fluids. (Medicines and vitamins are exceptions.)

Exclusive breastfeeding gives a young infant the best nutrition and protection from disease possible. If mothers understand that exclusive breastfeeding gives the best chances of good growth and development, they may be more willing to breastfeed. They may be motivated to breastfeed to give their infants a good start in spite of social or personal reasons that make exclusive breastfeeding difficult or undesirable.

The assessment has two parts:

- Ask the mother questions
 - Determine if she is having difficulty feeding the infant
 - What the young infant is fed and how often
 - Determine weight for age.
- Assess if the infant has any problems with breastfeeding or is low weight for age and how the infant breastfeeds.

Ask About Feeding and Determine Weight for Age

THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT:	
THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT:	
ASK	LOOK, LISTEN, FEEL
Is there any difficulty feeding? Is the infant breastfed? If yes - How many times in 24 hours? - Is the position and attachment correct? - Does the mother empty one breast before changing breast? - Does the infant usually receive any other foods or drinks? - What do you use to feed the infant?	Determine weight for age

ASK: Is there any difficulty feeding?

Any difficulty mentioned by the mother is important. This mother may need counselling

or specific help with a difficulty.¹ If a mother says that the infant is **not able to feed**, assess breastfeeding or watch her try to feed the infant with a cup to see what she means by this. An infant who is **not able to feed** may have a serious infection or other life-threatening problem and should be referred urgently to hospital.

ASK: Is the infant breastfed? If yes, how many times in 24 hours?

The recommendation is that the young infant be breastfed as often and for as long as the infant wants, day and night. This should be 8 or more times in 24 hours.

ASK: Does the infant usually receive any other foods or drinks?

A young infant should be exclusively breastfed. Find out if the young infant is receiving **any** other foods or drinks such as other milk, juice, tea, thin porridge, dilute cereal, or even water. Ask how often he receives it and the amount. You need to know if the infant is mostly breastfed, or mostly fed on other foods.

ASK: What do you use to feed the infant?

If an infant takes other foods or drinks, find out if the mother *uses* a feeding bottle or cup. Encourage the mother to use a cup to feed the child

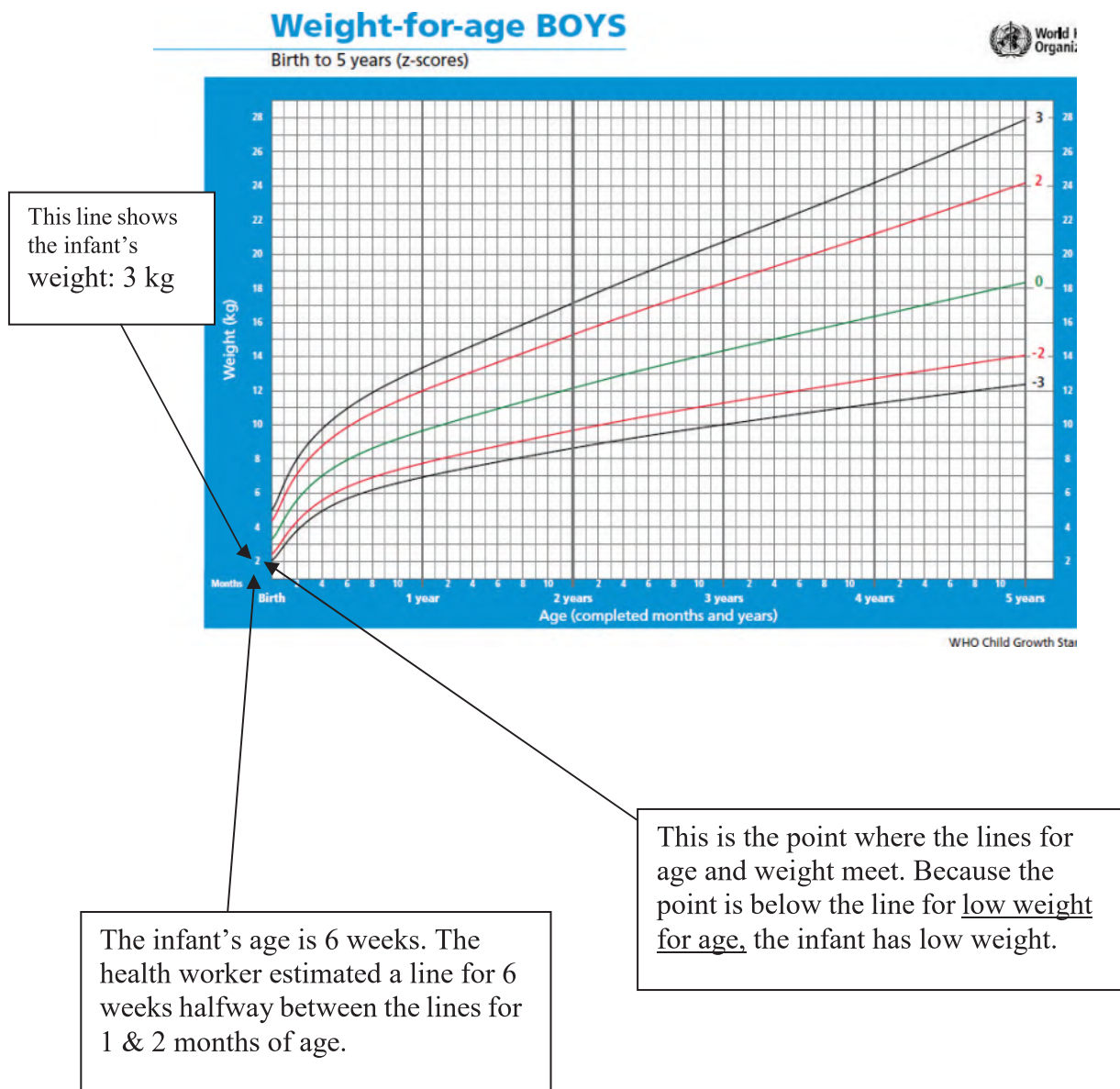
LOOK: Determine weight for age.

Use a weight for age chart to determine if the young infant is low weight for age.

Remember that the age of a young infant is usually stated in weeks, but the Weight for Age chart is labeled in months. Some young infants who are low weight for age were born with low birth weight. Some did not gain weight well after birth.

¹ Breastfeeding difficulties mentioned by a mother may include: her infant feeds too frequently, or not frequently enough; she does not have enough milk; her nipples are sore; she has flat or inverted nipples; or the infant does not want to take the breast.

EXAMPLE: A young infant is 6 weeks old and weighs 3 kg. Here is how the health worker checked if the infant was low weight for age.



1.4.1 Assess Breastfeeding

First decide whether to assess the infant's breastfeeding:

- If the infant is exclusively breastfed without difficulty and is not low weight for age, encourage the mother to continue.
 - If the infant is not breastfed at all, do not assess breastfeeding.
 - Assess the replacement feeding
 - If the infant has a serious problem requiring urgent referral to a hospital, do not assess breastfeeding.
- If the mother's answers or the infant's weight indicates a difficulty, observe a breastfeed as described below.
- Low weight for age is often due to low birth weight.
- Low birth weight infants are particularly likely to have a problem with breastfeeding.

ASSESS BREAST FEEDING: • Has the infant breast fed in the previous hour?	▪ If the infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breast feeding for 4 minutes. (If the infant was fed during the last hour, ask the mother if she can wait and tell you when the infant is willing to feed again). ▪ Is the infant able to attach? ○ No attachment at all ○ Not well attached ○ Good attachment – To check the attachment, look for: ✓ chin touching the breast ✓ mouth wide open ✓ lower lip turned outward ✓ more areola visible above than below the mouth (All of these signs should be present if the attachment is good) ▪ Is the infant suckling effectively (that is slow deep sucks, sometimes pausing)? ▪ Not suckling at all ▪ Not suckling effectively ▪ Suckling effectively ▪ Clear blocked nose if it interferes with breast feeding ▪ Look for ulcers or white patches in the mouth (thrush)
--	--

Assessing breastfeeding requires careful observation.

ASK: Has the infant breastfed in the previous hour?

- If so, ask the mother to wait and tell you when the infant is willing to feed again.
 - Complete the assessment by assessing the infant's immunization status.
 - You may also decide to begin any treatment that the infant needs, such as giving an antibiotic for LOCAL BACTERIAL INFECTION or ORS solution for SOME DEHYDRATION.
- ❖ If the infant has not fed in the previous hour, he may be willing to breastfeed.
- Ask the mother to put her infant to the breast.
 - Observe a whole breastfeed if possible, or observe for at least 4 minutes.

CHECK: If the positioning and attachment are adequate?

➤ *Teach Correct Positioning and attachment for Breastfeeding*

Show the mother how to hold her infant:

- Infant's head and body straight
- Facing her breast, with infant's nose opposite her nipple
- Infant's body close to her body
- Supporting infant's whole body, not just neck and shoulders.

To check the attachment, look for:

- Chin touching the breast
 - Mouth wide open
 - Lower lip turned outward
 - More areola visible above than below the mouth
- If all of these four signs are present, the infant has *good attachment*.

❖ **Look for signs of good attachment and effective suckling. If the attachment or suckling is not good, try again.**

- ✚ If attachment is not good, you may see:
- chin not touching breast
 - mouth not wide open, lips pushed forward
 - lower lip turned in, or
 - more areola (or equal amount) visible below infant's mouth than above it

✚ If you see any of these signs of poor attachment, the infant is **not well attached**.

✚ If a very sick infant cannot take the nipple into his mouth and keep it there to suck, he has **no attachment at all**. He is not able to breastfeed at all.

- If an infant is **not well attached**, it result in
 - Pain and damage to the nipples
 - Engorgement of the breast.

- The infant may be unsatisfied after breastfeeds and want to feed very often or for a very long time
- The infant may get too little milk and not gain weight, or the breast milk may dry up.

❖ All these problems may improve if attachment can be improved.

**A baby well attached
to his mother's breast**



**A baby poorly attached
to his mother's breast**



LOOK and LISTEN:

- **Is the infant suckling effectively? (That is, slow deep sucks, sometimes pausing).**
 - Look if he/she suckles with slow deep sucks and sometimes pauses.
 - See or hear the infant swallowing.
 - Look for signs that the infant is satisfied.
- An infant is **not suckling effectively**:
 - Look if he is taking only rapid, shallow sucks
 - Look indrawing of the cheeks.
 - You do not see or hear swallowing.
 - The infant is not satisfied at the end of the feed, and may be restless. He may cry or try to suckle again, or continue to breastfeed for a long time.
- ❖ An infant who is **not suckling at all** is not able to suck breast milk into his mouth and swallow. Therefore he is not able to breastfeed at all.
- ❖ If a blocked nose seems to interfere with breastfeeding, clear the infant's nose. Then check whether the infant can suckle more effectively.

LOOK for white patches in the mouth (thrush).

- Look inside the mouth at the tongue and inside of the cheek.
- Thrush looks like milk curds on the inside of the cheek, or a thick white coating of the tongue.
- Try to wipe the white off.
- The white patches of thrush will remain.

1.4.2 CLASSIFY FEEDING

Compare the young infant's signs to the signs listed in each row and choose the appropriate classification.

• Not able to feed or • No attachment at all or • Not suckling at all.	POSSIBLE SERIOUS BACTERIAL INFECTION OR SEVERE DISEASE	➤ Refer URGENTLY to hospital ➤ Give first dose of intramuscular antibiotics. ➤ Treat to prevent low blood sugar. ➤ Advise the mother how to keep the young infant warm on the way to the hospital.
• Not well attached to breast or • Not suckling effectively or • Less than 8 breastfeeds in 24 hours or • Receives other foods or drinks or • Low weight for age or • Thrush (ulcers or white patches in mouth)	FEEDING PROBLEM OR LOW WEIGHT	➤ Advise the mother to breastfeed as often and for as long as the infant wants, day and night at least 10 times ➤ If not well attached or not suckling effectively, teach correct positioning and attachment ➤ If breastfeeding less than 10 times in 24 hours, advise increasing frequency of feeding ➤ If receiving other foods or drinks, counsel mother about breastfeeding more, reducing other foods or drinks, and using a cup ➤ If not breastfeeding at all: ○ Provide or refer for breastfeeding counseling and initiate possible re-lactation Or ○ Advise about correctly preparing breast milk substitutes and using a cup ➤ If thrush, teach the mother to treat thrush at home. ➤ Follow-up any feeding problem or thrush in 2 days. ➤ Follow-up low weight for age in 5 days.
• Not low weight for age and no other signs of inadequate feeding.	NO FEEDING PROBLEM	➤ Praise the mother for feeding the infant well. ➤ Re-enforce exclusive breastfeeding if she is breastfeeding

NOT ABLE TO FEED - VERY SEVERE DISEASE

The young infant who is not able to feed has a life-threatening problem. This could be due to a bacterial infection or another sort of problem.² The infant requires immediate attention.

Treatment is the same as for the classification VERY SEVERE DISEASE at the top of the chart. Refer the young infant urgently to hospital. Before departure give a first dose of intramuscular antibiotics. Also treat the infant to prevent low blood sugar by giving breast milk, other milk or sugar water by nasogastric tube.

² An infant with neonatal tetanus who has stopped being able to feed and has stiffness would be referred based on this classification.

FEEDING PROBLEM OR LOW WEIGHT

This classification includes infants who are low weight for age or infants who have some sign that their feeding needs improvement. They are likely to have more than one of these signs.

Advise the mother of any young infant in this classification to breastfeed as often and for as long as the infant wants, day and night. Short breastfeeds are an important reason why an infant may not get enough breast milk. The infant should breastfeed until he is finished. Teach each mother about any specific help her infant needs, such as better positioning and attachment for breastfeeding, or treating thrush. Also advise the mother how to give home care for the young infant.

An infant in this classification needs to return to the health worker for follow-up. The health worker will check that the feeding is improving and give additional advice as needed.

NO FEEDING PROBLEM

A young infant in this classification is exclusively and frequently breastfed.

"Not low" weight for age means that the infant's weight for age is not below the line for "Low Weight for Age". It is not necessarily normal or good weight for age, but the infant is not in the high risk category that we are most concerned with.

1.5 CHECK THE YOUNG INFANT FOR HIV INFECTION

- Always check ALL young infants for HIV infection to identify children who are born from HIV positive mothers so that they could be followed up regularly and managed appropriately.
- Different tests are available to diagnose HIV infection.
- Before you learn how to assess and classify a young infant for HIV infection, it may help you to understand the different tests which detect antibodies and tests which detect the virus itself, and how to understand the results of these tests.

HIV Virological tests

- HIV virological tests such as DNA or RNA PCR detect the virus itself.
- The virological test is done any time from birth.
- It is also used as a **confirmatory test** for HIV for children below 24 months.
- A positive virological test at any age means the child is infected.
- A negative virological test in a child who has not breastfed in the last 6 weeks means the child is not infected.
- For a child who is still breastfeeding, a negative result needs to be confirmed once breastfeeding has been discontinued for more than 6 weeks because of possible infection through breastfeeding.

HIV antibody (serological) tests

- Serological (HIV antibody) tests including rapid tests detect antibodies, not the virus.
- Babies of infected mothers are born with antibodies in their blood, transferred passively through the placenta.
- During the first months of life, maternal HIV antibodies cannot be distinguished from those that the infant may have produced.
- Maternal antibodies can persist in the child until the age of 18 months. This means that a serological test in children under the age of 24 months is not a reliable way to check for infection of the child.

A POSITIVE serological test:

- In a child under the age of 24 months means that either mother's or child's HIV antibodies are present – the child has been **exposed to HIV** but is not necessarily infected himself or herself.
- In a child aged 24 months or more means that the child is **infected**.
- **A NEGATIVE serological test** means that the child is NOT infected.
 - For a child who is still breastfeeding, a negative result needs to be confirmed once breastfeeding has been discontinued for more than 6 weeks because of possible infection through breastfeeding.

NOTE

- It is very important that young infants with HIV are identified as early as 4–6 weeks after delivery using virological (PCR) test.
- These infants may look well, but can become ill and die very quickly.

1.5.1 CHECK THE YOUNG INFANT FOR HIV INFECTION

- The assessment and classification of HIV infection in young infants is based on HIV test results. The steps to check the young infant are shown on **page 4** of the Chart Booklet, as shown below.

ASK:

- Has the mother had an HIV test?
If yes:
 - Serological test POSITIVE or NEGATIVE?
- Has the infant had an HIV test?
If yes:
 - Virological test POSITIVE or NEGATIVE?
 - Serological test POSITIVE or NEGATIVE?**If no:**
 - Mother or infant HIV test not done

If the mother is HIV positive and the infant does NOT have a positive virological test, ASK:

ASK the Mother about HIV test

- Is the infant breastfeeding now?
- Was the young infant breastfeeding at the time of the test or before it?
- Is the mother on treatment and the infant on antiretroviral prophylaxis?

- Ask the Mother: “Do you have road to health card and antenatal card?”
- ✚ If yes, look at the cards to see if the mother or young infant have been tested for HIV, and, if yes, LOOK:
 - Has the mother had a serological test? If yes, is it POSITIVE or NEGATIVE?
 - Has the young infant had a virological (PCR) test? If yes, is it POSITIVE or NEGATIVE?
 - Has the young infant had a serological test? If yes, is it POSITIVE/NEGATIVE?
- ✚ If the mother does not have the cards, ASK her: “Have you or the infant been tested for HIV infection?”
 - If yes, ASK: “What was the result of your test?” “What was the result of the infant’s test?”
 - If the infant has been tested and the test is positive, try to find out what test was used (virological test – PCR test or serological test – antibody test)
- **If the mother is HIV positive, and the infant does NOT have a POSITIVE virological test, ASK about breastfeeding and ARV treatment and prophylaxis.**

ASK the mother:

- Is the infant breastfeeding now?
 - Was the infant breastfeeding at the time of test or before it?
 - Are you on ARV treatment? Is the infant on ARV prophylaxis?
- ✚ As HIV can be transmitted through breast milk, a child who has initially tested negative may still develop HIV infection. It is therefore important to know if the child was breastfeeding or had been breastfed in the six weeks before the test was done. Six weeks is considered the “window period” or time during which a patient may test negative even though they are infected.

1.5.2 CLASSIFY HIV INFECTION

Based on the results of HIV test, the young infant should be classified as follows:

- **CONFIRMED HIV INFECTION**
- **HIV EXPOSED: POSSIBLE HIV INFECTION**
- **HIV INFECTION STATUS UNKNOWN.**
- **HIV INFECTION UNLIKELY.**

SIGNS/ASSESS	CLASSIFY
Infant has a positive virological test	CONFIRMED HIV INFECTION
- Infant has a positive serological test Or - Mother is HIV positive AND infant who is breastfeeding or stopped less than 6 weeks ago has a negative virological test Or - Mother is HIV positive and young infant not yet tested	HIV EXPOSED: POSSIBLE HIV INFECTION
HIV test not done for Mother or infant	HIV INFECTION STATUS UNKNOWN
Negative HIV test for the Mother or negative virological test for the infant	HIV INFECTION UNLIKELY

➤ IDENTIFY TREATMENT FOR HIV INFECTED OR EXPOSED YOUNG INFANT

SIGNS	CLASSIFY	IDENTIFY TREATMENT
Infant has a positive virological test	CONFIRMED HIV INFECTION	- Give cotrimoxazole prophylaxis from age 4–6 weeks. - Refer or give antiretroviral treatment and HIV care. - Refer or start the mother on antiretrovirals if not on treatment. - Advise the mother on home care. - Follow-up as per national guidelines.

• Infant has a positive serological test Or • Mother is HIV positive & infant who is breastfeeding or stopped less than 6 weeks ago has a negative virological test Or • Mother is HIV positive and young infant not yet tested	HIV EXPOSED: POSSIBLE HIV INFECTION	○ Give cotrimoxazole prophylaxis from age 4–6 weeks. ○ Start or continue antiretroviral prophylaxis according to risk assessment. ○ Conduct a virological test for the infant. ○ Refer or start the mother on antiretroviral if not on treatment. ○ Advise the mother on home care. ○ Follow up regularly as per national guidelines.
• HIV test not done for mother or infant	HIV INFECTION STATUS UNKNOWN	○ Initiate HIV testing and counseling. ○ Conduct HIV test for the mother and if positive, a virological test for the infant. ○ Conduct virological test for the infant if the Mother/Caregiver is not available.
• Negative HIV test for the mother or negative virological test for the infant	HIV INFECTION UNLIKELY	○ Treat, counsel and follow up any infections. ○ Advise the mother about feeding and about her own health.

1.5.3 TREAT & COUNSEL MOTHER ABOUT HIV INFECTED/EXPOSED INFANT

- **Cotrimoxazole prophylaxis**
 - In children with confirmed or possible HIV infection, will decrease sickness and death due to pneumonia caused by pneumocystis (jirovecii previously carinii) – commonly called PCP – and other common bacterial infections and malaria.
 - Give once daily to all young infants classified as HIV EXPOSED or CONFIRMED HIV INFECTION from 4–6 weeks of age.
 - Stop cotrimoxazole prophylaxis:
 - In an infant classified as HIV EXPOSED when HIV infection has been definitively ruled out (negative virological test) AND the mother is no longer breastfeeding.

- In case of severe toxicity such as Stevens Johnson syndrome or severe pallor, infants should be referred to second level for assessment.

COTRIMOXAZOLE

(trimethoprim + sulfamethoxazole)

Weight 3.0 – 5.9 kg

Give once a day starting at 6 weeks of age.

Syrup (40/200 mg/5mL)	Pediatric tablet (strength 20/100)	Pediatric tablet (strength 40/200)
2.5 mL	1 tablet	Half tablet

- **Antiretroviral treatment:**

- ART and HIV care are needed for young infants classified as **CONFIRMED HIV INFECTION**.
- Preferred and alternative ART regimens are described in the TREAT THE HIV INFECTED CHILD section of the standard IMCI Chart Booklet.

- **Infant NVP prophylaxis**

- NVP syrup is given to all babies born to HIV infected mothers, as soon as possible after birth. The earlier the start, the more effective.
- NVP syrup protects the baby from HIV infection during the riskiest time of pregnancy, delivery, and breast feeding.
- Give NVP syrup to the baby 24-hourly for 6 weeks.
- All babies should take NVP syrup for the same duration regardless of the mother's

- **Dosing**

The dose of NVP syrup remains the same for the whole 6-week period – do not change the dose according to age or body weight, etc.

Use the standard dose (1.5ml), if birth weight is unknown (home birth / no scale).

Dosing of NVP Syrup for Infant Prophylaxis

Birth weight	NVP Syrup (10 mg/mL)
≤2500 g	1 mL daily
>2500 g	1.5 mL daily

1.6 CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS

Check immunization status just as you would for an older infant or young child. Remember that you should not give OPV 0 to an infant who is more than 14 days old. Therefore, if an infant has not received OPV 0 by the time he is 15 days old, you should wait to give OPV until he is 6 weeks old. Then give OPV 1 together with penta 1. Like other vaccines, the minimum interval between 2 doses of HBV is 4 weeks.

THEN CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS

IMMUNIZATION SCHEDULE:

AGE	VACCINES			
Birth	BCG	Polio 0		
6 weeks	Polio- 1	Pentavalent - 1	Rotavirus-1	PCV -1
10 weeks	Polio- 2	Pentavalent - 2	Rotavirus - 2	PCV- 2

ASSESS OTHER PROBLEMS

ASSESS MOTHER'S OWN HEALTH

Assess any other problems mentioned by the mother or observed by you. Refer to any guidelines on treatment of the problems. If you think the infant has a serious problem, or you do not know how to help the infant, refer the infant to a hospital.

Assess Other Problems

CHECK FOR EYE INFECTION

ASK

- Does the newborn have the eye draining pus?

LOOK

- Inspect the eyes of the newborn,
 - Are they draining pus?
 - Are they swollen?

Classify

• Eyes swollen or draining pus	GONOCOCCAL EYE INFECTION LIKELY	➤ Refer the newborn ➤ Refer the newborn to hospital in Kangaroo.
• Eyes draining pus	CONJUNCTIVITIS	➤ Apply first dose of local antibiotic (eye ointment) in eyes ➤ Teach mother to treat eye infection at home ➤ Advise mother when to return immediately ➤ Follow up in 5 days
• No swollen nor draining pus eyes	NO EYE INFECTION	➤ Treat the newborn for any other problem ➤ Advise mother on home care for the newborn ➤ Advise mother when to return immediately



Exercise

Case 1: HENRI

Henri was born 6 hours ago at home. His weight is 3.0 kg. His axillary temperature is 36.5°C. He is brought to the health facility because he did not cry immediately after birth and is having difficulty breathing. The health worker first checks the young infant for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. The father says that the young infant has not had convulsions and is not feeding well. The health worker counts 74 breaths per minute. He repeats the count. The second count is 70 breaths per minute. He finds that the young infant has severe chest indrawing. The young infant moves only when he is stimulated. The umbilicus is normal, and there are no skin pustules. There is no jaundice. The young infant does not have diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 2: SASHIE

Sashie is 1 week old. Her weight is 3.4 kg. Her axillary temperature is 37°C. Her Mother/Caregiver brought her to the clinic because she has a rash. The health worker assesses for signs of possible serious bacterial infection or very severe disease, pneumonia and local bacterial infection. Sashie's Mother/Caregiver says that there were no convulsions and that the infant is feeding well. Sashie's breathing rate is 55 per minute. She has no chest indrawing. Her umbilicus is normal. The health worker examines her entire body and finds a red rash with a few skin pustules on her buttocks. She is awake and has spontaneous movements. She has no jaundice and no diarrhoea. The mother tested for HIV during pregnancy and was negative.

Case 3: JENNA

Jenna is 1 week old. Her weight is 3 kg. Her axillary temperature is 36.4°C. Her mother has brought her because she has diarrhoea. The health worker first assesses her for signs of possible serious bacterial infection or very severe disease, pneumonia, and local bacterial infection. Her mother says that she has not had convulsions and is breastfeeding well. Her breathing rate is 50 per minute. She was sleeping in her mother's arms but awoke when her mother unwrapped her. She has slight chest indrawing. Her umbilicus is not red or draining pus. She has a rash in the area of her diaper, but there are no pustules. There are no signs of jaundice in the skin. She is crying and moving her arms and legs. When the health worker asks the mother about Jenna's diarrhea, the mother replies that it began 3 days ago. Jenna is still crying. She stopped once when her mother put her to the breast. She began crying again when she stopped breastfeeding. Her eyes look normal, not sunken. When the skin of her abdomen is pinched, it goes back immediately. Jenna's mother has HIV and has been on ART for the last 2 months. Jenna is on ARV prophylaxis but she has not been tested for HIV.

MODULE 2: CHECK FOR GENERAL DANGER SIGN

General danger signs are signs of serious illness that require immediate medical attention and often urgent referral to a Health Center or a hospital.

There are five (5) general danger signs.

Is the child able to drink or breastfeed? Does the child vomit everything? Has the child had convulsions?	See if the child is lethargic or unconscious Check if the child is convulsing now
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If the child is convulsing, clear his/her airways, and give him/her diazepam. check random blood glucose if low give dextrose containing fluid. Then immediately after, assess, classify and give necessary treatment before transferring him/her urgently.

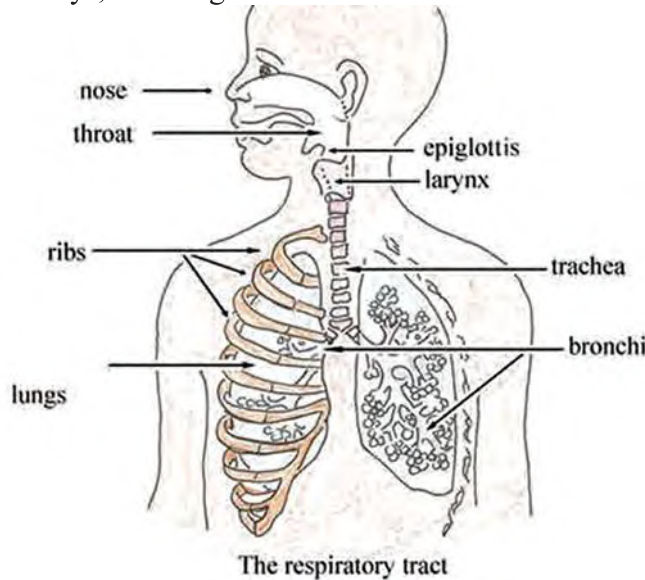
When a Mother/Caregiver comes to a clinic, take the child's biodata, ask whether it is an initial visit or a follow up and ask what brought them to the clinic or health center. Next, you should assess for general danger signs. If any danger sign is present, the child is classified as red and requires prompt referral to a hospital.

- Ask if the child is able to drink or breastfeed
Ask the Mother/Caregiver to breastfeed or offer a cup of water under direct observation by the health worker, if the child cannot suck or drink water then this danger sign is present.
- Ask if the child vomits everything
Ask the Mother/Caregiver to offer breast or water and see if the child vomits right after. If the child vomits, then this danger sign is present.
- Ask about convulsions
Ask the mom if the child jerked at home or observe for seizure or jerking while in the clinic or health center.
- See if the child is lethargic or unconscious
Health care provider will check if the child cannot be woken or is responding less than usual to what is going on around them. See if the child seems more floppy, drowsy or less alert than usual

A child with any general danger sign needs URGENT action; complete rapidly the assessment.

MODULE 3: COUGH AND DIFFICULT BREATHING

Respiratory infections can affect any part of the respiratory tract, including the nose, throat, airways, and lungs.



A child with cough or difficult breathing may have pneumonia or another respiratory infection. Pneumonia is an infection of the lungs caused by bacteria or viruses. In many low-resource settings, bacterial pneumonia is common and can lead to severe illness, hypoxia (low oxygen), sepsis, or death if not treated promptly.

Most children presenting with cough or difficult breathing have mild respiratory infections, such as the common cold or bronchiolitis. These illnesses are usually not severe and can often be managed at home without antibiotics.

The health worker's task is to identify children with pneumonia who need treatment. Most cases of pneumonia can be recognized using two key signs:

- **Fast breathing**
- **Chest indrawing**

When pneumonia develops, the lungs become less able to exchange oxygen, causing the child to breathe faster. As the disease becomes more severe, **chest indrawing** may occur, indicating **severe pneumonia**.

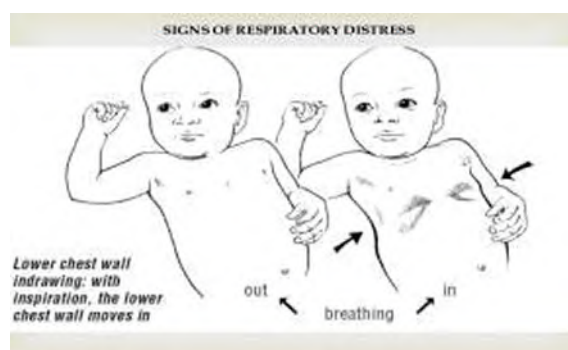


Figure 2: Chest indrawing

3.1 ASSESS AND CLASSIFY COUGH OR DIFFICULT BREATHING

3.1.2 ASSESS COUGH OR DIFFICULT BREATHING

A child with cough or difficult breathing is assessed for:

- ☐ How long the child has had cough or difficult breathing
- ☐ Fast breathing
- ☐ Chest indrawing
- ☐ Stridor in a calm child (Noisy breath sound heard when the child takes in breath)
- ☐ Wheezing in a calm child (Noisy breathing that sounds like Whistle or music)

Here is the box in the "Assess" column that lists the steps for assessing a child for cough or difficult breathing:

Does the child have cough or difficulty breathing?

Does the child have cough or difficulty breathing?			
If Yes, ASK: -For how long?	Look, Listen, Feel - Count the breathing in 1 minute.	If the child is: 2 months up to 12 months	Fast breathing is: 50 breaths per minute or more
	 - Look for chest indrawing CHILD MUST BE CALM - Listen for stridor - Listen for wheeze	12 months up to 5 years	40 breaths per minute or more

For ALL sick children, ask about cough or difficult breathing.

ASK: Does the child have cough or difficult breathing?

Prompt: Difficult breathing refers to any unusual breathing pattern. Caregivers may describe it as fast, noisy, or interrupted breathing.

- If **NO**, and the child has no cough or difficult breathing, proceed to assess the next main symptom (diarrhoea).
- If **YES**, continue the assessment.

ASK: For how long?

A cough or difficult breathing lasting more than 2 weeks is considered chronic and may suggest conditions such as tuberculosis, asthma, whooping cough, or other chronic respiratory diseases.

COUNT THE BREATHS IN ONE MINUTE

Count the child's breaths for **one full minute** to determine if breathing is fast.

- Ensure the child is **calm and quiet**. If the child is crying, upset, or frightened, wait until the child settles before counting.
- Tell the caregiver that you are going to count the child's breathing and ask them to help keep the child calm.
- If the child is sleeping, **do not wake the child**.
- Use a watch with a second hand or timer.
- Observe the movement of the chest or abdomen and count each breath for **60 seconds**.
- If chest movement is difficult to see, ask the caregiver to lift the child's clothing.
- If the count is uncertain, repeat the assessment.

The cut-off for fast breathing varies by age because younger children normally breathe faster than older children.

- 2 months to <12 months: 50 breaths per minute or more
- 12 months to 5 years: 40 breaths per minute or more

Cut-off rate for fast breathing

If the child is:	The child has fast breathing if you count:
2 months up to 12 months:	50 breaths per minute or more
12 months up to 5 years:	40 breaths per minute or more.

Note: The child who is exactly 12 months old has fast breathing if you count 40 breaths per minute or more.

Before you look for the next two signs -- chest indrawing and stridor -- watch the child to determine when the child is breathing **IN** and when the child is breathing **OUT**.

LOOK FOR CHEST INDRAWING

Observe the child's breathing and identify when the child breathes in.

- Ask the caregiver to expose the child's chest if not already done.

Look at the **lower chest wall** while the child breathes in. **Chest indrawing is present** if the lower chest wall moves inward when the child breathes in. In normal breathing, the chest and abdomen move outward during inspiration.

Chest indrawing must be clearly visible and present all the time when the child is calm. If the child is crying or feeding, reassess when the child is calm.

Position the child flat if chest movement is difficult to observe. Do not confuse chest indrawing with intercostal indrawing (retraction between the ribs). Only lower chest wall indrawing is considered chest indrawing.



The child breathing in with chest in-drawing.

LOOK and LISTEN for stridor.

Stridor is a harsh noise made when the child breathes **IN**. Stridor happens when there is a swelling of the larynx, trachea or epiglottis. This swelling interferes with air entering the lungs. It can be life-threatening when the swelling causes the child's airway to be blocked. **A child who has stridor when calm has a dangerous condition.**

To look and listen for stridor, look to see when the child breathes IN. Then listen for stridor. Put your ear near the child's mouth because stridor can be difficult to hear.

Sometimes you will hear a wet noise if the nose is blocked. Clear the nose, and listen again. A child who is not very ill may have stridor only when he is crying or upset.

Be sure to look and listen for stridor when the child is calm.

You may hear a wheezing noise when the child breathes **OUT**. This is not stridor.

LOOK and LISTEN for Wheeze.

Wheezing is a soft, musical or whistling sound heard when a child breathes out, caused by narrowed airways or muscle contraction around them. It makes exhalation longer and more effortful, sometimes with little air movement and no sound. Caregivers should look for effort during breathing out and listen near the child's mouth or with a stethoscope. Main causes include asthma and respiratory infections like bronchiolitis. Recurrent wheeze (more than one episode in 12 months) suggests asthma. If wheezing occurs with fast breathing or chest indrawing, give up to three trials of a rapid-acting bronchodilator, then reassess. Auscultation may also reveal

pneumonia signs such as crackles, decreased breath sounds, or bronchial breath sounds, with wheezing more common in viral and atypical pneumonias.

3.1.2 CLASSIFY COUGH OR DIFFICULT BREATHING

Signs of illness and their classifications are listed on the *ASSESS & CLASSIFY* chart in classification tables. The chart is in colour, each row is coloured either red, yellow, or green. The colour of the rows tells you quickly if the child has a serious illness or not. You can also quickly choose the appropriate treatment

- ② A classification in a *red* row needs urgent attention and referral or admission for inpatient care. This is a severe classification.
- ② A classification in a *yellow* row means that the child needs an appropriate antibiotic, an oral antimalarial or other treatment. The treatment includes teaching the Mother/Caregiver/caretaker how to give the oral drugs or to treat local infections at home. The health worker advises him/her about caring for the child at home and when to return.
- ② A classification in a *green* row means the child does not need specific medical treatment such as antibiotics. The health worker teaches the Mother/Caregiver/caretaker how to care for the child at home. For example, you might advise him/her on feeding the sick child or giving fluid and signs to watch out for and bring the child back to the hospital.

Depending on the combination of the child's signs and symptoms, the child is classified in either the pink, yellow, or green row. That is, the child is classified only once in each classification table. There are three possible classifications for a child with cough or difficulty breathing. They are:

- ② SEVERE PNEUMONIA OR VERY SEVERE DISEASE or
- ② PNEUMONIA or
- ② No Pneumonia: COUGH OR COMMON COLD

Here is the classification table for cough or difficult breathing.

SIGNS	CLASSIFY AS	TREATMENT
- Any general danger signs or - Stridor in calm child or SPO2 <95% or - Chest indrawing - Wheezing - Bluish coloration of the lips and nails	Severe Pneumonia or very Severe Disease	- Give first dose of an appropriate antibiotic. - If wheezing, give an inhaled bronchodilator if available and the service provider is skilled, - Commence oxygen therapy if available - Refer URGENTLY to hospital.
Fast breathing.		Give oral antibiotic for 5 days

	PNEUMONIA	• If wheezing gives an inhaled bronchodilator for five days* • Encourage adequate fluid intake and age appropriate feeding. • If coughing for more than 3 weeks or if having recurrent wheezing, refer for assessment for TB or asthma • Advise Mother/Caregiver/caretaker when to return immediately. • Follow-up in 2 days.
No signs of pneumonia or very severe disease.	COUGH OR COMMON COLD	• If wheezing gives an inhaled bronchodilator for five days* • Encourage adequate fluid intake and age appropriate feeding • Give multivitamin, zinc, and Vitamin C • Give Paracetamol if there is fever. • Encourage age to date vaccination. • If coughing for more than 3 weeks or if having recurrent wheezing, refer for assessment for TB or asthma • Advise Mother/Caregiver/caretaker when to return immediately • Follow-up in 5 days if not improving

SEVERE PNEUMONIA OR VERY SEVERE DISEASE

A child with cough or difficult breathing and with any of the following signs -- any general danger sign, chest indrawing or stridor in a calm child -- is classified as having SEVERE PNEUMONIA OR VERY SEVERE DISEASE.

A child with chest indrawing usually has severe pneumonia or the child may have another serious acute lower respiratory infection such as bronchiolitis, pertussis, or a wheezing problem.

A child with chest indrawing has a higher risk of death from pneumonia than the child who has fast breathing and no chest indrawing. Chest indrawing may be the child's only sign of severe pneumonia.

A child classified as having SEVERE PNEUMONIA OR VERY SEVERE DISEASE is seriously ill. He needs urgent referral to a hospital for treatments such as oxygen, a bronchodilator or injectable antibiotics. Before the child leaves your clinic, give the first dose of an appropriate antibiotic. The antibiotic helps prevent severe pneumonia from becoming worse. It also helps treat other serious bacterial infections such as sepsis or meningitis. If wheezing, give an inhaled bronchodilator if available and the service provider is skilled. Begin oxygen therapy when oxygen saturation is less than 95% if available pending departure to the hospital.

PNEUMONIA

A child with cough or difficult breathing who has fast breathing and no general danger signs, no chest indrawing and no stridor when calm is classified as having PNEUMONIA.

COUGH OR COMMON COLD (NO PNEUMONIA)

Child with cough or difficult breathing who has no general danger signs, no chest indrawing, no stridor when calm and no fast breathing is classified as having COUGH OR COMMON COLD.

A child with a cold normally improves in one to two weeks. However, a child who has a chronic cough (a cough lasting more than 2 weeks) may have tuberculosis, asthma, whooping cough or another problem. Refer the child with a chronic cough to hospital for further assessment.

3.2 IDENTIFY TREATMENT — COUGH / DIFFICULT BREATHING

Identifying the correct treatment for a child with cough or difficult breathing is a key step in case management. After assessing and classifying the illness, the health worker determines the most appropriate treatment according to the child's classification—whether the child requires urgent referral, antibiotic therapy, or only home care. This step ensures that each child receives timely and appropriate care based on the severity of the illness, age, and presence of danger signs.

Correctly identifying treatment helps prevent complications, promotes recovery, and supports rational use of medicines, especially antibiotics.

For each classification, state what the child *needs now* (urgent referral, first-line outpatient treatment, or home care).

VERY SEVERE DISEASE / SEVERE PNEUMONIA

Signs: Any general danger sign OR stridor or Wheeze when calm OR severe chest indrawing.

What the child needs:

Urgent hospital care (oxygen, parenteral antibiotics, close monitoring).

Give pre-referral treatment immediately if possible: first dose of appropriate injectable antibiotic (e.g., **ampicillin ± gentamicin**) and start oxygen if available for hypoxaemia (low oxygen in the blood). Keep the child warm during transfer.

PNEUMONIA

Signs: Fast breathing for age; no chest indrawing, no stridor when calm, no general danger signs.

What the child needs:

- **Outpatient oral antibiotic** — Oral Amoxicillin is the first-line treatment.
- Give the first dose in the clinic and teach/observe the caregiver giving the medicine. Advise to complete full course and return for follow-up in 2 days

NO PNEUMONIA (COUGH OR COLD)

Signs: Cough but **no** fast breathing, no chest indrawing, no danger signs.

What the child needs:

No antibiotic. Provide **supportive/home care** only: fluids, continued breastfeeding, nasal clearance, paracetamol for fever as needed, avoid smoke exposure. Advise return if symptoms worsen or danger signs appear.

WHEEZE / SUSPECTED BRONCHIOLITIS OR ASTHMA (if wheeze present)

Signs: Audible wheeze or history of recurrent wheeze.

Identify treatment (what the child needs):

If wheeze and no danger signs: trial of inhaled **bronchodilator (if available)** may be given.

Observe response — if good response, continue bronchodilator plan; if poor/no response or signs of pneumonia, treat as pneumonia/severe disease as indicated.

3.3 TREATMENT — COUGH / DIFFICULTY BREATHING

Treatment for a child with cough or difficulty breathing is guided by the classification made after assessment. The goal is to provide prompt and appropriate care according to the severity of the illness—ranging from urgent referral and injectable antibiotics for severe pneumonia to oral treatment or supportive home care for mild cases. The health worker should give the first dose of medicine when indicated, teach the caregiver how to continue treatment at home, and advice on when to return for review. Proper treatment ensures recovery, prevents progression to severe disease, and promotes rational use of antibiotics

VERY SEVERE DISEASE / SEVERE PNEUMONIA (URGENT ACTIONS)

Signs: any general danger sign OR stridor OR wheeze when calm OR severe chest indrawing.

Treatment required now:

Urgent referral to higher-level facility for inpatient care (oxygen, parenteral antibiotics, close monitoring).

Give pre-referral treatment immediately if possible: first dose of appropriate injectable antibiotic (**ampicillin 50 mg/kg IV/IM** plus **gentamicin 7.5mg/kg/day**). If hypoxaemic (low oxygen in the blood) ($\text{SpO}_2 < 95\%$), **start oxygen** during stabilization/transfer. Keep child warm and safe during transfer.

PNEUMONIA

Signs: fast breathing for age, no chest indrawing, no danger signs.

Treatment required now:

Oral amoxicillin — first-line outpatient treatment.

Dose principle: At least **50 mg/kg per day**, given twice daily.

Usual course: 5 days

Erythromycin- second line outpatient treatment.

Dose principle: 40-50mg/kg.day, given twice daily

Usual course: 5 days

Give the first dose in clinic and observe/teach the caregiver to give the medicine at home.

Advise completion of full course.

Advise return in 48 hours (2 days) for reassessment (earlier if danger signs).

NO PNEUMONIA (Cough or Common Cold)

Signs: cough but no fast breathing, no chest indrawing, no danger signs.

Treatment required now:

No antibiotics. Provide **supportive care** only:

Continue breastfeeding and feeding.

Give plenty of fluids or ORS if needed.

Clear the nose when blocked.

Paracetamol 10-15mg/kg/dose for fever as needed

Give Vitamin C Dose Average 1.5 mg / Kg / dose daily

Give Zinc 10mg daily infants and 20mg daily older children.

Give chlorpheniramine (do not give to children under 12 months)

Advice smoke avoidance and hygiene measures.

Advice return if cough worsens, breathing becomes fast/difficult, or child develops danger signs; routine review if cough persists beyond 5–7 days.

3.4 COUNSELING THE MOTHER/CAREGIVER: COUGH OR DIFFICULT BREATHING

Counseling the Mother/Caregiver is a vital part of managing a child with cough or difficulty breathing. It helps ensure that treatment given at the facility is continued correctly at home and that danger signs are recognized early. The health worker should use simple, clear language to explain the child's illness, demonstrate how to give medicines such as antibiotics or supportive care, and emphasize the importance of continued feeding, fluids, and warmth. Mother/Caregiver should be encouraged to return immediately if the child's breathing becomes worse, develops chest indrawing, or shows any danger sign. Effective counseling improves treatment adherence, promotes early care-seeking, and supports prevention of future respiratory infections. The health worker should follow these steps:

1. Assess the Mother/Caregiver's Understanding and Concerns

- Greet the caregiver and establish rapport.
- Ensure the environment is comfortable and conducive.
- Ask what brought her and the child today.
- Ask what she thinks is causing the cough or breathing problem.

- Listen carefully and acknowledge her concerns.

2. Explain the Child's Condition Clearly

- Use simple, non-medical language.
- Tell the Mother/Caregiver what the child's illness is and how serious it is.
 - Example: "Your child has a cough due to a chest infection (pneumonia). This can make it hard for him/her to breathe."
- If not severe: "Your child's cough is not serious now, but we must treat early and watch for danger signs."

3. Describe the Home Care Steps

(Tailor these based on classification: pneumonia, no pneumonia, etc.)

If Pneumonia (Fast Breathing):

- Give the first dose of antibiotic as prescribed (e.g. Amoxicillin).
- Explain how and when to give the remaining doses.
- Continue feeding and breastfeeding.
- Keep the child warm and comfortable.
- Clear the nose if blocked, to help breathing.

If No Pneumonia (Cough/Cold):

- Give plenty of fluids and continue breastfeeding.
- Clear the nose gently with a soft cloth and clean water.
- Keep the child away from smoke or dust (e.g., cooking fire).
- Use paracetamol only if the child has fever.
- Do not give cough syrups or other medicines unless prescribed.

4. Teach the Mother/Caregiver to Recognize Danger Signs

Tell her to **bring the child back immediately** if she notices **any** of the following:

- Fast breathing
- Chest indrawing
- Stridor (noisy breathing) when the child is calm
- Inability to drink or breastfeed
- Vomits everything
- Becomes sicker, lethargic, or unconscious
- Convulsions

Encourage her to **return for follow-up** even if the child seems better.

5. Demonstrate and Check Understanding

- Show her how to measure and give the correct dose of medicine.
- Ask her to repeat the instructions in her own words.
- Correct misunderstandings.

6. Emphasize Prevention

- Keep the child's environment **smoke-free** (no burning charcoal, no smoking near child).
- Ensure child receives **all routine immunizations** (especially measles, pertussis, Hib, and pneumococcal).
- Practice **good nutrition** and **exclusive breastfeeding** for the first 6 months.
- Reduce overcrowding and keep the home well ventilated.

7. Schedule Follow-Up

- For pneumonia: **Return in 2 days** for reassessment or earlier if worsening.
- For cough/cold: **Return in 5 days** if not improving, or earlier if danger signs appear.

8. Record and Thank the Caregiver

- Record findings and treatment on the IMNCI form.
- Thank and encourage the caregiver for bringing the child early and caring attentively.

3.5 FOLLOW-UP CARE FOR COUGH OR DIFFICULTY BREATHING

Follow-up care for a child with cough or difficulty breathing is an essential component of case management. It ensures that the child's condition is improving with treatment, identifies those who need further assessment or referral, and reinforces correct home care practices. At each follow-up visit, the health worker should reassess the child's breathing rate, look for chest indrawing or danger signs, check adherence to prescribed medicines, and review feeding and fluid intake. Caregivers should also be reminded of when to return immediately if the child's condition worsens. Proper follow-up supports early recovery, prevents complications, and strengthens caregiver confidence in home management.

SEVERE PNEUMONIA or VERY SEVERE DISEASE

Patient should be follow-up according to hospital advice

Check clinical improvement as guided by the hospital or higher facility

Continue home care and prescribed medicines as directed.

- Reinforce prevention: breastfeeding, immunization, smoke avoidance.
- Schedule return if any danger signs recur.

If improving:

- Reassure Mother/Caregiver and continue home care (fluids, breastfeeding, clearing nose, avoid smoke).

PNEUMONIA

The Patient should return after 2 days

- Ask: Is the child better, same, or worse?
- Count the respiratory rate.
- Look for chest indrawing or stridor when calm.
- Check for general danger signs.

If improving:

- Continue giving Amoxicillin until all doses are finished.
- Continue feeding and fluids.

If not improving:

- Check for treatment failure: wrong dose, poor adherence, or new infection.
- If child still has fast breathing or chest indrawing, refer for further evaluation or change antibiotic.

If worse (danger signs):

- Give first dose of second-line antibiotic (e.g., injectable gentamicin or ampicillin) and refer urgently to hospital.

NO PNEUMONIA (Cough or Cold)

The patient should return after 5 days, or earlier if not improving or worse

- Ask: Is the cough better, same, or worse?
- Check for new signs: fast breathing, chest indrawing, or fever.

If improving:

- Reassure Mother/Caregiver and continue home care (fluids, breastfeeding, clearing nose, avoid smoke).

If not improving or worse:

- Reassess fully for pneumonia or other illness (malaria, ear infection, etc.).
- If pneumonia now present, classify and treat accordingly.

If still only cough/cold:

- Continue supportive care and observe.



Exercise

Read this case study. Also study how the health worker classified this child's illness.

Peter is 18 months old. He weighs 11.5 kg. His temperature is 37.5°C. His Mother/Caregiver/caretaker brought him to the clinic because he has a cough. She says he is having trouble breathing. This is his initial visit for this illness.

The health worker checked Peter for general danger signs. Peter is able to drink. He has not been vomiting. He has not had convulsions. He is not lethargic or unconscious.

"How long has Peter had this cough?" asked the health worker. His Mother/Caregiver/caretaker said he had been coughing for 6 or 7 days. Peter sat quietly on his Mother/Caregiver's lap. The health worker counted the number of breaths the child took in a minute. He counted 41 breaths per minute. He thought, "Since Peter is over 12 months of age, the cut-off for determining fast breathing is 40. He has fast breathing."

The health worker did not see any chest indrawing. He did not hear stridor.

1. Here is how the health worker recorded Peter's case information and signs of illness:
2. To classify Peter's illness, the health worker looked at the classification table for cough or difficult breathing.
 - a. First, he checked to see if Peter had any of the signs in the pink row. He thought, "Does Peter have any general danger signs? No, he does not. Does Peter have any of the other signs in this row? No, he does not." Peter does not have any of the signs for a severe classification.
 - b. Next, the health worker looked at the yellow row. He thought, "Does Peter have signs in the yellow row? He has fast breathing

MODULE 4: DIARRHEA

4.1 ASSESS AND CLASSIFY DIARRHEA

Diarrhea occurs when stools contain more water than normal. Diarrhea is also called loose or watery stools. It is common in children, especially those between 6 months and 2 years of age. It is more common in babies under 6 months who are drinking cow's milk or infant feeding formulas. Frequent passing of normal stools is not diarrhea. The number of stools normally passed in a day varies with the diet and age of the child. In many regions diarrhea is defined as three or more loose or watery stools in a 24-hour period.

Mothers/Caregivers usually know when their children have diarrhea. They may say the child's stools are loose or watery. Mothers/Caregivers may use a local word for diarrhea.

Babies who are exclusively breastfed often have stools that are soft; this is not diarrhea. The Mother/Caregiver of a breastfed baby can recognize diarrhea because the consistency or frequency of the stools is different than normal.

What are the Types of Diarrhea?

The types of diarrhea are based on the duration of onset. They are: Acute, Persistent and chronic diarrhea. Acute diarrhea lasts for less than 14 days, persistent diarrhea lasts for 2-4 weeks while chronic diarrhea lasts for more than four weeks.

Types of Diarrhea based on the Stool Character or Consistency:

Most diarrhea which causes dehydration are loose or watery.

1. Loose or watery diarrhea: Cholera is one example of loose or watery diarrhea. Only a small proportion of all loose or watery diarrhea are due to cholera.
2. Diarrhea with blood in the stool, with or without mucus, is called dysentery. The most common cause of dysentery is Shigella bacteria. Amoebic dysentery is not common in young children. A child may have both watery diarrhea and dysentery.

4.1.1 ASSESS DIARRHEA

A child with diarrhea is assessed for:

- How long has the child had diarrhea?
- Blood in the stool to determine if the child has dysentery, and for
- Signs of dehydration.

Look at the following steps for assessing a child with diarrhea:

Does the Child have diarrhea?	
IF YES, ASK: • For how long? • Is there blood in the stool?	LOOK AND FEEL: • Look at the child's general condition. Is the child: - Lethargic or unconscious? - Restless and/or Irritable? • Look for sunken eyes. • Offer the child fluid. Is the child : - Not able to drink or drinking poorly? - Drinking eagerly, thirsty? • Pinch the skin of the abdomen. Does it go back : Very slowly (longer than 2 seconds)? Slowly?

Ask about diarrhea in ALL children:

ASK: Does the child have diarrhea?

Use words for diarrhea the Mother/Caregiver understands.

If the Mother/Caregiver answers NO, ask about the next main symptom, fever. You do not need to assess the child further for signs related to diarrhea.

If the Mother/Caregiver answers YES, or if the Mother/Caregiver said earlier that diarrhea was the reason for coming to the clinic, record his/her answer. Then assess the child for signs of dehydration, persistent diarrhea and dysentery.

ASK: For how long?

Diarrhea which lasts 14 days or more is persistent diarrhea.

Give the Mother/Caregiver time to answer the question. He/She may need time to Recall the exact number of days.

ASK: Is there blood in the stool?

Ask the Mother/Caregiver if he/she has seen blood in the stools at any time during this episode of diarrhea.

Next, check for signs of dehydration.

When a child becomes dehydrated, he/she is at first restless and irritable. If dehydration continues, the child becomes lethargic or unconscious.

As the child's body loses fluids, the eyes may look sunken. When pinched, the skin will go back slowly or very slowly.

LOOK and FEEL for the following signs:

LOOK at the child's general condition. Is the child lethargic or unconscious? restless and irritable?

When you checked for general danger signs, you checked to see if the child was lethargic or unconscious. If the child is lethargic or unconscious, he/she has a general danger sign. Remember to use this general danger sign when you classify the child's diarrhea.

A child has the sign, "restless and irritable" if the child is restless and irritable all the time or every time he/she is touched and handled. If an infant or child is calm when breastfeeding but becomes restless and irritable when he/she stops breastfeeding, he/she does not have the sign "restless and irritable". Many children are upset just because they are in the clinic. Usually these children can be consoled and calmed. They do not have the sign "restless and irritable".

LOOK for sunken eyes.

The eyes of a child who is dehydrated may look sunken. Decide if you think the eyes are sunken. Then ask the Mother/Caregiver if he/she thinks the child's eyes look unusual. His/her opinion helps you confirm that the child's eyes are sunken.

Note: In a severely malnourished child who is visibly wasted (that is, who has marasmus), the eyes may always look sunken, even if the child is not dehydrated. Even though sunken eyes are less reliable in a visibly wasted child, still use the sign to classify the child's dehydration.

OFFER the child fluid. Is the child not able to drink or drinking poorly? Drinking eagerly, thirsty?

Ask the Mother/Caregiver to offer the child some water in a cup or spoon. Watch the child drink. A child is not able to drink if he/she is not able to suck or swallow when offered a drink. A child may not be able to drink because he/she is lethargic or unconscious.

A child is drinking poorly if the child is weak and cannot drink without help. He/she may be able to swallow only if fluid is put in his mouth.

A child has the sign drinking eagerly, thirsty if it is clear that the child wants to drink.

Look to see if the child reaches out for the cup or spoon when you offer him/her water. When the water is taken away, see if the child is unhappy because he/she wants to drink more. If the child takes a drink only with encouragement and does not want to drink more, he/she does not have the sign "drinking eagerly, thirsty."

PINCH the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? Slowly?

Ask the Mother/Caregiver/caretaker to place the child on the examining table so that the child is

flat on his/her back with his/her arms at his/her sides (not over the head) and his/her legs straight. Or, ask the Mother/Caregiver/caretaker to hold the child so he/she is lying flat in his/her lap.

Locate the area on the child's abdomen halfway between the umbilicus and the side of the abdomen. To do the skin pinch, use your thumb and first finger. Do not use your fingertips because this will cause pain. Place your hand so that when you pinch the skin, the fold of skin will be in a line up and down the child's body and not across the child's body. Firmly pick up all of the layers of skin and the tissue under them. Pinch the skin for one second and then release it. When you release the skin, look to see if the skin pinch goes back

- very slowly (longer than 2 seconds)
- slowly
- immediately

If the skin stays up for even a brief time after you release it, decide that the skin pinch goes back slowly.



Note: In a child with marasmus (severe malnutrition), the skin may go back slowly even if the child is not dehydrated. In an overweight child, or a child with oedema, the skin may go back immediately even if the child is dehydrated. Even though skin pinch is less reliable in these children, still use it to classify the child's dehydration.

4.1.2 CLASSIFY

- * All children with diarrhea are classified for dehydration.
- * If the child has had diarrhea for 14 days or more, classify the child for persistent diarrhea.
- * If the child has blood in the stool, classify the child for dysentery.

Classify Dehydration

There are three possible classifications of dehydration in a child with diarrhea:

- SEVERE DEHYDRATION
- SOME DEHYDRATION
- NO DEHYDRATION

Assess	Classify	Treatment
Two of the following signs: • Lethargic or unconscious. • Sunken eyes. • Not able to drink or drinking poorly. • Skin pinch goes back very slowly.	SEVERE DEHYDRATION	If child has no other severe classification: - Give fluid for severe dehydration (plan C). If child also has another severe classification or if reclassify as severe dehydration after 2 hours of iv fluid: - Refer URGENTLY to hospital with mother giving frequently sips of ORS on the way. Advise the mother to continue breast feeding. If a child is 2 years or older and there is an outbreak of cholera in your area, give antibiotics for cholera. Give zinc supplement for 10-14 days after correction of dehydration.
Two of the following signs: • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	SOME DEHYDRATION	Encourage breastfeeding if still breastfeeding Give fluid and food for some dehydration (Plan B). Give zinc supplement for 10-14 days. If the child also has a severe classification: - Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother/caregiver to continue breastfeeding. Advise mother/caregiver when to return immediately. Follow – up in 2 days if not improving.
Not enough signs to classify as some or severe dehydration.	NO DEHYDRATION	Encourage breastfeeding if still breastfeeding Give fluid and food to treat diarrhea at home (Plan A). Advise mother/caregiver to return immediately. Follow-up in 5 days if not improving Give zinc supplement for 10-14 days.

To classify the child's dehydration, begin with the red (or top) row.

-- If two or more of the signs in the red row are present, classify the child as having SEVERE DEHYDRATION.

-- If two or more of the signs are not present, look at the yellow (or middle) row. If two or more of the signs are present, classify the child as having SOME DEHYDRATION.

-- If two or more of the signs from the yellow row are not present, classify the child as having NO DEHYDRATION.

Classify Persistent Diarrhea

After you classify the child's dehydration, classify the child for persistent diarrhea if the child has had diarrhea for 14 days or more. There are two classifications for persistent diarrhea.

- SEVERE PERSISTENT DIARRHEA
- PERSISTENT DIARRHEA

Assess	Classify	Treatment
•Dehydration present	SEVERE PERSISTENT DIARRHEA	Give Vitamin A and multivitamin Give zinc sulphate Treat dehydration before referral unless the child has another severe classification. Refer to hospital
•No dehydration	PERSISTENT DIARRHEA	Advise the mother on breastfeeding and feeding a child who has PERSISTENT DIARRHEA Give Vitamin A and multivitamin Give zinc sulphate Follow – up in 5 days.

SEVERE PERSISTENT DIARRHEA

If a child has had diarrhea for 14 days or more and also has some or severe dehydration, classify the child's illness as SEVERE PERSISTENT DIARRHEA.

Treatment

Children with diarrhea lasting 14 days or more who are also dehydrated need referral to hospital. These children need special attention to help prevent loss of fluid. They may also need a change in diet. They may need other laboratory investigation.

Treat the child's dehydration before referral unless the child has another severe classification. Treatment of dehydration in children with severe disease can be difficult. These children should be treated in a hospital.

PERSISTENT DIARRHEA

A child who has had diarrhea for 14 days or more and who has no signs of dehydration is classified as having PERSISTENT DIARRHOEA.

Treatment

Special feeding is the most important treatment for persistent diarrhea. Feeding recommendations for persistent diarrhea are explained on the Food Box on the chart COUNSEL THE MOTHER/CAREGIVER, and ENA key messages.

CLASSIFY DYSENTERY

There is only one classification for dysentery:

➤ DYSENTERY

• Blood in the stool.	Dysentery	Treat for 5 days with an oral antibiotic recommended for shigella. Give zinc sulphate Explain to mother when to return Follow- up in 2 days.
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DYSENTERY

Classify a child with diarrhea and blood in the stool as having DYSENTERY.

Treatment

Treat the child's dehydration. Also give an antibiotic recommended for Shigella in your area. You can assume that Shigella caused the dysentery because:

- Shigella cause about 60% of dysentery cases seen in clinics.
 - Shigella cause nearly all cases of life-threatening dysentery.
- Finding the actual cause of the dysentery requires a stool culture. It can take at least 2 days to obtain the laboratory test results.

4.2 IDENTIFY TREATMENT FOR DIARRHEA

After classifying the child's condition based on the type and severity of dehydration, the health worker determines the appropriate plan of treatment—whether the child requires rehydration in the facility, treatment at home, or urgent referral. This process ensures that each child receives the right fluids, continued feeding, and any additional therapy such as zinc supplementation. Correctly identifying treatment helps to prevent dehydration, reduce complications, and promote early recovery through timely and effective management.

SEVERE DEHYDRATION

Plan C – IV Fluids Immediately (Refer if unable to start IV).

SOME DEHYDRATION

Plan B – Oral Rehydration Therapy at the facility.

NO DEHYDRATION

Plan A – Home Treatment with ORS, fluids, feeding, and zinc.

PERSISTENT DIARRHEA (≥14 days)

Treat dehydration, give zinc, improve feeding, and refer if no improvement.

DYSENTERY (bloody stool)

Give antibiotics, treat dehydration, give zinc.

4.3 TREATMENT FOR DIARRHEA

Treatment for a child with diarrhea focuses on preventing and correcting dehydration, continuing feeding, and giving zinc supplementation to speed recovery and reduce future episodes. The choice of treatment depends on the child's classification — whether there is no dehydration, some dehydration, or severe dehydration. The health worker should give the appropriate fluid management plan (Plan A, B, or C), teach the caregiver how to prepare and give Oral Rehydration Solution (ORS), and encourage continued feeding and breastfeeding. Proper treatment helps restore hydration, prevent complications, and ensure full recovery through consistent home and facility-based care.

Preparing Oral Rehydration Solution (ORS)

To prepare ORS for your child, first wash your hands well with soap and clean water. Use one liter of safe drinking water—boiled and cooled or treated—and add the contents of one WHO-ORS packet. Stir until the powder is completely dissolved; the solution should be clear. Do not add sugar, milk, or anything else, and remember to use the ORS within 24 hours—after that, throw it away and prepare a fresh solution.

Plan A – Treat at Home (No Dehydration)

Prevent dehydration, continue feeding, and manage at home.

Give:

- **Oral Rehydration Salts (ORS):** After each loose stool
 - *Under 2 years:* 50–100 ml (5ml/kg)
 - *2–5 years:* 100–200 ml (5ml/kg)
- **Zinc Supplementation:**
 - *<6 months:* 10 mg once daily for 14 days
 - *≥6 months:* 20 mg once daily for 14 days
- **Feeding:** Continue breastfeeding and give nutritious, easily digestible foods.
- **Advise Caregiver to Return Immediately If:**
 - Child unable to drink/breastfeed
 - Becomes sicker, develops blood in stool, or has repeated vomiting
 - Thirsty or passes less urine

- Develops a high fever

Plan B – Some Dehydration

Correct dehydration at a health facility with ORS.

Give:

- **ORS 75 ml/kg over 4 hours**, using clean a cup and spoon.
- Reassess every 1–2 hours: if still dehydrated → continue Plan B, if worse (If clinical signs worsen from some to severe dehydration) → shift to Plan C.
- After 4 hours of rehydration, reassess→ If no signs of dehydration *switch to **Plan A** and continue feeding and zinc. If there are still signs of some dehydration repeat Plan B. If there are signs of severe dehydration switch to Plan C.

If the child also has persistent diarrhea or dysentery, manage accordingly (see below).

Plan C – Severe Dehydration

Rapidly restore fluids and prevent shock.

Give IV Fluids Immediately:

- **Ringer’s Lactate** (preferred) or **Normal Saline**
 - *<12 months*: 30 ml/kg in first 1 hour, then 70 ml/kg over 5 hours
 - *12 months–5 years*: 30 ml/kg in first 30 min, then 70 ml/kg over 2½ hours

Reassess frequently (every 30minutes – 1hour). When rehydrated → switch to **Plan B** if some dehydration or **Plan A** if no dehydration.

After 2 hours of hydration, if patient is still severely dehydrated, refer to next level of care

If IV access is not possible:

- Start ORS via nasogastric tube (20 ml/kg/hr) and refer immediately.
- Continue ORS while in route to the hospital

If child also has severe malnutrition:

- Use *ReSoMal* or *low-sodium ORS* and refer to higher level facility for management.

Dysentery (Bloody Stool)

Give Ciprofloxacin 20 to 30mg/kg/day twice daily for 5 days **or** Cotrimoxazole (trimethoprin 8mg + sulfamethoxazole 40mg) 4mg trimethoprin/kg/dose twice daily for 5 days -First line

If no improvement in 2 days → refer.

If patient comes back after two days and no improvement and the patient relatives refuse referral or is unable to leave due to whatever reasons, add metronidazole.

Metronidazole 7.5 mg/kg/day three times daily

4.4 Counseling of Mother/Caregiver for Diarrhea

Counseling the Mother/Caregiver of a child with diarrhea is a vital part of effective case management. It ensures that the caregiver understands how to continue care at home, including giving the child more fluids, continuing feeding or breastfeeding, and administering zinc for 10–14 days. The health worker should use simple language to explain the illness, demonstrate how to prepare and give ORS, and emphasize the importance of hygiene and safe water practices to prevent future episodes. Caregivers must also be taught to recognize danger signs and know when to return immediately for further care. Good counseling strengthens home management, prevents dehydration, and promotes early recovery. It should be followed using the below steps:

Assess the Mother/Caregiver's Understanding

- Greet the caregiver and establish rapport.
- Ensure the environment is comfortable and conducive
- Ask what brought her and the child today.
- Ask how long the child has had diarrhea, how many stools per day, and what the Mother/Caregiver has been doing at home.
- Ask about **urine output**, fluid intake, and any signs of dehydration.
- Listen to her concerns and acknowledge them.

Explain the Child's Condition

- Use simple language:
 - “Your child has diarrhea, which means frequent, loose stools.”
 - Explain that diarrhea can lead to **dehydration**, which can become serious if not treated.
- Reassure the Mother/Caregiver that most diarrhea is **not serious** if managed properly, but she must watch for danger signs.

Teach Home Care / Supportive Care

Fluids:

- Encourage continued feeding and **frequent breastfeeding**.
- Give **Oral Rehydration Solution (ORS)** to replace lost fluids.
 - Explain how to prepare and give ORS (proper fluid measurement; small frequent sips for young children).
- Continue regular foods — do not stop feeding.
- Offer **zinc supplementation**: for 10–14 days.

Hygiene / Prevention:

- Wash hands after changing the child and before preparing food.
- Use **safe drinking water** and store it cleanly.
- Encourage safe disposal of stools (toilet or pit latrine).
- Keep the child away from contaminated food and water.

Recognize Danger Signs (Return Immediately)

Tell the Mother/Caregiver to return **immediately** if she notices:

- Signs of **severe dehydration**: very sleepy, lethargic, sunken eyes, unable to drink, or very thirsty.
- Blood in stools (possible dysentery).
- Persistent vomiting or not able to keep fluids down.
- Fever or signs of infection.
- Diarrhea lasting more than 7 days.

Demonstrate and Check Understanding

- Show how to mix ORS correctly.
- Ask the Mother/Caregiver to give a few sips and demonstrate at home.
- Ensure she understands how much fluid to give and the frequency.

Emphasize Key Preventive Messages

- Encourage **exclusive breastfeeding** for infants under 6 months.

- Ensure **complete routine immunization** (especially rotavirus, measles, and polio).
- Practice good hygiene and safe food preparation.
- Avoid giving **unprescribed medicines** (antibiotics or anti-diarrheas) unless advised.

Follow-Up Advice

- Return for review if diarrhea persists beyond **5–7 days**, or sooner if any danger signs appear.
- Monitor the child for **hydration status**, appetite, and activity.
- Encourage Mother/Caregiver to **continue feeding and giving fluids** throughout the illness.

Sample Counseling Statement:

“Your child has diarrhea. Give **frequent sips of ORS** and continue breastfeeding and feeding. Give zinc if available. Watch for danger signs: very sleepy, not drinking, vomiting a lot, or blood in stool — come back immediately if any appear. Practice handwashing and safe water to prevent more diarrhea.”

4.5 Follow-Up for Diarrhea

Follow-up care for a child with diarrhea is essential to ensure that the illness is improving, treatment is being followed correctly, and no complications have developed. During the follow-up visit, the health worker should reassess the child for signs of dehydration, persistent diarrhea, or any new problems. The caregiver’s use of ORS, zinc, and continued feeding should be reviewed and reinforced. If the child is not improving or has developed danger signs, further assessment and appropriate referral should be made. Effective follow-up strengthens recovery, reinforces correct home care, and helps prevent recurrence of diarrhea.

Some Dehydration

After 4 hours (at health facility)

To reassess hydration and continue Plan A/B or escalate to Plan C if worse

No Dehydration (treated at home)

The patient should return after 5 days or earlier if not improving

To check recovery and reinforce home care

Severe Dehydration (treated at hospital)

The patient should be follow up daily during admission, then follow-up 5–7 days after discharge

To confirm recovery and reinforce prevention measures

Persistent Diarrhea (≥14 days)

The patient should return after 5 days or earlier if not improving.

To evaluate nutritional status, hydration, and response to feeding plan

Dysentery (bloody stool)

The patient should return after 2 days

To ensure improvement and stool clearing; if no improvement, refer to a higher-level facility

What to Check at Each Follow-Up Visit?**Check for Danger Signs**

- Is the child able to drink or breastfeed?
- Any vomiting of everything taken, convulsions, or lethargy?
→ If yes: classify as Severe Dehydration or Very Sick Child → give urgent treatment (Plan C) and refer immediately.

Assess Current Hydration Status

Look for: general condition, sunken eyes, thirst, skin pinch.

→ **Reclassify** as *No / Some / Severe Dehydration* and manage per Plan A, B, or C.

Check for Ongoing Diarrhea

Ask the caregiver: How many stools per day? Any blood or mucus? Duration?

→ If >14 days, classify as **Persistent Diarrhea**.

→ If blood in stool, classify as **Dysentery**.

Evaluate Feeding and Fluids

- Is the child breastfeeding?
- What foods and fluids were given?
- Encourage continued feeding and ORS use.
- Reinforce **Zinc supplementation** (confirm completion of 14-day course).

Check Growth and Nutrition

- Measure **weight, MUAC, or height -for -age**.
- Assess for **wasting or undernutrition. (Refer to appropriate growth charts)**
→ If undernourished, provide **feeding counselling** and **refer** for nutrition support if needed.

Review Medication Use

- Confirm if the caregiver gave **ORS and Zinc correctly**.
- If an antibiotic was prescribed for dysentery, check adherence and side effects.

Reinforce Home Care Messages

Remind caregiver to:

- Continue fluids and feeding until diarrhea stops.
- Continue daily zinc for 14 days.
- Wash hands with soap after defecation and before feeding.
- Use safe water for drinking and food preparation.
- Keep ORS ready for any future episode.



Exercise

In this exercise, you will practice classifying diarrhea and record the child's signs and classify them on the Recording Form in the appendix. Refer to your chart.

Case 1: Musu

Musu is at the clinic today because she has had diarrhea for 4 days. She is 25 months old. She weighs 9 kg. Her temperature is 37.0°C.

Musu has no general danger signs. She does not have cough or difficult breathing.

The health worker said to the Mother/Caregiver "When Musu has diarrhea, is there any blood in the stool?" The Mother/Caregiver said, "No." The health worker checked for signs of dehydration. Musu is not lethargic or unconscious. She is not restless or irritable. Her eyes are not sunken. Musu drinks eagerly when offered some water. Her skin pinch goes back immediately.

Record Musu's signs on the Recording Form and classify them.

MODULE 5: FEVER

5.1. Assess and Classify a Child with Fever

If the child age is less than 3 months and has Fever, he/she should be referred.

5.1.1 ASSESS FEVER

Two common causes of fever in children are Malaria and Measles.

MALARIA: Malaria is caused by the plasmodium parasites which is transmitted through the bite of anopheline mosquitoes. Four species of plasmodium can cause malaria, but the only common one in Liberia is *Plasmodium falciparum*.

Fever is the main symptom of malaria. It can be present all the time or go away and return at regular intervals. Other signs of *falciparum* malaria are shivering, sweating and vomiting. A child with malaria may have chronic anemia (with no fever) as the only sign of illness. (You will read more about anaemia in section 7.0.)

Signs of malaria can overlap with signs of other illnesses. For example, a child having malaria and pneumonia needs treatment for both malaria and pneumonia. A child having malaria may also have diarrhea and needs treatment for both.

In areas with very high malaria transmission, malaria is a major cause of death in children. A case of uncomplicated malaria can develop into severe malaria as soon as 24 hours after the fever first appears. Severe malaria is malaria with complications such as cerebral malaria or severe anaemia. The child can die if he/she does not receive urgent treatment.

MEASLES: Fever and a generalized rash are the main signs of measles.

Measles is highly infectious. Maternal antibody protects young infants against measles for about 6 months thus most cases occur in children above 6 months to 2 years of age. Overcrowding and poor housing increase the risk of measles occurring early. Measles is a virus illness that infects the skin and the layer of cells that line the lung, gut, eye, mouth and throat.

The measles virus damages the immune system for many weeks after the onset of measles. This leaves the child at risk for other infections.

Complications of measles occur in about 30% of all cases. The most important are: diarrhoea (including dysentery and persistent diarrhoea), pneumonia, mouth ulcers, severe eye infection (which may lead to corneal ulceration and blindness), ear infection.

Encephalitis (a brain infection) occurs in about one in one thousand cases. A child with encephalitis may have a general danger sign such as convulsions or lethargic or unconscious.

Measles contributes to malnutrition because it causes diarrhoea, and mouth ulcers. These problems interfere with feeding. Malnourished children are more likely to have severe complications due to measles. This is especially true for children who are deficient in vitamin A. One in ten severely malnourished children with measles may die. For this reason, it is very important to help the Mother/Caregiver to continue to feed her child during measles.

To Assess Fever:

Ask about and MEASURE fever in all sick children

ASK: Does the child have a fever?

Check if the child has **history of fever, have hot skin or has a temperature 37.50C or above.**

A child with fever may have malaria, measles or another severe disease. Or a child with fever may have a simple cough or cold or other viral infection.

These temperatures are based on axillary temperature. Rectal temperature readings are approximately 0.5 C or higher

Assess a child with fever for:

- How long the child has had fever
- Stiff neck
- Runny nose
- History of measles: Signs suggesting measles -- which are generalized rash and one of these: cough, runny nose, or red eyes.
- If the child has measles now or within the last 3 months, assess for signs of measles complications. They are: mouth ulcers, pus draining from the eye and clouding of the cornea.
- Ask for other Problems like sore throat, ear pain or discharge, painful urination

The box lists the steps for assessing a child for fever.

There are two parts to the box. The top half of the box (above the broken line) describes how to assess the child for signs of malaria, measles, meningitis and other causes of fever. The bottom half of the box describes how to assess the child for signs of measles complications if the child has measles now or within the last 3 months.

Does the child have fever?	
(History of or feels hot or temperature 37.5°C* or above)	
If YES, ASK: • For how long? • If more than 7 days, has <u>fever</u> been present every day? • Signs of severe malaria – Does the child emit scanty or dark urine (coca cola)? – Has the child had spontaneous bleeding? • Minor digestive symptoms – Moderate diarrhoea – Minor vomiting • Has the child had measles within the last 3 months? • Other Problems • Sore throat • Painful Urination • Ear pain/discharge	LOOK AND FEEL: • Stiff neck • Look for the results of BS+ and/or RDT+ • Look for signs of severe malaria if BS+ and/or RDT+ • Dark urine • Abnormal bleeding • Jaundice • Other signs of severe malaria** • Look for signs of MEASLES: – Generalized rash AND – One of the following signs: cough, runny nose, or red eyes
If the child has measles or has had it within the last 3 months:	• Look for mouth ulcers, are they deep or extensive? • Look for pus draining from the eye • Look for clouding of the cornea
Classify for MALARIA	
If current MEASLES or within the last three months, classify	

The child has a history of fever if the child has had any fever with this illness. Use words for "fever" that the Mother/Caregiver understands. Make sure the Mother/Caregiver understands what fever is. For example, ask the Mother/Caregiver if the child's body has felt hot.

Feel the child's stomach or axilla (underarm) and determine if the child feels hot.

Look to see if the child's temperature was measured today and recorded on the child's chart. If the child has a temperature of 37.5°C or above, the child has fever.

If the child's temperature has not been measured, and you have a thermometer, measure the child's temperature.

If the child does not have fever (by history, feels hot or temperature 37.5°C or above), tick (✓) NO on the Recording Form. Ask about the next main symptom, ear problem. Do not assess the child for signs related to fever.

If the child has fever (by history, feels hot or temperature 37.5°C or above), assess the child for additional signs related to fever. Assess the child's fever even if the child does not have a temperature of 37.5°C or above or does not feel hot now. History of fever is enough to assess the child for fever.



ASK: For how long? If more than 7 days, has fever been present every day?

Ask the Mother/Caregiver how long the child has had fever. If the fever has been present for more than 7 days, ask if the fever has been present every day.

Most fevers due to viral illnesses go away within a few days. A fever which has been present every day for more than 7 days can mean that the child has a more severe disease such as typhoid fever. Refer this child for further assessment.

ASK: Has the child had measles within the last 3 months?

Measles damages the child's immune system and leaves the child at risk for other infections for many weeks.

A child with fever and a history of measles within the last 3 months may have an infection due to complications of measles such as an eye infection.

LOOK or FEEL for stiff neck.

A child with fever and stiff neck may have meningitis. A child with meningitis needs urgent treatment with injectable antibiotics and referral to a hospital.

While you talk with the Mother/Caregiver during the assessment, look to see if the child moves and bends his neck easily as he looks around. If the child is moving and bending his neck, he does not have a stiff neck.

If you did not see any movement, or if you are not sure, draw the child's attention to his umbilicus or toes. For example, you can shine a flashlight on his toes or umbilicus or tickle his toes to encourage the child to look down. Look to see if the child can bend his neck when he looks down at his umbilicus or toes.

If you still have not seen the child bend his neck himself, ask the Mother/Caregiver to help you lie the child on his back. Lean over the child, gently support his back and

shoulders with one hand. With the other hand, hold his head. Then carefully bend the head forward toward his chest. If the neck bends easily, the child does not have stiff neck. If the neck feels stiff and there is resistance to bending, the child has a stiff neck often a child with a stiff neck will cry when you try to bend the neck.



LOOK for runny nose.

A runny nose in a child with fever may mean that the child has a common cold.

If the child has a runny nose, ask the Mother/Caregiver if the child has had a runny nose only with this illness. If he/she is not sure, ask questions to find out if it is an acute or chronic runny nose.

When malaria risk is low, a child with fever and a runny nose does not need an antimalarial. This child's fever is probably due to the common cold.

LOOK for signs suggesting MEASLES

Assess a child with fever to see if there are signs suggesting measles.

Look for a generalized rash and for one of the following signs: cough, runny nose, red eyes

Generalized rash

In measles, a red rash begins from the face (usually behind the ears or hairlines) and spreads to all parts of the body, arms and legs by the next day. After 4 to 5 days, the rash starts to fade and the skin may peel. (Some children with severe infection may have more rash spread over more of the body.) The rash becomes more discolored (dark brown or blackish), and there is more peeling of the skin.

A measles rash does not have vesicles (blisters) or pustules. The rash does not itch. Do not confuse measles with other common childhood rashes such as chicken pox, scabies or heat rash. (The chicken pox rash is a generalized rash with vesicles). Scabies occurs on the hands, feet, ankles, elbows, buttocks and axilla. It also itches. Heat rash can be a generalized rash with small bumps and vesicles which itch. A child with heat rash is not sick. You can recognize measles more easily during times when other cases of measles are occurring in your community.

To classify a child as having measles, the child with fever must have a generalized rash AND one of the following signs: cough, runny nose, or red eyes. The child has "red eyes" if there is redness in the white part of the eye. In a healthy eye, the white part of the eye is clearly white and not discolored.

If the child has MEASLES now or within the last 3 months: Look to see if the child has mouth or eye complications. Other complications of measles such as stridor in a calm child, pneumonia, and diarrhoea are assessed earlier; malnutrition and ear infection are assessed later.

LOOK for mouth ulcers. Are they deep and extensive?

Look inside the child's mouth for mouth ulcers. Ulcers are painful open sores on the inside of the mouth and lips or the tongue. They may be red or have white coating on them. In severe cases, they are deep and extensive. When present, mouth ulcers make it difficult for the child with measles to drink or eat.

Mouth ulcers are different than the small spots called Koplik spots. Koplik spots occur in the mouth inside the cheek during early stages of the measles infection. Koplik spots are small, irregular, bright red spots with a white spot in the center. They do not interfere with drinking or eating. They do not need treatment.

LOOK at the Eyes

The conjunctiva lines the eyelids and covers the white part of the eye. The iris is the coloured part of the eye. The normal cornea (the clear window of the eye) is bright and transparent. Through it, you can see the iris and the round pupil at its middle. A normal cornea is clear. You can see the colour of the iris clearly. The pupil is black.

Pus draining from the eye is a sign of conjunctivitis. Conjunctivitis is an infection of the conjunctiva, the inside surface of the eyelid and the white part of the eye.

Look for redness of the conjunctiva

If you do not see pus draining from the eye, look for pus on the conjunctiva or on the eyelids. Often the pus forms a crust when the child is sleeping and seals the eye shut. It can be gently opened with clean hands. Wash your hands after examining the eye of any child with pus draining from the eye.

LOOK for clouding of the cornea.

The cornea is usually clear. Look carefully at the cornea for clouding. When clouding of the cornea is present, there is a cloudy or hazy area in the cornea such as how a glass of water looks, when you add a small amount of milk. The clouding may occur in one or both eyes.

Corneal clouding is a dangerous condition. The corneal clouding may be due to vitamin A deficiency which has been made worse by measles. If the corneal clouding is not treated, the

cornea can ulcerate and cause blindness. A child with clouding of the cornea needs urgent Vitamin A treatment.

A child with corneal clouding may keep his eyes tightly shut (closed) when exposed to light. The light may cause irritation and pain to the child's eyes. To check the child's eye, wait for the child to open his eye or gently pull down the lower eyelid to look for cornea clouding.

If there is clouding of the cornea, ask the Mother/Caregiver/caretaker how long the clouding has been Present? If the Mother/Caregiver/caretaker is certain that clouding has been there for some time, ask if

the clouding has already been assessed and treated at the hospital. If it has, you do not need to refer this child.

5.1.2 CLASSIFY FEVER

If the child has fever and no signs of measles, classify the child for malaria using the upper box.

If the child has signs of both fever and generalized rash, classify the child for measles using the second box.

Classify for MALARIA	- Any general danger sign OR - Other severe classification OR - Stiff neck AND - BS+ and/or RDT+	SEVERE MALARIA	- Give first dose of IM Artesunate for severe malaria (first dose). - Give first dose of appropriate antibiotic. - Treat the child to prevent low blood sugar. - Administer one dose of paracetamol or ibuprofen in health centre if high fever (38°C or more) - Refer URGENTLY to hospital.
	- Any general danger sign OR - Stiff neck AND - BS- and/or RDT-	VERY SEVERE FEBRILE DISEASE	- Give first dose of appropriate antibiotic. - Treat the child to prevent low blood sugar. - Give one dose of paracetamol or ibuprofen in health center if high fever (38 °C or more) - Refer URGENTLY to hospital.
	- Fever (History or feels hot or temperature 37.5°C or above). - Minor digestive symptoms) AND - BS+ and/or RDT+	UNCOMPLICATED MALARIA WITH MINOR DIGESTIVE SYMPTOMS	- Give IM Artesunate - Administer one dose of paracetamol or ibuprofen in health centre if temperature is 38 °C or more) - If digestive symptoms stop, continue with the first intention antimalarial drug for 3 days - Refer the child if his/her status does not improve within 24 hours following the administration of the first dose.
	- Fever (History or feels hot or temperature 37.5°C or above). AND - BS+ and/or RDT+	UNCOMPLICATED MALARIA	- Give the first intention antimalarial drug - Administer one dose of paracetamol or ibuprofen in health centre if temperature is 38 °C or more). - Explain mother when to return immediately. - Follow-up in 3 days if fever persists. - If fever has been present all days for 7 days, refer for investigations
	- Fever (History or feels hot or temperature 37.5°C or above). AND - BS- and/or RDT- Has Other Problems	MALARIA UNLIKELY	- Administer one dose of paracetamol or ibuprofen in health centre if temperature is 38 °C or more). - Give appropriate treatments for any other identified cause of fever - Explain mother when to return immediately. - Follow-up in 2 days if fever persists - If fever has been present all days for 7 days, refer for further investigation
If current MEASLES or within the last three months, classify looking for general lethargy, unable respiratory to feed or, diarrhoea, ear pain.) (dehydration) (signs from being sick)	- Any general danger sign, OR - clouding of the cornea OR - Deep or extensive mouth ulcers	SEVERE AND COMPLICATED MEASLES **	- Give Vitamin A (if no oedema). - Give first dose of appropriate antibiotic. - If clouding of the cornea or pus draining from the eyes, treat with tetracycline eye ointment - Administer one dose of paracetamol or ibuprofen in health center if temperature is 38 °C or more). - Treat the child to prevent low blood sugar. - Refer URGENTLY to hospital.
	- Pus draining from the eye OR - Mouth ulcers	MEASLES WITH COMPLICATIONS ** AT EYES AND/OR IN THE MOUTH	- Give Vitamin A (if no oedema). - Give first dose of appropriate antibiotic. - If pus draining from the eye, treat with tetracycline eye ointment. - If mouth ulcers, treat with oral nystatin - Explain mother when to return immediately. - Put under observation - Follow-up in 2 days
	Current MEASLES or within the last three months	MEASLES	- Give Vitamin A (if no oedema). - Explain mother when to return immediately. - Continue Age appropriate feeding and other supportive care

There are five possible classifications for malaria

SEVERE MALARIA

If the child with fever has any general danger sign or other severe classification or neck stiffness and positive malaria parasite on blood smear or RDT is positive classify as severe malaria.

VERY SEVERE FEBRILE DISEASE

If the child with negative malaria smear and RDT has fever and any general danger sign or neck stiffness but has no apparent cause of the fever e.g. pneumonia, dysentery, acute ear infection, sore throat, cellulitis or abscess, etc. classify the child as having: VERY SEVERE FEBRILE DISEASE Treat this child as an EMERGENCY. Give antipyretics (Paracetamol or Ibuprofen per the child's weight), anticonvulsants (Diazepam or Phenobarbital per the child's weight) and broad-spectrum antibiotics (Ceftriaxone, Cefotaxime OR as available)

REFER this child immediately to the next appropriate level of care

UNCOMPLICATED MALARIA WITH MINOR DIGESTIVE SYMPTOM

This classification is made when the child has fever (temperature $\geq 37.5^{\circ}\text{C}$ or history of fever) and minor digestive symptoms such as nausea, abdominal discomfort, or mild vomiting or diarrhea with positive malaria test (RDT or blood smear)

The illness is considered uncomplicated malaria, but digestive symptoms are also managed while antimalarial treatment is started. If the child is vomiting and can't take the oral antimalaria a first dose of IV or IM is needed while treating the digestive symptoms.

UNCOMPLICATED MALARIA

A child is classified as having uncomplicated Malaria when fever is present, malaria test is positive and no danger signs or severe features are present.

These children can usually be managed at the outpatient level with oral antimalarial drugs and supportive care.

MALARIA UNLIKELY

This classification is given when the child has fever, but malaria test is negative, and there are no signs suggesting severe illness.

In this case, the healthcare worker should look for other causes of fever such as respiratory infections, urinary tract infection, ear infection, or viral illnesses.

Most viral infections last less than a week. A fever that persists every day for more than 7 days may be a sign of typhoid fever or other severe disease. If the child's fever has persisted every day for more than 7 days, refer the child for additional assessment.

5.2 TREAT THE FEVER

Give PARACETAMOL for fever ($<38.0^{\circ}\text{C}$) in the clinic Paracetamol lowers fever

Medication Name		PARACETAMOL
Dose		10-15 mg/kg/dose
Maximum Dose		4000 mg/day
Dosage form (syrup)		125mg/5ml
Age or Weight	2months up to 4months 4 -<6kg	2.5-3.5ml
	4month up to 12months 6-<10kg	3.5-6ml
	12month up to 3years 10-<14kg	6-8.5ml
	3years up to 5years (14-<19kg)	8.5-11.5ml
Frequency & Duration		Every 6-8 hours until Fever or pain is gone

If the child has high fever, give one dose of PARACETAMOL IN THE CLINIC. Tell the Mother/Caregiver /caregiver to give one dose every 6 hours until the fever is gone.

Treat a child classified as having UNCOMPLICATED MALARIA or MALARIA WITH MINOR DIGESTIVE SYMPTOMS with an oral antimalarial. If the child also has cough and fast breathing, the child may have malaria or pneumonia, or both. It is not possible without laboratory tests to find out if the child has malaria or pneumonia. Give the child cotrimoxazole for 5 days. Also give paracetamol to a child with high fever (axillary temperature of 38.5°C or above). Advise on breastfeeding & feeding during illness.

Start Antimalaria as below Treatment

Give an oral antimalarial drug

FIRST- LINE ANTIMALARIAL: ARTEMETHER + LUMEFANTRINE IF ARTEMETHER + LUMEFANTRINE

Explain the mother that she must monitor the child for 30 minutes. If vomiting occurs within 30 minutes after drug administration, she must repeat the dose and return to the health center to get additional tablets.

ARTEMETHER (A = 20mg) + LUMEFANTRINE (L = 120mg)	
AGE or WEIGHT	Twice a day for 3 DAYS
	Number of tablets
6 months up to 3 years ($5 \leq 14$ kg)	1
3 years up to 5 years ($15 \leq 24$ kg)	2

Treatment for Severe Malaria and Very severe febrile disease

A child with fever and any general danger sign or stiff neck may have meningitis, severe malaria (including cerebral malaria) or sepsis. It is not possible to distinguish between these severe diseases without laboratory tests. A child classified as having VERY SEVERE FEBRILE DISEASE or SEVERE MALARIA needs urgent treatment and referral. Before referring urgently, you will give several treatments for the possible severe diseases.

Give the child an injection of quinine for malaria. Also give the first dose of an appropriate antibiotic for meningitis or other severe bacterial infection. You should also treat the child to prevent low blood sugar. Also give paracetamol if there is a high fever.

4.3 COUNSEL THE MOTHER/CAREGIVER FOR FEVER

4.4 FOLLOW UP VISIT FOR FEVER

Any child classified as having FEVER: Malaria Unlikely, he/she should return for a follow-up if it persists daily. If the fever persists 2 days after the initial visit this may mean that the child has complication or there may be some causes of fever that were apparent at the first visit.

The instruction for conducting a follow- up visit for a child is classified as having FEVER POSSIBLE BACTERIAL INFECTION or BACTERIAL INFECTION UNLIKELY are as following:

If fever persists:

Do a full reassessment of the child> see ASSESS & CLASSIFY Chart

Assess for other cause and fever

Treatment:

If the child has any general danger signs or stiff neck treat it as a VERY SEVERE FEBRILE DISEASE

If the child has any apparent cause fever provide treatment

If the child has no apparent cause of fever:

Advice the Mother/Caregiver to return daily, if the fever persists

If the fever has been present for 5 days, refer for assessment

Do a full assessment of the child as on the ASSESS & CLASSIFY chart. As you reassess the child look for the cause of the fever, possibly, pneumonia, meningitis, measles, ear infection or dysentery. Also consider whether the child has any other problem that could cause fever, such as Tuberculosis, urinary tract infection. Osteomyelitis, cellulitis or abscess. Then select appropriate treatment in the follow-up box.

If the child has any general danger sign or stiff neck, treat as VERY SEVERE FEBRILE DISEASE.

If the child has any apparent cause of the fever, provide the needed treatment, or refer for the care of the cause.

If the has no apparent cause of fever

Advice the Mother/Caregiver to return daily if the fever persist

If the fever has been present every day for 5 days, refer the child

4.5 Assess and Classify for Measles

There are three possible classifications of measles:

- SEVERE COMPLICATED MEASLES
- MEASLES WITH EYE OR MOUTH COMPLICATIONS

➤ MEASLES

The table for classifying measles if present now or within the last 3 months is below :

• Any general danger sign or • Clouding of cornea or • Deep or extensive mouth ulcers.	SEVERE COMPLICATED MEASLES***	Give Vitamin A. Give first dose of an appropriate antibiotic. If clouding of the cornea or pus draining from the eye, apply chloramphenicol/tetracycline eye ointment. Refer URGENTLY to hospital.
• Pus draining from the eye or • Mouth ulcers.	MEASLES WITH EYE OR MOUTH COMPLICATION***	Give Vitamin A If pus draining from the eye, treat eye infection with chloramphenicol/tetracycline eye ointment. If mouth ulcers, treat with gentian violet. Advise on breastfeeding & feeding during illness Follow-up in 2 days.
• Measles now or with the last 3 months.	MEASLES	Give Vitamin A for treatment. Advise on breastfeeding & feeding during illness Give supportive care

SEVERE COMPLICATED MEASLES

If the child has any general danger sign, clouding of cornea or deep or extensive mouth ulcers, classify the child as having SEVERE COMPLICATED MEASLES. This child needs urgent treatment and referral to hospital.

Children with measles may have other serious complications of measles. These include stridor in a calm child, severe pneumonia, severe dehydration, or severe malnutrition. You assess and classify these signs in other parts of the assessment. Their treatments are appropriate for the child with measles.

Treatment

Some complications are due to bacterial infections. Others are due to the measles virus which causes damage to the respiratory and intestinal tracts. Vitamin A deficiency contributes to some of the complications such as corneal ulcer. Any vitamin A deficiency is made worse by the measles infection. Measles complications can lead to severe disease and death.

All children with SEVERE COMPLICATED MEASLES should receive urgent treatment. Treat the child with vitamin A. Also give the first dose of an appropriate antibiotic.

If there is clouding of the cornea, or pus draining from the eye, apply tetracycline ointment. If it is not treated, corneal clouding can result in blindness. Ask the Mother/Caregiver/care taker if the clouding has been present for some time. Find out if it was assessed and treated at the hospital. If it was, you do not need to refer the child again for this eye sign.

MEASLES WITH EYE OR MOUTH COMPLICATIONS

If the child has pus draining from the eye or mouth ulcers which are not deep or extensive, classify the child as having MEASLES WITH EYE OR MOUTH COMPLICATIONS. A child with this classification does not need referral.

You assess and classify the child for other complications of measles (pneumonia, diarrhoea, ear infection and malnutrition) in other parts of this assessment. Their treatments are appropriate for the child with measles.

Treatment

Identifying and treating measles complications early in the infection can prevent many deaths. Treat the child with vitamin A. It will help correct any vitamin A deficiency and decrease the severity of the complications. Teach the Mother/Caregiver/care taker to treat the child's eye infection or mouth ulcers at home. Treating mouth ulcers helps the child to more quickly resume normal feeding. Advise on breastfeeding & feeding during illness

MEASLES

A child with measles now or within the last 3 months and with none of the complications listed in the pink or yellow rows is classified as having MEASLES. Give the child vitamin A to help prevent measles complications.

All children with measles should receive vitamin A. Advise on breastfeeding & feeding during illness and supportive care such as paracetamol/ibuprofen, vitamin c, zinc, calamine lotion

Give Vitamin A ○ Give two doses. ▪ Give first dose in the clinic ▪ Give mother/caretaker one dose to give at home the next day		
AGE	VITAMIN A CAPSULES	
	200,000 IU	100,000 IU
6months up to 12 months	½ capsule	1 capsule
12 months up to 5 years	1 capsule	2 capsules



Exercise

Case 1: Paye

Paye is 5 months old. He weighs 5.2 kg. His axillary temperature is 37.5°C. His Mother/Caregiver said he is not eating well. She said he feels hot, and she wants a health worker to help him.

Paye is able to drink, has not vomited, does not have convulsions, and is not lethargic or unconscious.

Paye does not have a cough, said his Mother/Caregiver. He does not have diarrhea.

Because Paye's temperature is 37.5°C and he feels hot, the health worker assessed Paye further for signs related to fever. It is the rainy season. The Mother/Caregiver said Paye's fever began 2 days ago. He has not had measles within the last 3 months. He does not have stiff neck, his nose is not runny, and there are no signs suggesting measles.

Record Paye's signs and classify them on the Recording Form on the next page.

MODULE 6: Anemia and Malnutrition

6.1 ASSESS AND CLASSIFY AND MANAGE ANEMIA

6.1.1 ASSESS AND CLASSIFY ANEMIA

Look for palmar pallor.

Pallor is unusual paleness of the skin. It is a sign of anemia. To see if the child has palmar pallor:

- Look at the colour of the child's palm. Hold the child's palm open by grasping it gently from the side. Do not stretch the fingers backwards. This may cause a false palmar pallor by blocking the blood supply.
- Compare the colour of the child's palm with the Mother's/Caregiver's palm, if not possible use your palm.

If the colour of the child's palm is pale, the child has **some palmar pallor**. If the colour of the palm is very pale or so pale that it looks white, the child has **severe palmar pallor**.



Look for Palmar Pallor:

- Severe Palmar pallor?
- Some Palmar Pallor?
- No Palmar pallor?

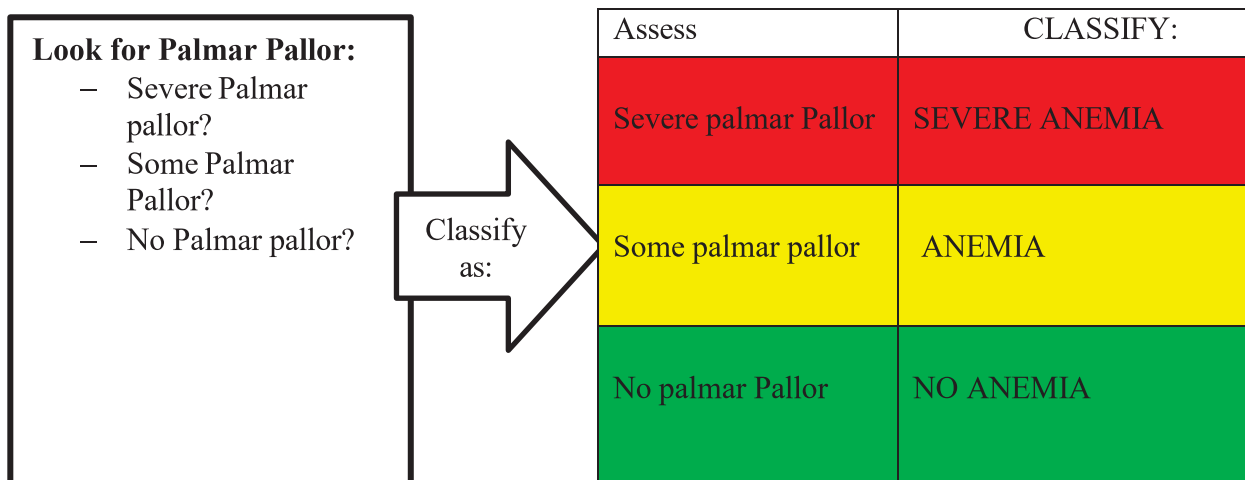
Classify the sick child for Anemia:

If the sick child has severe palmar pallor, that will put him in the red row and classify the sick child as having SEVERE ANEMIA. This child needs URGENT REFERRAL.

If the sick child has some palmar pallor, that will put him in the yellow row and classify the sick child as having ANEMIA.

If the sick child has no palmar pallor, that will put him in the green row and classify the sick child as NO ANEMIA.

See the chart below and refer to your chart booklet:



6.1.2 IDENTIFYING THE APPROPRIATE TREATMENT

ASSESS	CLASSIFY	IDENTIFY TREATMENT
Severe palmar Pallor	SEVERE ANEMIA	➤ Treat the child to prevent low blood sugar ➤ Refer URGENTLY to a hospital
Some palmar Pallor	ANEMIA	➤ Give oral iron/Folic Acid ➤ Assess for Malaria ➤ Give Mebendazole if child is 1 year or older & has not had a dose in the previous 6months ➤ Advise sleeping under an ITN ➤ If the child is not up to 6 months, assess the breastfeeding practices and support the mother to exclusively breastfeed ➤ If the child is 6 months and above, assess the child's feeding and counsel according to age of the child ➤ Advise Mother/Caregiver when to return immediately ➤ Follow-up in 14 days
No palmar pallor	NO ANEMIA	➤ Advise sleeping under an ITN ➤ If the child is not up to 6 months, assess the breastfeeding practices and support the Mother/Caregiver to exclusively breastfeed ➤ If the child is 6 months and above, assess the child's feeding and counsel according to the age of the baby ➤ Give Mebendazole if child is 1 year or older & has not had a dose in the previous 6months ➤ If breastfeeding/feeding problems, follow up in 5 days ➤ Advise the Mother/Caregiver when to come back immediately

6.1.3 Treat the sick child and counsel the Mother/Caregiver

SEVERE ANAEMIA

If the child has severe palmar pallor, classify the child as having SEVERE ANAEMIA.

Children classified as having SEVERE ANAEMIA are at risk of death. These children need urgent referral to hospital where their treatment can be carefully monitored. They may need blood transfusions and treatment for other illnesses.

ANAEMIA

If the child has some palmar pallor, classify the child as having ANAEMIA. A child classified as having ANAEMIA has a higher risk of severe disease

Treat the child with iron/folic acid

When there is a high risk of malaria, assess for malaria, as the anaemia may be due to malaria and advise to sleep under an ITN to prevent malaria.

Hookworm and whipworm infestations contribute to anemia because of blood loss from the gut causing iron deficiency.

Give the child with anemia Mebendazole, if the child is 1 year of age or older and has not had a dose of Mebendazole in the last 6 months.

If the child is not up to 6 months, assess the breastfeeding practices and support the Mother to exclusively breastfeed

If the child is 6 months and above, assess the child's feeding and counsel according to the age of the child

Advise the Mother/Caregiver/caretaker of a child with some palmar pallor to return for follow-up in 14 days.

NO ANAEMIA

If the sick child has no palmar pallor, classify the child as having NO ANAEMIA

Advise to sleep under an ITN

If the child is not up to 6 months, assess the breastfeeding practices and support the Mother to exclusively breastfeed

If the child is 6 months and above, assess the child's feeding and counsel according to the age of the child

Give Mebendazole if child is 1 year or older & has not had a dose in the previous 6 months

If breastfeeding/feeding problems, follow up in 5 days

Advise the Mother/Caregiver when to come back immediately

6.1.4 CONDUCT A FOLLOW-UP VISIT FOR PALLOR

When a child who had palmar pallor returns for a follow-up visit after 14 days, follow these instructions:

- Give iron/folic acid. Advise mother/caretaker to return in 14 days for more iron/folic acid.
- Continue to give the mother/caretaker iron/folic acid when she returns every 14 days for up to 3 months.

If after 3 months the child still has palmar pallor, refer the child for assessment.

6.2 MALNUTRITION

A Mother/Caregiver may bring her child to clinic because the child has an acute illness. The child may not have specific complaints that point to malnutrition or anaemia. A sick child can be malnourished, but the health worker or the child's family may not notice the problem.

Children with malnutrition (mild, moderate, or severe), have a higher risk of many types of disease and death. Severe acute malnutrition develops when

- the child is not getting enough energy or protein and other nutrients from his food to meet his nutritional needs.
- the child has an underlying disease: HIV or tuberculosis infection or any chronic illness ex: congenital heart disease.

Identifying children with malnutrition and treating them can help prevent many severe diseases and death. Some malnutrition cases can be treated at home, while children with severe acute malnutrition with medical complications and/ or poor appetite need referral to hospital for systemic antibiotic treatment and prevention of complications, special feeding or specific treatment of a disease contributing to malnutrition (such as tuberculosis).

All children should be assessed for malnutrition so as to:

- Identify children with severe acute malnutrition who are at increased risk of mortality and need urgent referral for active treatment; and
- Identify children with moderate acute malnutrition who may benefit from nutritional counseling for appropriate feeding or treatment of a underlying disease.

SEVERE ACUTE MALNUTRITION or FAILURE TO THRIVE IN INFANTS < 6 MONTHS

Severe acute malnutrition is increasingly being recognized in infants who are less than 6 months of age. There is a higher mortality in younger infants compared to older infants and children. Nutritional cause of malnutrition is less common in exclusive breastfed infants six months and younger. Severe acute malnutrition (failure to thrive) in infants < 6 months may be due to other causes including: neglect causing no to inadequate breastfeeding, HIV, tuberculosis, congenital diseases etc.. Infants who are not improving after nutritional counselling and feeding need to be referred for advance evaluation and management.

6.2.1 ASSESS FOR MALNUTRITION

Assess ALL children presenting at the health facility for malnutrition:

ASK: Ask the Mother or Caregiver;

Any history of breast-feeding difficulty OR failure to feed effectively

Recent weight loss

Failure to gain weight, and

The presence of bilateral edema.

Recurrent illnesses

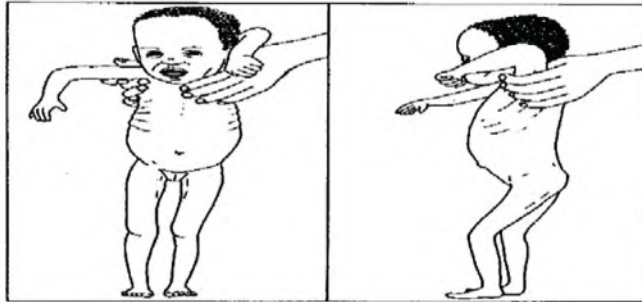
LOOK AND FEEL:

Look for visible severe wasting

LOOK AND CHECK for bilateral Pitting oedema of the feet
Measure the weight and length, and determine weight-for-Length

To look for visible severe wasting:

Remove the child's clothes. Look for severe wasting of the muscles of the shoulders, arms, chest, buttocks and legs. Look to see if the outline of the child's ribs is easily seen. Look at the child's hips. They may look small when you compare them with the chest and abdomen. Look at the child from the side to see if the fat of the buttocks is missing. When wasting is extreme, there are many folds of skin on the buttocks and thigh. It looks as if the child is wearing baggy pants. The face of a child with visible severe wasting may still look normal. The child's abdomen may be large or distended.



Checking for bilateral edema

Bilateral pitting edema is one sign of severe acute malnutrition/Kwashiorkor. Children with bilateral edema are directly identified to be acutely malnourished. These children are at high risk of mortality and need to be treated in a therapeutic feeding program urgently.

In order to determine the presence of edema,

Normal thumb pressure is applied to the both feet simultaneously for at least three seconds.

If a shallow print persists on the both feet, then the child has edema.

Only children with bilateral edema are recorded as having nutritional edema³.

You must formally test for edema with finger pressure, you cannot tell by just looking



³ There are other causes of bilateral edema (e.g. nephritic syndrome) but they all require admission as an inpatient.

WHO classification of nutritional edema in children	
Severity of Edema	Recording
Mild: Both feet	+
Moderate: Both feet, plus lower legs, hands or lower arms	++
Severe: Generalized Edema	+++

Here is the box from the "Assess" column on the ASSESS & CLASSIFY chart. It describes how to assess a sick child for malnutrition.

CHECK FOR ACUTE MALNUTRITION, IN INFANTS < 6 MONTHS OR CHILDREN 6 – 59 MONTHS	
ASK: Ask the Mother/Caregiver; - Any history of breast-feeding difficulty OR failure to feed effectively - Recent weight loss - Failure to gain weight, and - Presence of bilateral edema. - Recurrent illnesses	LOOK AND FEEL: – Look for visible severe wasting – LOOK AND Check for bilateral Pitting oedema of the feet – Measure the weight and length, and determine weight-for-Length

Determine weight-for-Length

Weight-for-Length compares the child's weight with the expected weight of healthy children who have the same length, using the new WHO growth charts

You will identify children whose weight-for-Length (W/L/H) is below the bottom curve of a weight-for-Length chart. These are children who are severely wasted. Children on or above the bottom curve of the chart can still be malnourished (ex: moderate). But children who are below the bottom curve are severely malnourished and need special attention to how they are fed.

To determine weight-for-Length:

Determine the child's length in centimeters.

Weigh the child if he/she has not already been weighed today. Use a scale which you know gives accurate weights. The child should wear light clothing when he/she is being weighed. Ask the Mother/Caregiver to help remove any coat, sweater, or shoes.

Use the WHO weight-for-Length chart for specific sex (Boys/Girls) to determine weight-for-Length. Look now at the WHO weight-for-Length growth chart on the next page.

Look at the left-hand axis to locate the line that shows the child's weight

Look at the bottom axis of the chart to locate the line that shows the child's Length in cm.

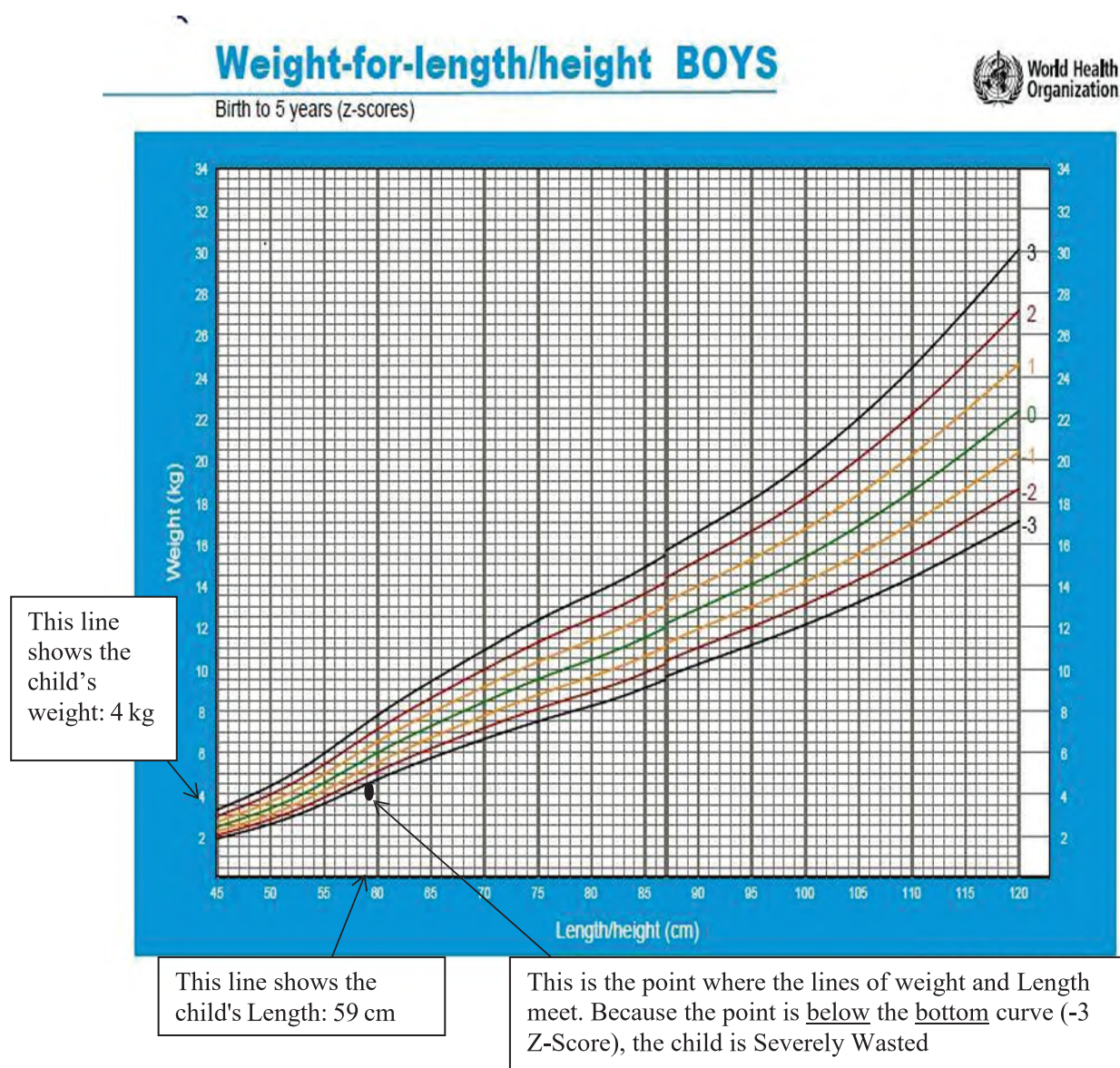
Find the point on the chart where the line for the child's weight meets the line for the child's Length.

Decide if the point is above, on, or below the bottom curve (-3 Z-score)

If the point is below the bottom curve (<-3 Z-score), the child is severely wasted (Severe acute malnutrition).

If the point is above or on the bottom curve, the child is not Severely Wasted.

EXAMPLE: A 4 months old boy came to the clinic. His weighs 4 kg and his length is 59 cm. Here is how the health worker determined the child's weight for Length.



CHECK MUAC IN CHILDREN 6 - 59 MONTHS:

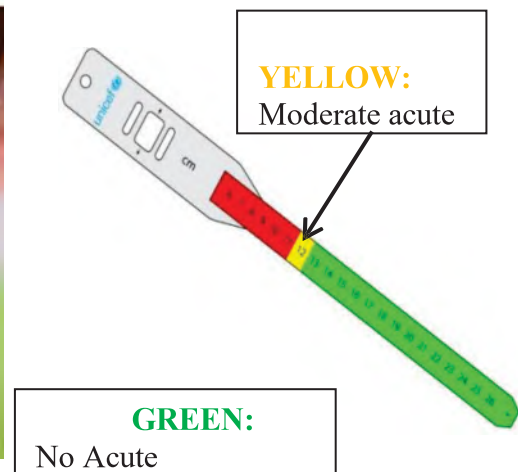
MUAC is the measurement done around the middle of the child's left upper arm. It is an important indicator of acute malnutrition in children aged 6-59 months. Children with a MUAC less than 11.5 cm have severe acute malnutrition and need special treatment.

Special strips below help to assess if MUAC is less than 11.5 cm.

Use the same technique as below to determine if MUAC (mid-upper arm circumference) is less than 11.5 cm

- Gently outstretch the child's left arm to straighten it.
- On the upper arm, find the mid-point between the child's shoulder and elbow.
- Hold the large end of the strap against the arm at the midpoint of the arm.
- Put the other end of the strap around the child's arm. And thread the end up through the second small slit in the strap—coming up from below the strap.
- Pull both ends until the strap fits closely, but not so tight that it makes folds in the skin.
- Press the window at the wide end onto the strap, and note the colour at the marks.

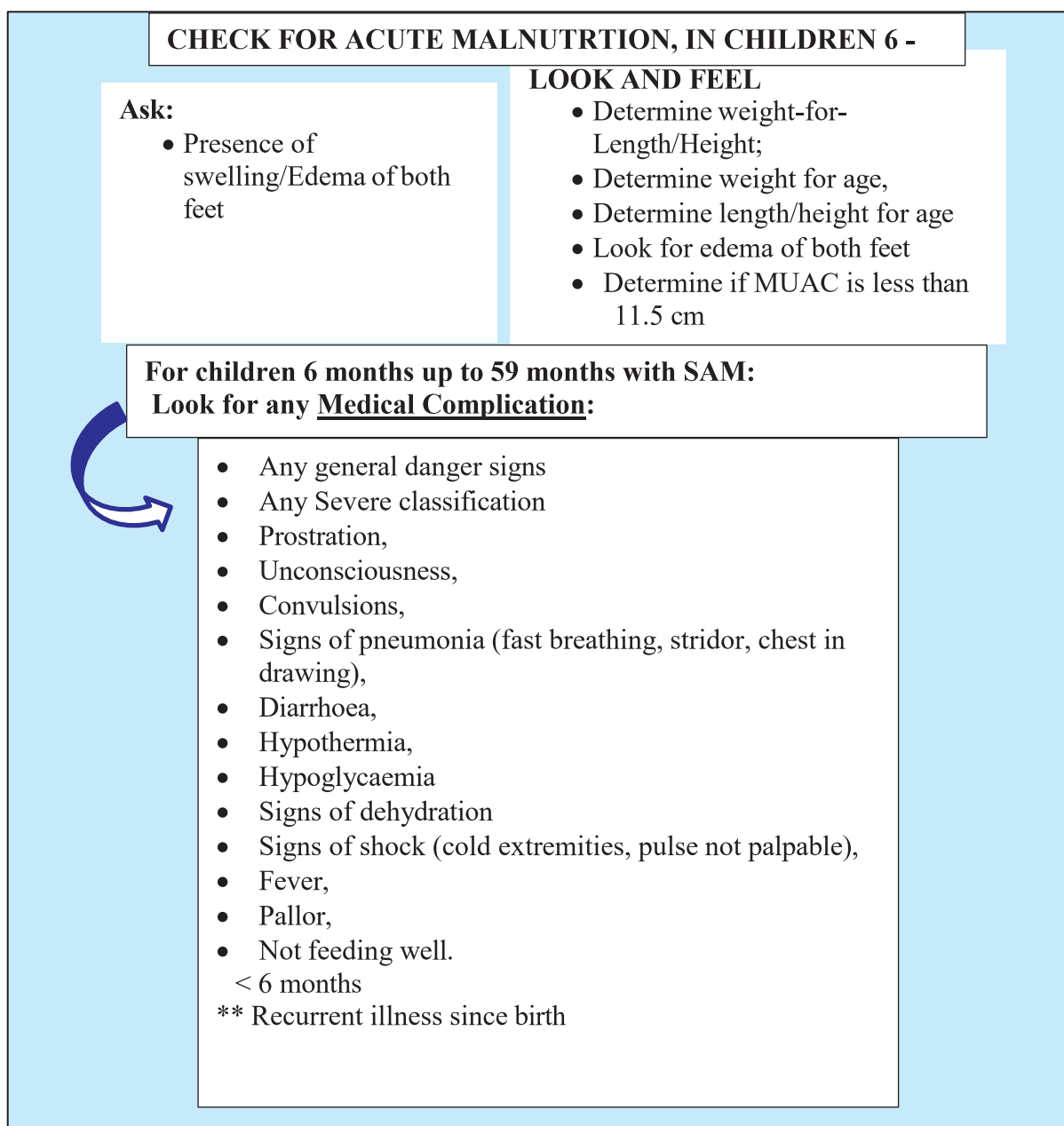
Red indicates that MUAC is below 11.5 cm.



To assess if MUAC is below 11.5 cm: (See the picture above)

CHECK FOR ACUTE MALNUTRITION,

LOOK and FEEL:



Assess appetite for children **6 months up to 59 months** with SAM

Appetite of children aged 6 months and above with severe acute malnutrition (oedema on both feet or MUAC less than 11.5 cm) should be assessed by an appetite test. This test is not needed, however, in children who have pneumonia, persistent diarrhoea or dysentery as well as measles or malaria. Appetite test is not done if child has any of the general danger signs

Appetite is assessed by giving the child some Ready-to-use Therapeutic Food (RUTF) to try at the site. A child may refuse to eat RUTF because it is unfamiliar and because the child is in a strange environment. In this case, the care taker should move to a quiet, private area and slowly encourage the child to take the RUTF. It is essential that the health worker observes the child eating the RUTF before classifying nutritional status.

To carry out the appetite test, it is important to follow the steps listed below:

1. The appetite test should be conducted in a separate quiet area.
2. Explain to the carer the purpose of the appetite test and how it will be carried out.
3. The carer, where possible, should wash his/her hands.
4. The carer should sit comfortably with the child on his/her lap and either offer the RUTF from the packet or put a small amount on his/her finger and give it to the child.
5. The carer should offer the child the RUTF gently, encouraging the child all the time. If the child refuses, then the carer should continue to quietly encourage the child. The child must not be forced to take the RUTF.
6. The child needs to be offered plenty of water to drink from a cup as he/she is taking the

To pass the appetite test, the child must eat, within 30 minutes the quantities of RUTF shown in Table below.

Table: minimum amount of RUTF a child should eat within 30 minutes to pass the appetite test.

APPETITE TEST	
Body Weight in Kilograms	Pass Appetite Test
Less than 4 kg	>1/4
4 – 6.9	>1/3
7 – 9.9	>1/2
10 – 14.9	>3/4
15 – 29	>1

Note: quantities should be adjusted if RUTF is available in containers or in packaging with different weights

NB: Appetite test is done for children with MUAC < 11.5 cm or W/L/H < -3 Z-Score, or +/++ Edema, but **not for children with severe wasting with edema and children with medical complication**

CLASSIFY INFANTS <6 MONTHS FOR ACUTE MALNUTRITION:

CHECK FOR ACUTE MALNUTRITION, INFANTS <6 MONTHS		SIGN	CLASSIFY AS:	IDENTIFY TREATMENT
ASK: Ask the Mother/ Caregiver: - Any history of breast-feeding difficulty OR failure to feed effectively - Recent weight loss - Failure to gain weight, - Recurrent illness and - Presence of	LOOK AND FEEL: - Look for visible severe wasting - Determine weight -for- Length (W/L) - For bilateral Pitting edema of the feet	- W/L < -3Z score, OR - Edema of both feet, OR - Visible severe wasting, OR - Evidence of Feeding Difficulty, or - Weight loss, or - Failure to gain weight	SEVERE ACUTE MALNUTRITION (FAILURE TO THRIVE)	- If Health Facility has stabilization center (SC), admit to SC - If the health facility does not have SC - Give first dose of IM Ampicillin & Gentamicin - Treat the child to prevent Low Blood Sugar - Advise Mother/ Caregiver on the need for urgent referral - Refer Urgently to Hospital
		- WFL $\geq$ -3Z to < -2Z score - No edema of both feet	MODERATE ACUTE MALNUTRITION (FAILURE TO THRIVE)	- Assess feeding and advise the mother on exclusive breastfeeding /caregiver on adequate formula feed - Assess for HIV & TB infections - Follow up in 5 days if there is feeding problem - Follow up in 30 days if feeding well - Refer urgently if not improving
		- WFL $\geq$ -2Z score AND - No edema of both feet	NO ACUTE MALNUTRITION	- Assess feeding and advise the Mother on exclusive breastfeeding - If safe effectively breastfeeding / formula feeding, praise the Mother/Caregiver - Follow up in 30 days to monitor growth

Assess and Classify every sick child from 6-59 months for acute malnutrition

FOR CHILDREN AGE 6-59 MONTHS

Look and FEEL:

- Measure and determine W/L/H Z-score (**<-3, -3 to -2, ≥-2**)
- Look for pitting edema of both feet (+, ++, +++)
- Determine if MUAC (<11.5 cm, 11.5-12.5 cm, ≥ 12.5 cm)

If the child has:

- W/L/H<-3, or +/++ edema, or MUAC<11.5, and
- No severe wasting with edema
- **LOOK FOR MEDICAL COMPLICATIONS**

If the child has:

- W/L/H<-3, or +/++ edema, or MUAC<11.5, and
- No severe wasting with edema, and
- No medical complication
- **DO APPETITE TEST (PASSED/FAILED)**

SIGNS	Classify as:
• WFL/H < -3Z or • MUAC <11.5 cm or • Edema of both feet (+, ++), AND: - Medical complications, or - Failed Appetite test • +++ Edema OR • Severe wasting with oedema (WFL/H < -3Z with oedema or MUAC <11.5 cm with oedema) (MUAC of < 12 for HIV +/TB+)	COMPLICATED SEVERE ACUTE MALNUTRITION
Medical Complication With • WFL/H between -3Z & -2Z AND/OR MUAC between 11.5 to 12.5 cm (MUAC between 12 and 13 for HIV +/TB+)	COMPLICATED MODERATE ACUTE MALNUTRITION
• WFL/H < -3Z or • MUAC <11.5 cm (MUAC of < 12 for HIV +/TB+) or • Edema of both feet (+, ++), AND: - No medical complications, and - Pass Appetite test	UNCOMPLICATED SEVERE ACUTE MALNUTRITION
• WFL/H between -3Z & -2Z MUAC between 11.5 to 12.5 cm MUAC between 12 and 13 for HIV +/TB+) • NO Edema of both feet	UNCOMPLICATED MODERATE ACUTE MALNUTRITION
• WFL/H ≥ -2 Z or • MUAC ≥12.5 cm and • NO Edema of both feet	NO MALNUTRITION

6.2.2 Identifying Treatment and treat the child with acute Malnutrition

See the chart below:

CLASSIFY AS:	IDENTIFY TREATMENT
COMPLICATED SEVERE ACUTE MALNUTRITION	If HF has stabilization center (SC), admit to SC for inpatient care If the HF don't have SC: Give first dose of IM Ampicillin & Gentamicin
COMPLICATED MODERATE ACUTE MALNUTRITION	Treat the child to prevent Low Blood Sugar Advise Mother/Caregiver on the need of referral and Refer Urgently to Hospital
UNCOMPLICATED SEVERE ACUTE MALNUTRITION	If OTP is available, admit child to OTP and follow standard OTP treatment and care Counsel the Mother/Caregiver on how to feed her child with RUFT, and give her enough for 1 week, if available
UNCOMPLICATED MODERATE ACUTE MALNUTRITION	Assess the feeding practices and counsel the Mother/Caregiver on feeding Give Mebendazole (if child aged 1 year and above) Give oral amoxicillin for 5 days Check for HIV Assess for TB infection Follow-up in 7 days Advise the Mother/Caregiver when to come back Refer all < 6 months who are not gaining weight If No OTP, Refer child to OTP service/Hospital
NO MALNUTRITION	Assess the feeding practices and counsel on feeding Check for HIV Follow-up in 14 days Advise the Mother/Caregiver when to come back

OTP- Outpatient Therapeutic Program,

COMPLICATED SEVERE ACUTE MALNUTRITION (SAM):

Children classified as having COMPLICATED SEVERE ACUTE MALNUTRITION are at high risk of death from the acute complication of SAM including hypoglycemia, infection, hypothermia etc.. They are also at risk of death from pneumonia, diarrhea, measles, and other severe diseases. These children need emergency treatment and urgent referral to hospital, or a Stabilization Centre (SC) or Nutrition rehabilitation Unit (NRU) where their treatment can be initiated and carefully

monitored. They may need special feeding, antibiotics or blood transfusions. Before the child leaves for hospital, treat the child to prevent low blood sugar and keep warm if hypothermic. Children **six months and under** are more likely to have other serious conditions causing their SAM. They need emergency stabilization and urgent referral to a hospital for detailed evaluation.

UNCOMPLICATED SEVERE ACUTE MALNUTRITION

Children classified as having UNCOMPLICATED SEVERE ACUTE MALNUTRITION are at risk of death from pneumonia, diarrhoea, measles, and other severe diseases.

These children need urgent treatment based RUTF, deworming and oral amoxicillin.

Counsel the Mother/Caregiver on how to feed the child with RUTF.

Also assess child's breastfeeding and feeding pattern, and counsel the Mother/Caregiver on feeding

Quantities to be given in relation to the child's weight are listed below:

Weight of the Child (kg)	Packets per Week	Packets per Day
3.5 - 3.9	11	1.5
4.0 - 4.9	14	2
5.0 - 6.9	18	2.5
7.0 - 8.4	21	3
8.5 - 9.4	25	3.5
9.5 - 10.4	28	4
10.5 - 11.9	32	4.5
>12	35	5

* Note: quantities should be adjusted if RUTF is available in containers or in packaging with different weights.

The key messages for the Mother/Caregiver when giving RUTF are the following:

- RUTF is a special therapeutic food for thin children only. It should not be shared
- RUTF is the only food that thin children need for their recovery
- For young children less than 2 years old, continue to put the child to the breast
- Always give plenty of clean water to drink when giving RUTF
- Wash hands if possible before feeding the child.

Advise the Mother/Caregiver to return immediately for reassessment if the child does not eat RUTF.

A child with UNCOMPLICATED SEVERE ACUTE MALNUTRITION should return for follow-up after 1 week.

Children **six months and under** should be referred to a hospital if not improving on follow-up.

NOT ACUTE MALNUTRITION

For a child 59 months and below, assess the time, quality, quality of the feeds given the child.

If the child is less than 2 years of age, assess the child's breastfeeding and feeding patterns and counsel Mother / Caregiver using the COUNSEL THE MOTHER/ CAREGIVER chart.

CONDUCT A FOLLOW-UP VISIT FOR FEEDING PROBLEM

When a child who had a feeding problem returns for follow-up in 5 days, follow these instructions:

- Reassess feeding and ask about improvement of any feeding problem identified on the initial visit. For example, if on the last visit more active feeding was recommended, ask the mother/ caregiver to describe how and by whom the child is fed at each meal.
- Counsel the mother about any new or continuing feeding problems and determine a way forward.
- If you counsel the mother to make significant changes in feeding, ask her to bring the child back again in 14 days
- Plot the weight on the growth monitoring chart.

Example: On the initial visit the mother of a 2-month-old infant said that she was giving the infant 2 or 3 bottles of milk and breastfeeding several times each day. The health worker advised the mother to give more frequent, longer breastfeeds and gradually reduce other milk or foods. At the follow-up visit, the health worker asks the mother questions to find out how often she is giving the other feeds and for how long she is breastfeeding. The mother says that she now gives the infant only 1 bottle of milk each day and breastfeeds 6 or more times in 24 hours. The health worker tells the mother that she is doing well. The health worker then asks the mother to completely stop the other milk and breastfeed 8 or more times in 24 hours. Since this is a significant change in feeding, the health worker also asks the mother to come back again. At that visit the health worker will check that the infant is feeding frequently enough and encourage the mother.

6.2.3 CONDUCT A FOLLOW-UP VISIT FOR VERY LOW WEIGHT or Acute Malnutrition

A child who was classified with VERY LOW WEIGHT should return for follow-up after 30 days. (The child would also return earlier if there was a feeding problem.). An infant < 6 months should come for follow-up in 14 days.

Some clinics already have specially scheduled sessions for nutritional counseling, and mothers of malnourished children are asked to come for follow-up at this time.

Follow these instructions for a follow-up visit for a child with VERY LOW WEIGHT:

➤ VERY LOW WEIGHT, MAM (Moderate Acute Malnutrition)

After 14 days:

Weigh the child and determine if the child is still very low weight for age.

Measure MUAC if children older than 6 months

Reassess feeding (breastfeeding or complementary feeds).

➤ If the child is ***no longer very low weight for age***, praise the mother and counsel her on feeding the child depending on the age. Recommend her to come to the well-baby visits

➤ If the child is still ***very low weight for age or having MAM***, counsel the mother about

any feeding problem found. Encourage her to feed one extra bowl of diversified food every day. Ask the mother to return again in 14 days.

- Continue to see the child every 14 days until the child is feeding well and gaining weight regularly or is no longer very low weight for age.

Exception: If you do not think that feeding will improve, or if the child has *lost weight*, urgently refer the child, there could be an underlying cause.

- SAM (Severe Acute Malnutrition)

After 7 days:

Measure W for H/L, MUAC and re-assess the child

- If the child is following his/her treatment and feeding with RUTF
- Conduct an appetite test if child has not improved and refer as needed
- Praise the mother if the child is doing well and counsel on feeding practices

- If the child is still **very low weight for age or MUAC between 11.5 and 12 cm**, counsel the mother/caretaker about: any feeding problem and suggesting solutions, the foods appropriate for his age, frequency of feeding, how to feed him actively.

Ask the mother/caretaker to bring the child back again in 14 days, and see the child every month to advise and encourage the mother/caretaker until he is feeding well and gaining weight regularly.

If the child is continuing to lose weight and no change in feeding seems likely (failed appetite test on repeat), refer the child to hospital.



Exercise

Read the following case studies. Record the child's signs and their classifications on the Recording Form. Refer to the classification tables on the chart.

Case 1: Jumah

Jumah is 18 months old. She weighs 6 kg and has a length of 75cm. Her temperature is 38.5°C. Her Mother/Caregiver brought her today because the child has felt hot and has a rash. The health worker saw that Jumah looks like skin and bones. Her MUAC is less than 11.5 cm (red part of the tape).

The health worker checked for general danger signs. Jumah is able to drink, has not vomited, has not had convulsions, and is not lethargic or unconscious.

She does not have cough or difficult breathing. She does not have diarrhoea. When offered RUTF, she takes only small amounts and fails the appetite test.

Because Jumah's Mother/Caregiver said the child felt hot, and because her temperature is 38.5°C, the health worker assessed her for fever. She has had fever for 5 days. Her rash is generalized rash, and she has red eyes. She has measles. She does not have a stiff neck. She does not have a runny nose.

The health worker assessed her for signs of measles complications. Jumah does not have mouth ulcers. There is no pus draining from the eye and no clouding of the cornea. Jumah does not have an ear problem.

The health worker next checked her for malnutrition or anemia. Jumah has visible severe wasting. There is no palmar pallor. She does not have oedema of both feet. The health worker determined her weight for length. (Look at the weight for length chart in your chart booklet. Determine if this child's weight for length is severely wasted and record this on the Recording Form.

Record Jumah's signs and classify them on the **Recording Form**.

Case 2: Toe

Toe is 37 months old. He weighs 14 kg. His temperature is 37.0°C. He has been crying and rubbing his ear.

The health worker checks Toe for general danger signs. He is able to drink, does not vomit everything he drinks, has not had convulsions and is not lethargic or unconscious. He does not have cough or diarrhoea.

The health worker asks if Toe has an ear problem. The Mother/Caregiver says he has had ear pain. She also says she has seen ear discharge for about 5 days. The health worker sees pus draining from the ear. He does not feel any tender swelling behind either ear.

He then checks the child for malnutrition and anaemia. Toe looks thin and his MUAC is below 13cm (green). His palm appears slightly pale.

He does not have oedema of both feet. The health worker determined his weight for length.

Record Toe's signs and classification on the Recording Form

MODULE 7: EAR PROBLEM

7.1 ASSESS AND CLASSIFY EAR PROBLEM

A child with an ear problem may have an ear infection.

When a child has an ear infection, pus collects behind the ear drum and causes pain and often fever. If the infection is not treated, the ear drum may burst. The pus discharges, and the child feels less pain. The fever and other symptoms may stop, but the child suffers from poor hearing because the ear drum has a hole in it. Usually the ear drum heals by itself. At other times the discharge continues, the ear drum does not heal, and the child becomes deaf in that ear.

Sometimes the infection can spread from the ear to the bone behind the ear (the mastoid) causing mastoiditis. Infection can also spread from the ear to the brain causing meningitis. These are severe diseases. They need urgent attention and referral.

Ear infections rarely cause death. However, they cause many days of illness in children. Ear infections are the main cause of deafness in developing countries, and deafness causes learning problems in school. The ASSESS & CLASSIFY chart helps you identify ear problems due to ear infection.

7.1.1 ASSESS EAR PROBLEM

A child with ear problems is assessed for:

- Ear pain
- Ear discharge and
- If discharge is present, how long the child has had discharge, and
- Tender swelling behind the ear, a sign of mastoiditis.

Here is the box from the "Assess" column that tells you how to assess a child for ear problem.

Does the child have an ear problem?

IF YES, ASK:

Is there ear pain?

(tragus) of the ear

Is there ear discharge?

If yes, for how long?

LOOK AND FEEL:

- Look for pus draining from the ear.
Look for the ear pain by pressing the anterior part
- Feel for tender swelling behind the ear.

Ask about ear problem in ALL sick children.

ASK: Does the child have an ear problem?

If the Mother/Caregiver/caretaker answers NO, record her answer. Do not assess the child for ear problem. Go to the next question and check for malnutrition and anemia.

If the Mother/Caregiver/caretaker answers YES, ask the next question:

ASK: Does the child have ear pain?

Ear pain can mean that the child has an ear infection. If the Mother/Caregiver/caretaker is not sure that the child has ear pain, ask if the child has been irritable and rubbing his ear.

ASK: Is there ear discharge? If yes, for how long?

Ear discharge is also a sign of infection.

When asking about ear discharge, use words the Mother/Caregiver understands.

If the child has had ear discharge, ask for how long. Give him/her time to answer the question. He/She may need to remember when the discharge started.

You will classify and treat the ear problem depending on how long the ear discharge has been present.

-An ear discharge that has been present for 2 weeks or more is treated as a chronic ear infection.

-An ear discharge that has been present for less than 2 weeks is treated as an acute ear infection.

You do not need more accurate information about how long the discharge has been present.

LOOK for pus draining from the ear.

Pus draining from the ear is a sign of infection, even if the child no longer has any pain. Look inside the child's ear to see if pus is draining from the ear.

FEEL for tender swelling behind the ear.

Feel behind both ears. Compare them and decide if there is tender swelling of the mastoid bone. In infants, the swelling may be above the ear.

Both tenderness and swelling must be present to classify mastoiditis, a deep infection in the mastoid bone. Do not confuse this swelling of the bone with swollen lymph nodes.



7.1.2 CLASSIFY EAR PROBLEM

There are four classifications for ear problem:

- MASTOIDITIS
- ACUTE EAR INFECTION
- CHRONIC EAR INFECTION
- NO EAR INFECTION

Here is the classification table for ear problem from the ASSESS & CLASSIFY chart.

ASSESS	CLASSIFY	IDENTIFY TREATMENT
• Tender swelling behind the ear	MASTOIDITIS	Give first dose of an appropriate antibiotic. Give first dose of paracetamol for pain. Advise on breastfeeding during illness. Refer URGENTLY to hospital.
• Pus is seen draining from the ear less than 14 days, or • Ear pain.	ACUTE EAR INFECTION	Give an antibiotic for 5 days. Give paracetamol for pain. Dry the ear by wicking Advise on breastfeeding & feeding during illness. Follow-up in 5 days.
• Pus is seen draining from the ear for 14 days or more	CHRONIC EAR INFECTION	Dry the ear by wicking Ciprofloxacin solution (0.2%) 3 drops 3x a day for 14 days. Advise on breastfeeding & feeding during illness. Asses for HIV infection. Follow-up in 5 days

• No ear pain and • No pus seen draining from the ear.	NO EAR INFECTION	No additional treatment Assess breastfeeding & feeding and counsel.
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7.2 IDENTIFY TREATMENT AND TREAT EAR INFECTION

MASTOIDITIS

If a child has tender swelling behind the ear, classify the child as having MASTOIDITIS.

Treatment

Refer urgently to hospital. This child needs treatment with injectable antibiotics. He may also need surgery. Before the child leaves for hospital, give the first dose of an appropriate antibiotic. Also give one dose of paracetamol if the child is in pain.

ACUTE EAR INFECTION

If you see pus draining from the ear and discharge has been present for less than two weeks, or if there is ear pain, classify the child's illness as ACUTE EAR INFECTION.

Treatment

Give a child with an ACUTE EAR INFECTION an appropriate antibiotic. Antibiotics for treating pneumonia are effective against the bacteria that cause most ear infections. Give paracetamol to relieve the ear pain (or high fever). If pus is draining from the ear, dry the ear by wicking.

Advise on breastfeeding & feeding during illness.

➤ Steps to Dry the Ear By Wicking

- Roll clean absorbent cotton cloth or strong tissue paper into a wick.
- Place the wick in the child's ear.
- Remove the wick when wet
- Replace the wick with a clean one and repeat these steps until the ear is dry

Observe the mother/caretaker as she practices. Give feedback when finished and give her the following information.

- * Wick the ear 3 times daily for 14 days
- * Use this treatment for as many days as it takes until the wick stays dry.
- * Do not place anything (oil, fluid, or other substance) in the ear between wicking treatments. Do not allow the child to go swimming. No water should get in the ear.

Ask checking questions; such as:

“What materials will you use to make the wick at home?”

“How many times per day will you dry the ear with a wick?”

“What else will you put in your child's ear?”

If the mother/caretaker thinks she will have problems wicking the ear, help solve them.

CHRONIC EAR INFECTION

If you see pus draining from the ear and discharge has been present for two weeks or more classify the child's illness as CHRONIC EAR INFECTION.

Treatment

Most bacteria that cause CHRONIC EAR INFECTION are different from those which cause acute ear infections. For this reason, oral antibiotics are not usually effective against chronic infections. Do not give repeated courses of antibiotics for a draining ear.

The most important and effective treatment for CHRONIC EAR INFECTION is to keep the ear dry by wicking. Teach the Mother/Caregiver/caretaker how to dry the ear by wicking as shown above.

Advise on breastfeeding & feeding during illness.

NO EAR INFECTION

If there is no ear pain and no pus is seen draining from the ear, the child's illness is classified as NO EAR INFECTION. The child needs no additional treatment.

Assess breastfeeding & feeding and counsel.

7.3 CONDUCT A FOLLOW-UP VISIT FOR EAR INFECTION

When a child classified as EAR INFECTION returns for a follow-up visit after 5 days, follow the instructions below. These instructions apply to an acute or a chronic ear infection.

EAR INFECTION

After 5 days:

Reassess for ear problem. * *See ASSESS & CLASSIFY chart.*

Measure the child's temperature.

Treatment:

- If there is **tender swelling behind the ear or high fever (38.5°C or above)**, refer URGENTLY to hospital.
- **Acute ear infection:** if **ear pain or discharge** persists, treat with 5 more days of the same antibiotic. Continue wicking to dry the ear. Follow-up in 5 days.
- **Chronic ear infection:** Check that the mother/care taker is wicking the ear correctly. Encourage him/ her to continue.
- If **no ear pain or discharge**, praise the mother/caretaker for her careful treatment. If he/ she has not yet finished the 5 days of antibiotic, tell him/ her to use all of it before stopping.



Exercise

These two case studies describe children who have ear problems. Record each child's signs and their classifications on the part of the Recording Form for ear problem. Look at the wall chart or in your chart booklet for help classifying signs.

Case 1: Martha

Martha is 3 years old. She weighs 13 kg. Her temperature is 37.5°C. Her Mother/Caregiver came to the clinic today because Martha has felt hot for the last 2 days. She was crying last night and complained that her ear is hurting.

The health worker checked and found no general danger signs.

Martha does not have cough or difficult breathing. She does not have diarrhoea. Her malaria risk is high. Her fever was classified as **MALARIA**.

Next the health worker asked about Martha's ear problem. The Mother/Caregiver said she is sure Martha has ear pain. The child cried most of the night because her ear hurt. There has been discharge coming from Martha's ear on and off for about a year, said the Mother/Caregiver. The health worker did not see any pus draining from the child's ear. He felt behind the child's ears and felt tender swelling behind one ear.

Record Martha's signs of ear problem and classify them on the Recording Form.

MODULE 8: HIV INFECTION & TUBERCULOSIS

8.1 CHECK FOR HIV EXPOSURE AND INFECTION IN CHILDREN

HIV infection in children less than 5 years is almost always acquired through Mother-to-child transmission (MTCT). Transmission may occur during pregnancy, labour and delivery or through breastfeeding.

In young children, HIV multiplies rapidly and causes early and severe weakening of the immune system, increasing vulnerability to infections such as pneumonia, diarrhoea, tuberculosis, and sepsis.

Children under 5 years progress to severe HIV disease much faster than adults. Without treatment, up to half of HIV-infected infants may die before their second birthday.

WHO considers all HIV-positive children less than 5 years as having Advanced HIV Disease (AHD), regardless of CD4 cell count. This ensures early initiation of treatment and prevention of opportunistic infections.

Diagnosis of HIV in Children under 5 Years differs as maternal antibodies cross the placenta; and hence, HIV antibody tests cannot diagnose infants under 12 months.

Early diagnosis is essential as disease progresses rapidly and immediate initiation of ART:

- Reduces mortality
- Prevents opportunistic infections
- Improves growth and development
- Achieves viral suppression

Always check ALL sick children for HIV infection to identify those who are born from HIV positive Mother/Caregivers so that they could be followed up regularly and managed appropriately.

8.1.1 CHECK FOR HIV EXPOSURE AND INFECTION, IN CHILDREN 6 WEEKS < 2 YEARS

The assessment and classification of HIV infection in young children is based on HIV test results.

ASK: Ask the Mother/Caregiver

- Has the mother/caregiver had an HIV test- positive/Negative?
- Is the HIV status of the mother unknown?
- Was the mother tested for HIV during pregnancy or breastfeeding?
- Did the mother receive ART during pregnancy and breastfeeding?
- Was the baby given ARV prophylaxis after birth?
- Is the child currently breastfeeding?
- If breastfeeding:
 - Is the mother on ART?
 - Any breastfeeding interruptions, mixed feeding, or breast problems

Look and Feel:

Examine the child for:

- Oral thrush
- Severe pneumonia
- Very Severe Disease

CLASSIFY CHILDREN 6 weeks - < 24 MONTHS FOR HIV EXPOSURE AND INFECTION:

ASK: • What is the HIV status of the Mother? ○ Positive/Negative/Unknown • What is the HIV antibody test result of the sick child? ○ Positive/Negative/Unknown • What is the DNA PCR test result of the sick child? ○ Positive/Negative/Unknown • Is child on breastfeeding? ○ Yes ○ No • If no, was the child breastfed in the last 6 weeks? ○ Yes ○ No	SIGN	CLASSIFY AS:	TREATMENT
	▪ Any age: Child DNA PCR positive OR ▪ If child is > 12 months with HIV antibody positive	HIV INFECTED	▪ Give Cotrimoxazole prophylaxis ▪ Assess feeding and counsel on nutrition ▪ Assess for TB infection ▪ Ensure Mother is tested & enrolled in HIV care & Rx ▪ Advise on home care ▪ Refer/Link to ART clinic for ART initiation and other components of care
	▪ If < 12 months and DNA PCR isn't available, AND – Child antibody is positive, AND – Two of the following Suggestive of PSHD.	PRESUMPTIVE SEVERE HIV DISEASE	▪ As above
	▪ Mother positive, and child Antibody or DNA PCR negative, and breastfeeding, OR ▪ Mother positive, and child antibody & DNA PCR unknown, OR ▪ Child < 12 month with antibody positive	HIV EXPOSED	▪ Give Co-trimoxazole prophylaxis ▪ Assess feeding and counsel ▪ Assess for TB infection ▪ If child DNA PCR is unknown, test as soon as possible ▪ Ensure both Mother and baby are enrolled in follow up at ANC/PMTCT clinic ▪ Ensure provisions of other components of care
	▪ Mother and child not tested	HIV STATUS UNKNOWN	▪ Counsel the Mother for HIV testing for herself & the child ▪ Test the child if Mother is not available (E.g. orphan) ▪ Advise the Mother/Caregiver to give home care ▪ Assess feeding and counsel
○ If DNA PCR isn't available, AND ○ Child antibody is positive, AND ❖ Two of the following : - Oral thrush - Severe pneumonia or - Severe Sepsis OR ❖ At least one of: - Severe unexplained wasting / malnutrition not responding to treatment - Pneumocystis pneumonia - Candidiasis of esophagus, trachea, bronchi or lungs - Cryptococcal meningitis - Toxoplasmosis of the brain (from age 1 month ➤ Consider “PRESUMPTIVE SEVERE HIV DISEASE”. (PSHD)	• Mother negative, OR • Mother positive, and child DNA PCR negative, and not breastfeeding, OR • Mother HIV status unknown, and child	HIV INFECTION UNLIKELY	▪ Advise on home care ▪ Assess feeding and counsel ▪ Advise on HIV prevention ▪ If Mother HIV status is unknown, encourage Mother/Caregiver to be tested

CHECK FOR HIV EXPOSURE AND INFECTION, IN CHILDREN 24-59 MONTHS

CHECK FOR HIV EXPOSURE AND INFECTION, IN CHILDREN 18-59 MONTHS

ASK:

- What is the HIV status of the Mother/Caregiver?
 - Positive
 - Negative
 - Unknown
- What is the HIV antibody test result of the sick child?
 - Positive
 - Negative
 - Unknown
- Is child on breastfeeding?
 - Yes
 - No
- If no, was the child breastfed in the last 6 weeks?
 - Yes
 - No

Classify

SIGN	CLASSIFY AS:	TREATMENT
▪ Child antibody positive	HIV INFECTED	○ Give cotrimoxazole prophylaxis ○ Assess feeding and counsel ○ Advise on home care ○ Refer/link to ART clinic for ARV initiation & other components of care ○ Ensure Mother/Caregiver is tested & enrolled in HIV care & treatment
▪ Mother positive, AND ▪ Child antibody negative or unknown, and breastfeeding	HIV EXPOSED	○ Give Cotrimoxazole prophylaxis ○ Assess feeding and counsel ○ Assess for TB infection ○ If child antibody test is unknown, test as soon as possible ○ If child antibody test is negative, repeat 6 weeks after complete cessation of breastfeeding ○ Ensure both Mother/Caregiver and baby are enrolled at ANC/PMTCT clinic ○ Ensure provisions of other components of care
▪ Mother and child not tested	HIV STATUS UNKNOWN	○ Counsel the Mother for HIV testing for herself and the child ○ Test the child if Mother is not available (Eg orphan) ○ Advise the Mother/Caregiver to give home care ○ Assess feeding and counsel
▪ Mother negative and child not known	HIV INFECTION UNLIKELY	○ Advise on home care ○ Assess feeding and counsel ○ Advise on HIV prevention ○ If possible, do HIV antibody test for the sick child
▪ Child antibody negative at least 6 weeks after complete cessation of breastfeeding	HIV UNINFECTED	○ Advise on home care ○ Assess feeding and counsel ○ Advise on HIV prevention

8.1.3 TREATMENT HIV EXPOSURE AND INFECTION, IN CHILDREN FROM 2-59 MONTHS

HIV INFECTED/PRESUMPTIVE SEVERE HIV DISEASE:

For a sick child classified as HIV INFECTED OR PRESUMPTIVE SEVERE HIV DISEASE: (See your chart booklet for details)

- Start the child on Co-trimoxazole prophylaxis as soon as possible as it protects the child from PCP pneumonia, diarrhea, malaria, and some HIV-related diseases, and thereby prolongs survival.
- Assess for any feeding problem and counsel the Mother/Caregiver/caregiver on feeding
- Assess for possible TB infection
- Ensure that the Mother/Caregiver is tested for HIV & enrolled in HIV care & Rx
- Refer/Link the sick child to ART clinic for ART initiation and other components of care
- Ensure that the child has appropriate follow up

HIV EXPOSED

For a sick child classified as HIV EXPOSED:

- Start the child on Co-trimoxazole prophylaxis as soon as possible as it protects the child from pneumonia, diarrheal diseases, malaria, and others
- Assess for any feeding problem and counsel the Mother/Caregiver on feeding
- Assess for possible TB infection
- If child DNA PCR is unknown, test as soon as possible
- Ensure both Mother/Caregiver and baby are enrolled in follow up at ANC/PMTCT clinic
- Ensure provisions of other components of care

HIV STATUS UNKNOWN

- Counsel the Mother/Caregiver for HIV testing for herself & the child and test the child if Mother/Caregiver is not available (Eg orphan)
- Advise the Mother/Caregiver to give home care
- Assess for any feeding problem and counsel the Mother/Caregiver/caregiver on feeding

HIV INFECTION UNLIKELY

- Advise the Mother/Caregiver/caregiver on home care
- Assess feeding and counsel
- Advise on continued HIV prevention
- If Mother/Caregiver HIV status is unknown, encourage Mother/Caregiver to be tested

8.2 CHECK THE SICK CHILD FOR TUBERCULOSIS

Tuberculosis is a common problem in Liberia; assess all malnourished children for risk of tuberculosis. A child with tuberculosis (TB) may have had contact with an adult or another person who has TB disease.

Tuberculosis is a chronic infection caused by *Mycobacterium tuberculosis*. It most commonly affects the lungs, but in children, it can also affect other parts of the body such as the lymph nodes, bones, joints, and the brain. Children usually develop TB after breathing in germs from a person with infectious pulmonary TB.

When a child is infected, the body's defenses may control the infection without signs of illness, known as latent TB infection. However, in young children and those with weakened immunity, especially those with malnutrition or HIV, the infection can progress to active disease. The child may develop a persistent cough, fever, weight loss, or failure to thrive.

If tuberculosis is not recognized and treated early, it can lead to severe disease such as TB meningitis or disseminated TB, which are life-threatening. Untreated TB can also spread to others in the household and community.

Although childhood TB is rarely fatal when detected early, it remains an important cause of illness and growth failure. Proper assessment and classification helps identify children who need further investigation, preventive therapy, or full treatment. Early detection and treatment prevent complications and reduce transmission.

The ASSESS, CLASSIFY AND IDENTIFY TREATMENT chart helps you recognize children who may have tuberculosis and guides you in deciding the appropriate management or referral.

8.2.1 ASSESS FOR TUBERCULOSIS

ASK :

Has the child had contact with someone with tuberculosis?

Has the child had cough for 2 weeks or more?

Has the child had fever for 2 weeks or more?

Has the child had weight loss or failure to thrive?

Does the child have night sweats or fatigue?

Is there any known HIV infection or immunosuppression condition?

LOOK AND FEEL

Look for signs of malnutrition (any Yellow or Red category).

Look for enlarged lymph nodes in the neck or armpit.

Look for spinal deformity, swelling, or bone tenderness.

Check for chronic ear discharge, abdominal distension, or joint swelling suggestive of extrapulmonary TB.

Check the growth chart for poor weight gain.

(Child on anti-TB drugs should not be assessed)

ASK Ask the following screening questions: • Has the child been in contact with a PTBBC*+ case? • Does the child have cough for 14 days or more? • Does the child have fever for 14 days or more? Has the child had weight loss or failure to thrive? • Does the child have night sweats or fatigue? • Is there any known HIV infection or immunosuppression condition?	Look and Feel • Look for Malnutrition (any yellow or red category) Check the growth chart for poor weight gain. • Check for enlarged lymph nodes > 2 cm • Check for mass (knot on the back) along the spinal column Classify for Tuberculosis risk
*PTBBC+ : pulmonary TB bacteriologically confirmed A close TB contact with an adult who has had pulmonary TB bacteriologically confirmed who lives in the same household as the child, or some-one with whom the child is in close contact or in contact for extended periods	

8.2.2 Classify for the Risk of TB

Classify into two groups: high risk of TB or low risk. This is to help you decide if you need to do further examination of the patient or not.

Affirmative answer to one or more screening questions	HIGH RISK OF TB	Perform full Tuberculosis assessment
No affirmative answer to any of screening questions	LOW RISK OF TB	No full Tuberculosis assessment

Perform full TB assessment for any child classified «high risk of TB »

CHECK FOR THE FOLLOWING ELEMENTS IN FAVOUR OF TUBERCULOSIS: • Cough for 14 days or more despite antibiotics dispensed for 5 days • Fever for 14 days or more despite antibiotics dispensed for 5 days, negative blood smear with negative assessment for other infectious diseases including urinary infection. • Check for enlarged lymph nodes > 2 cm • Check for mass (knot on the back) along the spinal column *TST- Tuberculin Skin Test or Mantoux test	DO • Microscopy (AFB) • GeneXpert or culture if available • Chest X-Ray if available • TST* if available • HIV test if not done	Classify for Tuberculosis
--	--	----------------------------------

Positive microscopy OR Positive culture or positive Gene Expert	PULMONARY TUBERCULOSIS BACTERIOLOGICALLY CONFIRMED	Treat other classifications Refer to the next level facility with TB treatment for management
One or more features of TB present and positive TST OR One or more features of TB present and with at least two of the following features: • History of contact of pulmonary TB bacteriologically confirmed, • HIV Positive, • Severe malnutrition OR One or more features of TB present with Chest X-ray suggesting TB	TB CLINICALLY DIAGNOSED	Treat other classifications Refer to next level TB/HIV for management
A close contact of pulmonary TB bacteriologically confirmed with no features of Tuberculosis	TB EXPOSED	Treat other classifications Refer to next level TB/HIV for INH

No close contact of pulmonary TB bacteriologically confirmed but with one of the features of Tuberculosis	POSSIBLE TUBERCULOSIS	Treat other classifications Refer to hospital for investigations
No close contact of pulmonary TB bacteriologically confirmed and no features of Tuberculosis	TUBERCULOSIS UNLIKELY	Treat other classifications No specific interventions for Tuberculosis

8.2.3 DO FULL TB ASSESSMENT TO IDENTIFY TREATMENT, TREAT, FOLLOW-UP AND COUNSEL A CHILD WHO IS AT RISK OF TB

If High Risk of Tuberculosis (TB) do a full TB assessment

In this case, ASK, and DO test if available to classify Tuberculosis.

1. PULMONARY TUBERCULOSIS BACTERIOLOGICALLY CONFIRMED ASSESS

All patients who are initially classify as High Risk of TB should do the following tests where available:

- Microscopy (AFB) on sputum if available or on gastric aspirate
- GeneXpert or culture can be done on different types of specimen based on laboratory capacity
- Chest X-ray
- TST
- HIV test

A child is classified here when:

- Microscopy is positive, OR
- Culture/GeneXpert is positive for TB.

CLASSIFY

Pulmonary Tuberculosis Bacteriologically Confirmed

IDENTIFY TREATMENT

- This classification confirms active TB disease requiring full anti-TB treatment.
- Treat all other classifications on the chart as needed (malnutrition, HIV, pneumonia, etc.).
- Refer immediately to the nearest facility with TB treatment services for initiation and monitoring of therapy.
- Ensure HIV testing is completed before referral.

COUNSEL THE MOTHER/CAREGIVER / CARETAKER

- Explain that the test confirms TB and the child needs specialized TB treatment.
- Emphasize the importance of early treatment to prevent severe disease or death.
- Discuss infection prevention at home (ventilation, covering mouth during coughing).
- Inform her that she needs to bring all other children under 5 years old to the specialized center for assessment.
- Encourage adherence to TB clinic appointments.

FOLLOW-UP

- Ensure the child is linked to TB services within 24–48 hours.
- Ask the caregiver to return immediately if child develops difficulty breathing, poor feeding, lethargy, or worsening symptoms.

2. TB CLINICALLY DIAGNOSED

ASSESS

Assess for:

- Cough $\geq$ 14 days
- Fever $\geq$ 14 days
- Poor weight gain
- Chest symptoms
- Failure to improve after antibiotics
- HIV exposure
- TB contacts
- Severe malnutrition
- Results of TST
- Chest X-ray findings

A child fits this classification when:

- One or more features of TB present and positive TST **OR**
- One or more features of TB present and with at least two of the following features
 - History of contact of pulmonary TB bacteriologically confirmed,
 - HIV Positive,
 - Severe malnutrition **OR**
- One or more features of TB present with Chest X-ray suggesting TB

CLASSIFY

TB Clinically Diagnosed

IDENTIFY TREATMENT

- Treat all other IMNCI classifications identified.
- Refer to a facility with TB/HIV Unit for evaluation and initiation of TB treatment.
- Ensure HIV testing if status is unknown.
- Begin nutritional rehabilitation if severely malnourished.

COUNSEL THE MOTHER/CAREGIVER / CARETAKER

- Explain that although a test was not positive, clinical signs strongly suggest TB.
- Stress that TB treatment is necessary and effective.
- Teach the caregiver how to give medicines daily and the need for long-term adherence.
- Explain the importance of HIV testing for both child and Mother/Caregiver if not done.

FOLLOW-UP

- Refer immediately for treatment initiation.
- Arrange 2–4 week follow-up to ensure referral was successful.

3. TB EXPOSED

ASSESS

Ask about household or close contact with a smear-positive or GeneXpert-positive TB case.

Assess for any symptoms of TB:

- Chronic cough
- Fever
- Weight loss
- Fatigue
- Lymph node enlargement
- Evaluate nutritional status.

If NO symptoms and contact is confirmed, classify as TB exposed.

CLASSIFY

TB Exposed

IDENTIFY TREATMENT

- Treat all other IMNCI conditions present.
- Refer to facility with TB/HIV Unit for evaluation and initiation of INH (Isoniazid Preventive Therapy) or appropriate preventive regimen.
- HIV testing should be done for all exposed children.

COUNSEL THE MOTHER/CAREGIVER / CARETAKER

- Explain that the child has been exposed to TB but does not have active disease.
- Emphasize the importance of preventive therapy to stop TB from developing.
- Teach infection prevention measures at home.
- Encourage the caregiver to complete preventive therapy even if child feels well.

FOLLOW-UP

- Follow up at 1 month after starting INH to check for adherence and side effects.
- Monthly visits during preventive therapy continuation.
- Review immediately if the child develops cough, fever, poor feeding, or weight loss.

4. POSSIBLE TUBERCULOSIS

ASSESS

Child that has NO close contact with bacteriologically confirmed pulmonary TB but has ONE features suggestive of TB such as:

- Cough $\geq$ 14 days despite antibiotic for 5 days
- Fever $\geq$ 14 days despite antibiotic for 5 days
- Weight loss/ Failure to thrive
- Multiple Lymph node swellings >2 cm in size
- Check of mass (knot) along the spinal cord (back) with no history of trauma

CLASSIFY

Possible Tuberculosis

IDENTIFY TREATMENT

- Treat any other identified IMNCI conditions.

- Refer to a facility with TB/HIV Unit for further investigations, including:
- GeneXpert
- Chest X-ray
- TST
- HIV test

Do NOT start TB treatment until investigations are completed unless instructed by a Doctor.

5. TUBERCULOSIS LESS UNLIKELY ASSESS

A child is placed here ONLY when:

- There is no close contact with bacteriologically confirmed TB AND
- NO features of TB.

CLASSIFY

Tuberculosis Less Unlikely

IDENTIFY TREATMENT

- Treat any other IMNCI classification found.
- No specific TB treatment or investigations needed.

COUNSEL THE MOTHER/CAREGIVER / CARETAKER

- Reassure that the child does not currently show signs of TB.
- Encourage general prevention: good nutrition, avoid smoke exposure, ensure windows are open at home.
- Explain when to return if symptoms develop.

FOLLOW-UP

- Routine follow-up based on other illnesses.
- Advise caregiver to return if cough lasts >14 days or fever persists.



Exercise

- **Case Scenario 1**

Sando is 4 years old. He weighs 14 kg. His temperature is 37.4°C. His Mother/Caregiver brings him because he has been coughing for 18 days and has not improved after receiving a 5-day course of antibiotics at a nearby clinic. He also gets tired easily and has reduced appetite. The health worker checks Sando for general danger signs. He is able to drink, has not had convulsions, does not vomit everything, and is not lethargic or unconscious. Sando has no diarrhoea. He has intermittent fever but no night sweats.

He has no known TB contact. A sputum sample was collected and sent for GeneXpert. The result is positive for *Mycobacterium tuberculosis*. No chest X-ray was done. The health worker checks him for malnutrition. Sando does not have oedema. His MUAC is 12.5 cm (yellow), and he has no palmar pallor. His appetite test is normal.

Record Sando's signs and their classification on the Recording Form on the next page.

Case Scenario 2

Kollie is 6 years old and weighs 17 kg. His temperature is 37.6°C. His father brings him because he has had cough for more than 2 weeks, low-grade fever, and gradual weight loss. There is no known TB contact in the family or neighborhood. The health worker checks for danger signs — none are present. Kollie is alert, able to drink, and has no convulsions. Kollie appears thin. His MUAC is 11.8 cm (yellow). He has mild cervical lymph node enlargement. He has no oedema, and his appetite test is normal. GeneXpert testing is not available, and the family cannot afford a chest X-ray immediately. Because he has one or more features of TB but no close contact with a bacteriologically confirmed pulmonary TB case, he meets criteria for possible TB. Record Sando's signs and their classification on the Recording Form below.

MODULE 9: Well child

(1. Growth monitoring and feeding/ 2. Monitoring child Development/ 3. Immunization and other preventive measure)

A **well child** is a child who presents for routine health care and does not have signs of illness. In IMNCI, well-child care focuses on promoting optimal growth, development, disease prevention, and early identification of health problems. The major components include:

1. **Growth Monitoring and Feeding**
2. **Monitoring Child Development**
3. **Immunization and Other Preventive Measures**

9.1 GROWTH MONITORING AND FEEDING

Growth monitoring is the regular assessment of a child's physical growth to ensure normal development and to detect malnutrition early. This is done in Module 1.4 and 6.2

9.2 MONITORING CHILD DEVELOPMENT

Early childhood is a critical window of opportunity. For children who experience disability, it is a vital time to ensure access to interventions which can help them reach their full potential. Systematic screening for vision, hearing (see Ear Problems section above), and mobility — integrated into routine health services children already access — enables early detection, timely referral, and management or provision of assistive technology before delays compound. Note that screening at the primary level is not often a final diagnosis; positive screening results require thorough assessment and confirmatory diagnosis by a trained provider (if there is capacity at the facility) or referred to a specialist.

Refer to the National Clinical Guidelines for Basic Eye Care in Liberia for details on management of various pediatric eye conditions.

Developmental Surveillance

At every well-child visit:

Ask the Caregiver

- Is the child achieving expected milestones?
- Any concerns about hearing or vision?

- Does the child play and interact normally?

Observe the Child

Assess:

- Movement
- Communication
- Social interaction
- Response to sounds and visual stimuli

Identify Developmental Red Flags

Examples:

- No social smile by 2 months
- Not sitting by 9 months
- Not walking by 18 months
- Loss of previously acquired skills
- No meaningful words by 18 months

Children with developmental concerns should be referred for further evaluation.

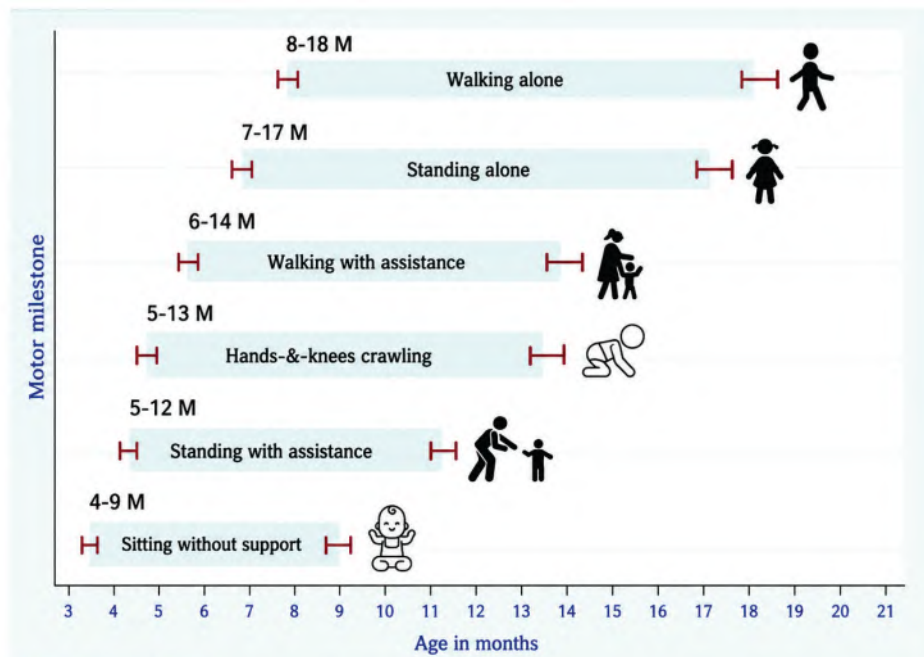
Mobility impairments in infants and children



Depending on the condition and its severity, mobility impairments may be managed medically, surgically, with physical therapy, and/or using assistive devices/AT.

Gross motor milestones for children under 2

Delays in meeting these milestones may be an early sign of an impairment that requires intervention.



Source: WHO - Windows of achievement for six gross motor development milestones

By being familiar with motor development milestones in infants and young children, you can routinely screen for developmental delays during routine services (e.g. Well Baby Clinics, Well Child Clinics, during immunization) and make early referrals for diagnosis and management. Specialists will conduct a thorough assessment of the child's movements and motor skills once they are referred, and provide appropriate management or assistive devices.

Promoting Early Childhood Development

Caregivers should be encouraged to:

- Talk and sing to the child.
- Read stories.
- Play interactive games.
- Provide safe opportunities for exploration.
- Show affection and positive attention.

These activities enhance brain development and learning.

9.2 CHECK THE CHILD'S IMMUNIZATION STATUS

Check the immunization status for ALL sick children. Have they received all the immunizations recommended for their age? Do they need any immunizations today?

USE A RECOMMENDED IMMUNIZATION SCHEDULE

Use the country's recommended immunization schedule when you check the child's immunization status. Look at the ASSESS & CLASSIFY chart and locate the recommended immunization schedule. Refer to it as you read how to check a child's immunization status.

IMMUNIZATION SCHEDULE	AGE	VACCINES						
	Birth	BCG	OPV0	HBV*				
	6 Weeks		OPV1		PENTA1	PCV1	ROTA1	
	10 Weeks		OPV2		PENTA2	PCV2	ROTA2	
	14 Weeks		OPV3		PENTA3	PCV3		IPV
*HBV should be given at birth, however, currently it is not yet included in the national EPI routine vaccine Schedule. Ask about it in a child whose mother is HBsg positive	9 Months	MCV1	TCV	YFV	Vit A			
	15 Months	MCV2						
		Malaria Vaccine						
		5 Month	6 Month	7 Month	15 Month			

Give the recommended vaccines when the child is the appropriate age for each dose. If the child receives an immunization when the child is too young, the child's body will not be able to fight the disease very well. Also, if the child does not receive an immunization as soon as he is old enough, the risk of getting the disease increases.

All children should receive all the recommended immunizations before their first birthday. If the child does not come for an immunization at the recommended age, give the necessary immunizations any time after the child reaches that age. Give the remaining doses at least 4 weeks apart. You do not need to repeat the whole schedule.

Messages given to parent and caregiver concerning vaccination

- What vaccine was given and the disease it prevents
- When and where to come for the next visit
- What minor adverse effect could occur and how to deal with them

If you immunize children with the appropriate vaccine at the appropriate time, you prevent measles, polio, diphtheria, pertussis, tetanus and tuberculosis. Check the immunizations status of every child you treat at your clinic, immunize, as needed.

Read the following points about preparing and giving immunizations:

- If the child is well enough to go home, give him/her any immunizations he/she needs before leaving the clinic.
- Use a sterile needle and a sterile syringe for each injection. This prevents transmission of HIV and the hepatitis virus.

- If only one child at the clinic needs an immunization, open a Vial of the vaccine and give him the needed immunization.
- Discard open vial of BCG and measles vaccines at the end of each immunization session.
- You keep open vials of OPV and Penta vaccines if:
 - They are fitted with rubber stoppers,
 - The expiry date has not been passed, and
 - The vaccines are clearly labeled and stored under proper cold chain conditions.
- The OPV and Penta vials may be used in later immunization sessions until the vial is empty.
- Do not give OPV0 to an infant who is more than 7 days old.
- Do not give BCG and YF to a child known to have AIDS or any form of immunosuppressant
- Do not give Penta 2 or Penta 3 to a child who has had convulsions or shock within 3 days of most recent dose.
- Do not give Penta to children with recurrent convulsion or another active neurological disease of central nervous system.
- Record all immunizations on a child's immunization card. Record the date you give each dose. Also keep a record of the child's immunization in the immunization register or the child's chart, depending on what you used at your clinic.
- Do not give malaria vaccine to child less than 5 months' old

If the child has diarrhea and needs OPV, give it to the child. Do not record the dose on the immunization record. Tell the Mother/Caregiver to return in 4 weeks for an extra dose of OPV.

When the child returns, for the repeat dose, consider it to be the one that was due at the time of diarrhea. Record the date when the repeat dose is given on the immunization card and in your clinic's immunization register.

9.2.1 CONTRAINDICATED OR NOT RECOMMENDED IN SEVERE IMMUNOSUPPRESSION

- BCG (Bacillus Calmette-Guérin): Contraindicated due to risk of disseminated BCG infection.
- Oral Polio Vaccine (OPV): Not recommended; inactivated polio vaccine (IPV) is preferred. Tell the Mother/Caregiver which immunization the child will receive today. Tell him/her about the possible side effects. Below is a brief description of side effects from each vaccine.
- BCG: a small red tender swelling then an ulcer appears at the place of immunization after about 2 weeks. The ulcer heals by itself and leaves small scar. Tell the Mother/Caregiver a small ulcer will occur and to leave the ulcer uncovered. If necessary, cover it with a dry dressing only.
- OPV: No side effects
- Penta: Fever, irritability, and soreness are possible side effects of Penta. They are usually not serious and need no special treatment. Fever means that the vaccine is working. Tell

the Mother/Caregiver if the child feels very hot or is in pain he/she should give paracetamol. He/she should not wrap the child up in more clothes than usual.

- Measles: fever and mild measles rash are possible side effect of the measles vaccine. A week after you give the vaccine, a child may have fever for 1-3 days. Fever means that the vaccine is working.
Tell the Mother/Caregiver to give paracetamol if the fever is high.
- Hepatitis B: fever is a possible side effect of the vaccine. Tell the Mother/Caregiver that if the child feels hot or is in pain he/she should give paracetamol.
- Yellow Fever: fever is a possible side effect. Tell the Mother/Caregiver that if the child feels very hot or is in pain he/she should give paracetamol.

Give all missed doses on this visit **ACCORDING TO THE CHECKUP CHART IN THE PREGNANT WOMEN AND CHILD HEALTH BOOK.**

Include sick infants unless being referred.

Advise the caretaker when to return for the next dose.

In all other situations, here is a good rule to follow:

There are no contraindications to immunization of a sick child if the Child is well enough to go home.

If a child is going to be referred, do not immunize the child before referral. The hospital staff at the referral site should make the decision about immunizing the child when the child is admitted. This will avoid delaying referral.

To decide if the child needs an immunization today:

LOOK at the child's age on the clinical record.

If you do not already know the child's age, ask about the child's age.

ASK the Mother/Caregiver if the child has an immunization card.

If the Mother/Caregiver answers YES, ask if he/she has brought the card to the clinic today.

- * If he/she has brought the card, ask to see it.
- * Compare the child's immunization record with the recommended immunization schedule. Decide whether the child has had all the immunizations recommended for the child's age.
- * On the Recording Form, check all immunizations the child has already received. Write the date of the immunization the child received most recently. Circle any immunizations the child needs today.
- * If the child is not being referred, explain to the Mother/Caregiver that the child needs to receive an immunization (or immunizations) today.

If the Mother/Caregiver does NOT have an immunization card:

- * Ask the Mother/Caregiver to tell you what immunizations the child has received.
- * Use your judgement to decide if the Mother/Caregiver has given a reliable report. If you have any doubt, immunize the child according to the child's age.
- * Give an immunization card to the Mother/Caregiver and ask to please bring it alone each time the child is brought to the clinic.

Check the child's Vitamin A supplementation record.

If the Mother/Caregiver has brought the card, check to see if the child has had Vitamin A in the last four months.

If there is no record, ask the Mother/Caregiver if the child received Vitamin A in the last four months.

If yes, do not give Vitamin A supplementation.

If not, give Vitamin A and record on the chart.

Vitamin A Supplementation Record		
6 months up to 12months	100,000 IU	Single dose
12 months up to 5 years	200,000 IU	Single dose

Check the child's de-worming status.

If the Mother/Caregiver has brought the card, check to see if the child has had Albendazole or Mebendazole in the last six months.

If there is no record, ask the Mother/Caregiver if the child received Albendazole or Mebendazole in the last six months.

If yes, do not give de-worming tablets.

If not, give de-worming tablets and record on the chart

De-worming Record (For children 12 months to 59 months)	Dosage	Fréquency	Schedule
Mebendazole	500mg	Single dose	Given every 6 months
Albendazole	400mg		

ASSESS OTHER PROBLEMS

Since the ASSESS & CLASSIFY chart does not address all a sick child's problems, you will now assess other problems the Mother/Caregiver told you about. For example, he/she may have said the child has a skin infection, itching or swollen neck glands. Or you may have observed another problem during the assessment. Identify and treat any other problems according to your training, experience and clinic policy. Refer the child for any other problem you cannot manage in clinic.

EXERCISE

Read about the following children. For each one, decide if the child needs any immunizations today.

Massa is 6 months old. No general danger signs. Classified AS COUGH OR COLD and NO ANAEMIA AND NO ACUTE MALNUTRITION.

Immunization history: BCG, OPV 0, OPV 1, OPV 2, Penta 1 and Penta 2.
OPV 2 and Penta 2 had given 6 weeks ago.

Is Massa up-to-date with his immunizations?

What immunizations, if any, does Massa need today?

When should she return for his next immunization?

