Students' Handbook for

IMNCI

Integrated Management of Neonatal and Childhood Illness

WORLD HEALTH ORGANIZATION
Country office for India

सत्यमेव जयते

Ministry of Health & Family Welfare
Government of India

2003

Contents

CHAPTER 1

INTEGRATED MANAGEMENT OF NEONATAL AND CHILDHOOD ILLNESS

1.1 THE INEQUITIES OF CHILD HEALTH

Over the last 3 decades the annual number of deaths among children less than 5 years of age has decreased by almost a third. However, this reduction has not been evenly distributed throughout the world. Every year more than 10 million children die in developing countries before they reach their fifth birthday. Seven in 10 of these deaths are due to acute respiratory infections (mostly pneumonia), diarrhoea, measles, malaria, or malnutrition - and often to a combination of these illnesses[1] (Figure 1).

In India, common illnesses in children under 3 years of age include fever (27%), acute respiratory infections (17%), diarrhoea (13%) and malnutrition (43%) – and often in combination (National Family Health Survey[2]. Infant Mortality Rate continues to be high at 68/1000 live births and Under Five Mortality Rate at 95/1000 live births per year. Neonatal mortality contributes to over 64% of infant deaths and most of these deaths occur during the first week of life. Mortality rate in the second month of life is also higher than at later ages. Any health program that aims at reducing Infant Mortality Rate needs to address mortality in the first two months of life, particularly in the first week of life.

Projections based on the 1996 analysis[3] indicate that common childhood illnesses will continue to be major contributors to child deaths through the year 2020 unless greater efforts are made to control them. This assumption makes a strong case for introducing new strategies to significantly reduce child mortality and improve child health and development..

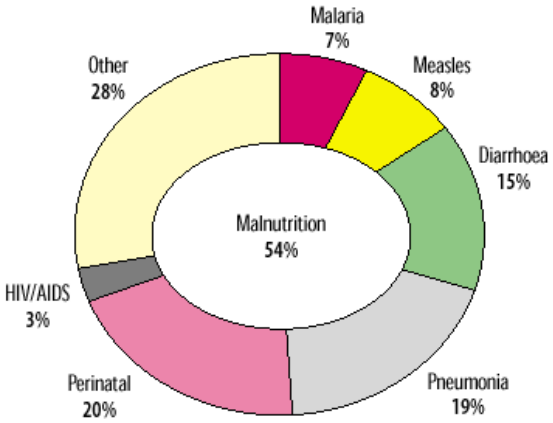


Figure 1. Distribution of 10.5 Million Deaths Among Children Less Than 5 Years Old in All Developing Countries, 1999

Infant and childhood mortality are sensitive indicators of inequity and poverty. It is no surprise to find that the children who are most commonly and severely ill, who are malnourished and who are most likely to die of their illness belong to the most vulnerable and underprivileged populations of low-income countries.

Quality of care is another important indicator of inequities in child health. Every day, millions of parents seek health care for their sick children, taking them to hospitals, health

[1] World Health Organization. *World Health Report 1999 making a difference*. Geneva, WHO, 1999.

[3] Murray CJL and Lopez AD. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases injures, and risk factors in 1990 and projected to 2020.* Geneva, World Health Organization, 1996.

centres, pharmacists, doctors, and traditional healers. Surveys reveal that many sick children are not properly assessed and treated by these health providers, and that their parents are poorly advised.[4] At first-level health facilities in low-income countries, diagnostic supports such as radiology and laboratory services are minimal or non-existent, and drugs and equipment are often scarce. Limited supplies and equipment, combined with an irregular flow of patients, leave doctors at this level with few opportunities to practise complicated clinical procedures. Instead, they often rely on history and clinical signs to determine a course of management that makes the best use of available resources.

Providing quality care to sick children in these conditions is a serious challenge. Yet how can this situation be improved? Experience and scientific evidence show that improvements in child health are not necessarily dependent on the use of sophisticated and expensive technologies, but rather on effective strategies that are based on a holistic approach, are available to the majority of those in need, and which take into account the capacity and structure of health systems, as well as traditions and beliefs in the community.

Improvements in child health are not necessarily dependent on the use of sophisticated and expensive technologies.

1.2 RATIONALE FOR AN INTEGRATED EVIDENCE-BASED SYNDROMIC APPROACH TO CASE MANAGEMENT

Many well-known prevention and treatment strategies have already proven effective for saving young lives. Childhood vaccinations have successfully reduced deaths due to measles. Oral rehydration therapy has contributed to a major reduction in diarrhoea deaths. Effective antibiotics have saved millions of children with pneumonia. Prompt treatment of malaria has allowed more children to recover and lead healthy lives. Even modest improvements in breastfeeding practices have reduced childhood deaths.

An integrated approach is needed to manage sick children to achieve better outcomes.

Child health programmes need to move beyond tackling single diseases in order to address the overall health and well-being of the child.

While each of these interventions has been successful , accumulating evidence suggests that an integrated approach is needed to manage sick children to achieve better outcomes. Child health programmes need to move beyond single diseases to addressing the overall health and well-being of the child. Because many children present with overlapping signs and symptoms of diseases, a single diagnosis can be difficult, and may not be feasible or appropriate. This is especially true for first-level health facilities where examinations involve few instruments, negligible laboratory tests, and no X-ray.

During the mid-1990s, the World Health Organization (WHO), in collaboration with UNICEF and many other agencies, institutions and individuals, responded to this challenge by developing a strategy known as the Integrated Management of Childhood Illness (IMCI). Although the major reason for developing the IMCI strategy stemmed from the needs of curative care, the strategy also addresses aspects of nutrition, immunization, and other important elements of disease prevention and health promotion. The objectives of the strategy are to reduce death and the frequency and severity of illness and disability, and to

[4] World Health Organization. *Report of the Division of Child Health and Development 1996-1997*. Geneva, WHO, 1998.

contribute to improved growth and development. This strategy has been expanded in India to include all neonates and renamed as 'Integrated Management of Neonatal and Childhood Illness (IMNCI)'.

The IMNCI clinical guidelines target children less than 5 years old — the age group that bears the highest burden of deaths from common childhood diseases (Figure 2).

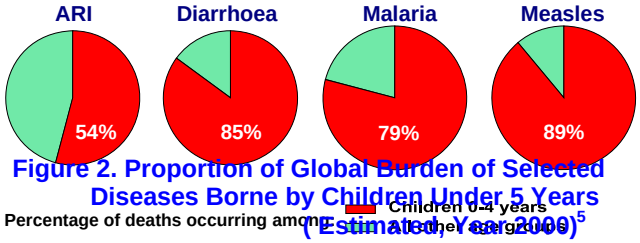


Figure 2. Proportion of Global Burden of Selected Diseases Borne by Children Under 5 Years (Estimated, Year 2000)[5]

Percentage of deaths occurring among

The guidelines represent an evidence-based, syndromic approach to case management that includes rational, effective and affordable use of drugs and diagnostic tools. Evidence-based medicine stresses the importance of evaluation of evidence from clinical research and cautions against the use of intuition, unsystematic clinical experience, and untested pathophysiologic reasoning for medical decision-making.[6] In situations where laboratory support and clinical resources are limited, the syndromic approach is a more realistic and cost-effective way to manage patients. Careful and systematic assessment of common symptoms and well-selected clinical signs provides sufficient information to guide rational and effective actions.

An evidence-based syndromic approach can be used to determine the:

- health problem(s) the child may have;
- severity of the child's condition; and
- actions that can be taken to care for the child (e.g. refer the child immediately, manage with available resources, or manage at home).

In addition, IMNCI promotes:

- adjustment of interventions to the capacity of the health system; and
- active involvement of family members and the community in the health care process.

Careful and systematic assessment of common symptoms and well-selected specific clinical signs provide sufficient information to guide rational and effective actions.

Parents, if correctly informed and counselled, can play an important role in improving the health status of their children by following the advice given by a health care provider, by applying appropriate feeding practices and by bringing sick children to a health facility as soon as symptoms arise.

1.3 COMPONENTS OF THE INTEGRATED APPROACH

The IMNCI strategy includes both preventive and curative interventions that aim to improve practices in health facilities, the health system and at home. At the core of the strategy is integrated case management of the most common neonatal and childhood problems with a focus on the most common causes of death.

[6] Chessare JB. Teaching clinical decision-making to pediatric residents in an era of managed care. *Paediatrics*, 1998, 101 (4 Pt): 762-766

The strategy includes three main components:

Improvements in the case-management skills of health staff through the provision of locally-adapted guidelines on Integrated Management of Neonatal and Childhood Illness and activities to promote their use;

Improvements in the overall health system required for effective management of neonatal and childhood illness;

Improvements in family and community health care practices.

This document is focussed on achieving the first of these components.

1.4 THE PRINCIPLES OF INTEGRATED CARE

Depending on a child's age, various clinical signs and symptoms differ in their degrees of reliability and diagnostic value and importance. Therefore, the IMNCI guidelines recommend case management procedures based on two age categories:

Young infants age up to 2 months

Children age 2 months up to 5 years

The IMNCI guidelines are based on the following principles:

All sick young infants up to 2 months of age[7] must be assessed for ***"possible bacterial infection / jaundice".*** Then they must be routinely assessed for the major symptom ***"diarrhoea".***

All sick children age 2 months up to 5 years must be examined for "***general danger signs***" which indicate the need for immediate referral or admission to a hospital. They must then be ***routinely assessed for major symptoms:*** cough or difficult breathing, diarrhoea, fever and ear problems.

All sick young infants and children 2 months up to 5 years must also be routinely assessed for ***nutritional and immunization status, feeding problems, and other potential problems.***

Only a ***limited number of carefully selected clinical signs*** are used **,** based on evidence of their sensitivity and specificity to detect disease. These signs were selected considering the conditions and realities of first-level health facilities.

A combination of individual signs leads to an infant's or a child's ***classification(s) rather than a diagnosis.*** Classification(s) indicate the severity of condition(s). They call for specific actions based on whether the infant or child (a) should be urgently referred to a higher level of care, (b) requires specific treatments (such as antibiotics or antimalarial treatment), or (c) may be safely managed at home. The ***classifications are colour coded***: "pink" suggests hospital referral or admission, "yellow" indicates initiation of specific treatment, and "green" calls for home management.

The IMNCI guidelines address ***most, but not all, of the major reasons a sick infant or child is brought to a clinic***. An infant or child returning with chronic problems or less

[7] Does not include care at birth

common illnesses may require special care. The guidelines do not describe the management of trauma or other acute emergencies due to accidents or injuries. They also do not cover care at birth.

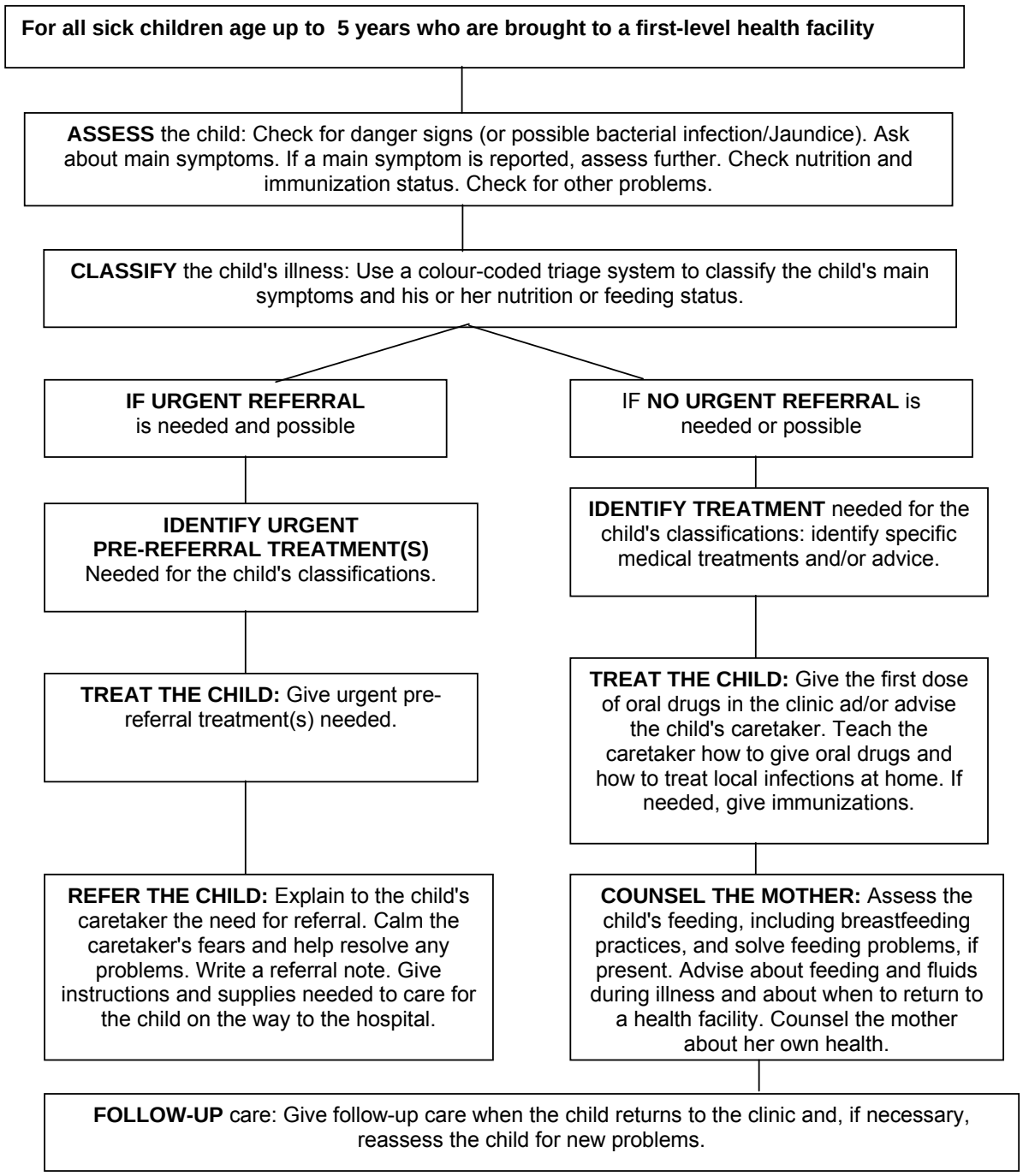
IMNCI management procedures use a ***limited number of essential drugs*** and ***encourage active participation of caretakers in the treatment*** of infants and children.

An essential component of the imnci guidelines is the ***counselling of caretakers*** about home care, including counselling about feeding, fluids and when to return to a health facility.

1.5 THE IMNCI CASE MANAGEMENT PROCESS

The overall case management process is summarized in figure 3.

Figure 3. Summary of the Integrated Case Management Process



The case management of a sick child brought to a first-level health facility includes a number of important elements Figures 4 and 5 illustrate the case management process in young infants up to 2 months of age and children 2 months up to 5 years respectively.

Outpatient Health Facility

Assessment;
Classification and identification of treatment;
Referral, treatment or counselling of the child's caretaker (depending on the classification(s) identified);
Follow-up care.

Referral Health Facility

Emergency triage assessment and treatment (ETAT);
Diagnosis, treatment and monitoring of patient progress.

Appropriate Home Management

Teaching mothers or other caretakers how to give oral drugs and treat local infections at home;
Counselling mothers or other caretakers about food (feeding recommendations, feeding problems); fluids; when to return to the health facility; and the mother's own health.

Course method and materials

In addition to this module, the ***Students' module for IMNCI,*** you will receive a chart booklet that summarizes the steps in case management. The same information is shown on 5 wall charts. The first two charts are for management of the sick young infant age up to 2 months and the other three charts for management of the sick child age 2 months up to 5 years.

If the child is <u>not yet</u> two months of age, the child is considered a young infant.

Children who are 5 years of age or older, i.e. have had their fifth birthday, should not be managed according to IMNCI charts.

Figure 4. IMNCI Case Management in the Outpatient Health Facility, First-level Referral Facility and at Home For the Sick Young Infant up to 2 Months of Age

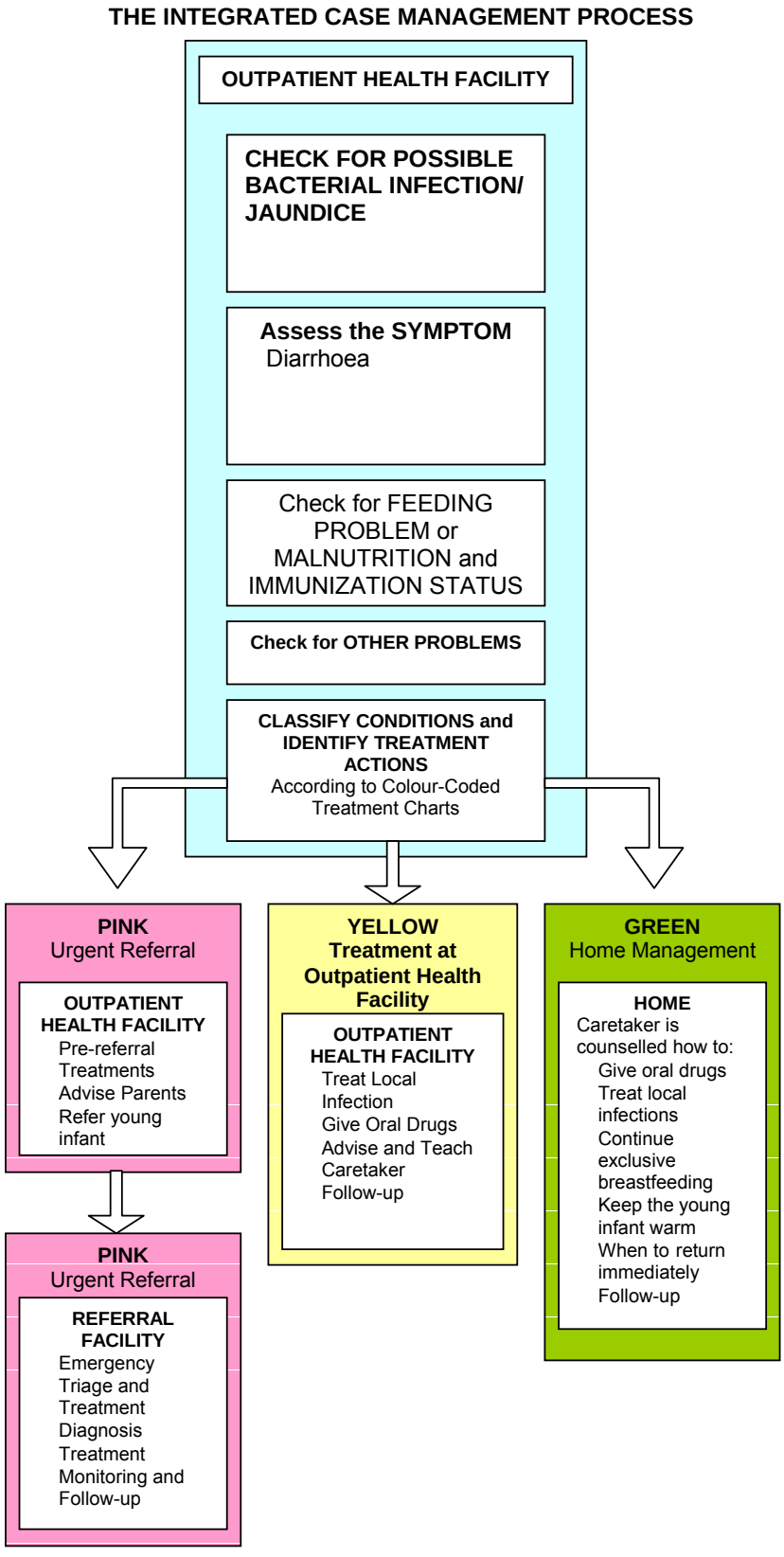
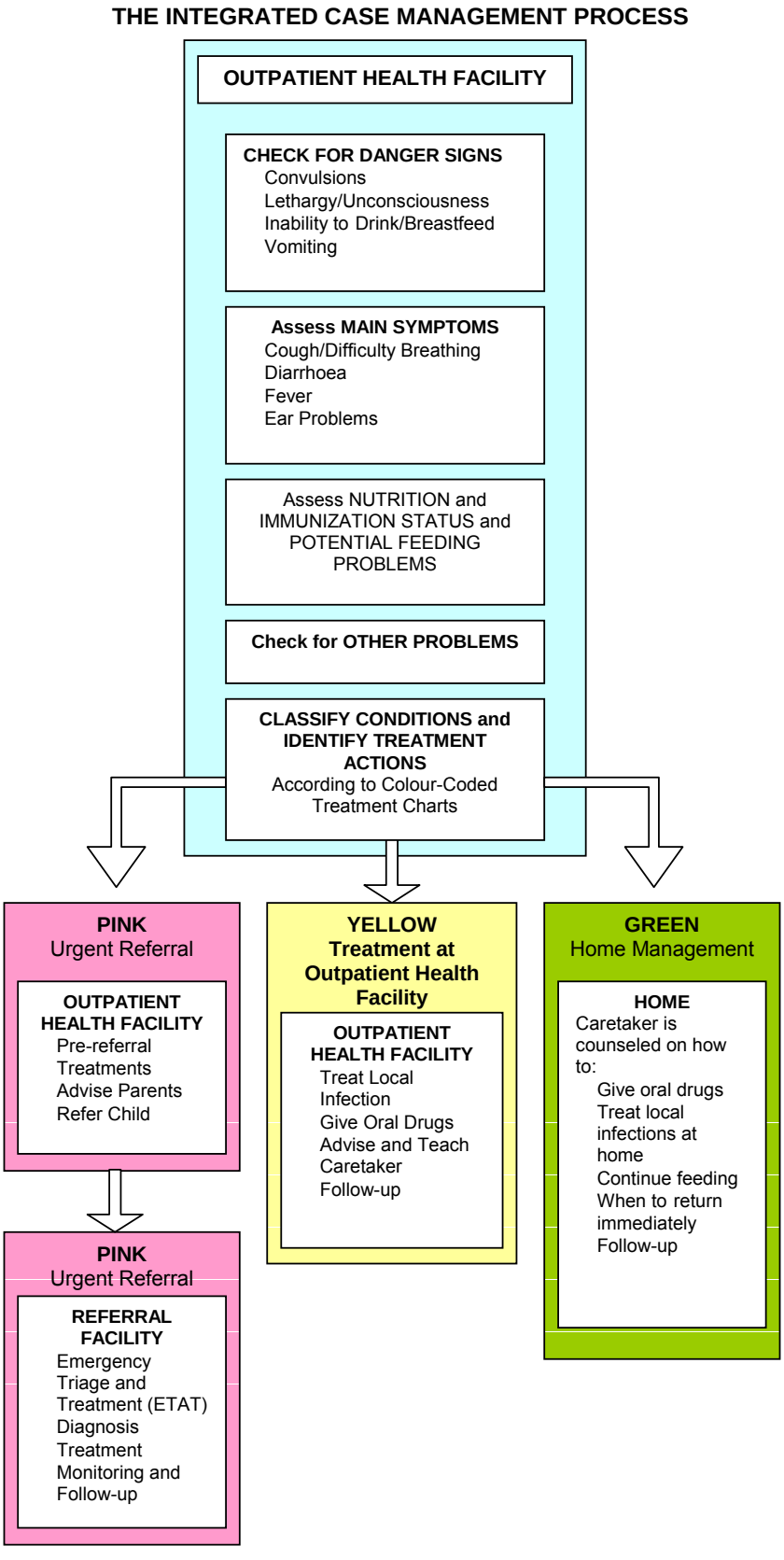


Figure 5. IMNCI Case Management in the Outpatient Health Facility, First-level Referral Facility and at Home For the Sick Child From Age 2 Months up to 5 Years



CHAPTER 2

OUTPATIENT MANAGEMENT OF YOUNG INFANTS UP TO 2 MONTHS OF AGE

2.1 LEARNING OBJECTIVES

This section of the handbook will describe the following tasks and allow you to practice some of them (some will be practiced in the clinic):

* assessing and classifying a young infant for possible bacterial infection
* assessing and classifying a young infant for jaundice
* assessing and classifying a young infant with diarrhoea
* checking for a feeding problem or malnutrition, assessing breastfeeding and classifying feeding, immunization

2.2 ASSESSMENT OF SICK YOUNG INFANTS

Young infants have special characteristics that must be considered when classifying their illnesses. They can become sick and die very quickly from serious bacterial infections. They frequently have only general signs such as few movements, fever or low body temperature. Mild chest indrawing is normal in young infants because their chest wall is soft. For these reasons, you will assess, classify and treat the young infant somewhat differently than an older infant or young child.

The assessment procedure for this age group includes a number of important steps that must be taken by the health care provider, including:

(1) history taking and communicating with the caretaker about the young infant's problem;
(2) checking for possible bacterial infection / jaundice;
(3) checking for diarrhoea;
(4) checking for feeding problem or malnutrition;
(5) checking immunization status; and
(6) assessing other problems.

2.2.1. COMMUNICATING WITH THE CARETAKER

Communicating- History Taking	
Possible Bacterial Infection / Jaundice	
Diarrhoea	
Feeding Problem or Malnutrition	
Immunization Status	
Other Problems	

It is critical to communicate effectively with the infant's mother or caretaker. Good communication techniques and an integrated assessment are required to ensure that common problems or signs of disease or malnutrition are not overlooked. Proper communication helps to reassure the mother or caretaker that the infant will receive appropriate care. In addition, the success of home treatment depends on how well the mother or caretaker knows about giving the treatment and understands its importance.

The steps to good communication are:

Listen carefully to what the caretaker says. This will show them that you take their concerns seriously.

Use words the caretaker understands. Try to use local words. Avoid medical terminology and unfamiliar words.

Give the caretaker time to answer questions. S/he may need time to reflect and decide if a clinical sign is present.

Ask additional questions when the caretaker is not sure about the answer. A caretaker may not be sure if a symptom or clinical sign is present. Ask additional questions to help her/him give clear answers.

Communicating - History taking

A mother (or other family member such as the father, grandmother, sister or brother) usually brings a young infant to the clinic because the infant is sick. But mothers also bring their infants for well-baby visits, immunization sessions and for other problems. The steps on the *ASSESS & CLASSIFY THE SICK YOUNG INFANT* chart describe what you should do when a mother brings her young infant to the clinic because the infant is sick. The chart should not be used for a well infant brought for immunization or for an infant with an injury or burn. This chart also should not be used for taking care of the newborn at birth.

When patients arrive at most clinics, clinic staff identify the reason for the infant's visit. Clinic staff obtain the infant's weight and temperature and record them on a patient chart, another written record, or on a small piece of paper. Then the mother and her infant see a doctor.

When you see the mother and her sick infant:

* **Greet the mother appropriately** and ask her to sit with her infant.
  You need to know the infant's age so you can choose the right case management chart. Look at the infant's record to find the infant's age.

  - If the infant is up to 2 months, assess and classify the young infant according to the steps on the *ASSESS AND CLASSIFY THE SICK YOUNG INFANT* chart.

  - If the child is age 2 months up to 5 years, assess and classify the child according to the steps on the *ASSESS AND CLASSIFY THE SICK CHILD*

AGE 2 MONTHS UP TO 5 YEARS chart. (You will learn more about managing sick children age 2 months up to 5 years later in the handbook).

Look to see if the young infant's weight and temperature have been measured and recorded. If not, weigh the infant and measure his temperature later when you assess and classify the infant's main symptoms. Do not undress or disturb the infant now.

* **Ask the mother what the young infant's problems are.**

Record what the mother tells you about the infant's problems.

An important reason for asking this question is to open good communication with the mother. Using good communication helps to reassure the mother that her infant will receive good care..

* **Determine if this is an initial or follow-up visit for this problem.**

If this is the infant's first visit for this episode of an illness or problem, then this is An ***initial*** visit.

If the young infant was seen a few days ago for the same illness, this is a ***follow-up*** visit. A follow-up visit has a different purpose than an initial visit. During a follow-up visit, the doctor finds out if the treatment he gave during the initial visit has helped the infant. If the young infant is not improving or is getting worse after a few days, the doctor refers the infant to a hospital or changes the infant's treatment.

You will learn how to carry out a follow-up visit later in the handbook. The examples in this section describe infants who have come for initial visit. If it is an initial visit, follow the sequence of steps on the chart to assess and classify a sick young infant:

* Check for signs of possible bacterial infection and jaundice. Then classify the young infant based on the signs found.
* Ask about diarrhoea. If the infant has diarrhoea, assess the related signs. Classify the young infant for dehydration. Also classify for persistent diarrhoea and dysentery if present.
* Check for feeding problem or malnutrition. This may include assessing breastfeeding. Then classify feeding.
* Check the young infant's immunization status.
* Assess any other problems.

If you find a reason that a young infant needs urgent referral, you should continue the assessment. However, skip the breastfeeding assessment because it can take some time.

* ***Using the Young Infant Recording Form***

Record the information on Young Infant Recording Form.

The top lines are for recording name, age, weight, temperature, the infant's problems and whether this is an initial or follow up visit.

Below is part of a Young Infant Recording Form.

An example of completing the top of the Recording Form for Jatin is shown as follows:

CASE: Jatin is 6 weeks old. He weights 4.5 kg. His temperature is 37°C. The physician asked "What are the infant's problem?" The mother said "Jatin has diarrhoea and a skin rash for the last 3days". This is the initial visit for this illness.

MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

Name: *Jatin* Age: *6 weeks* Weight: *4.5* kg Temperature: *37°C*

ASK: What are the infant's problems? *diarrhoea and rash* Initial visit? ✓ Follow-up Visit?_____

2.2.2. CHECKING FOR POSSIBLE *BACTERIAL INFECTION / JAUNDICE*

Communicating- History Taking	
Possible Bacterial Infection / Jaundice	
Diarrhoea	
Feeding Problem or Malnutrition	
Immunization Status	
Other Problems	

While the signs of pneumonia and other serious bacterial infections cannot be easily distinguished in this age group, it is recommended that ***all*** sick young infants be assessed first for signs of possible bacterial infection and jaundice.

In this step you are looking for signs of bacterial infection, especially a serious infection. A young infant can become sick and die ***very quickly*** from serious bacterial infections such as pneumonia, sepsis and meningitis.

It is important to assess the signs in the order on the chart, and to keep the young infant calm. The young infant ***must be calm*** and may be asleep while you assess the first five signs, that is, count breathing and look for chest indrawing, nasal flaring, grunting and bulging fontanelle.

To assess the next few signs, you will pick up the infant and then undress him, look at the skin all over his body and measure his temperature. By this time he will probably be awake. Then you can see whether he is lethargic or unconscious and observe his movements.

Clinical Assessment

Many clinical signs point to possible bacterial infection in sick young infants. The most informative and easy to check signs are:

Convulsions (as part of the current illness). Convulsions may be associated with meningitis or other life-threatening conditions. All young infants who have had convulsions during the present illness should be considered seriously ill. Convulsion in young infants may not be characterized by tonic-clonic movements and up rolling of eyeballs, they may instead present as repetitive jerky movements of the eyes, lip smacking or a staring look.

Fast breathing. Count the breaths in one minute to decide if the young infant has fast breathing. The young infant must be quiet and calm when you look and listen to his breathing. If the young infant is frightened, crying or angry, you will not be able to obtain an accurate count of the infant's breaths. Tell the mother you are going to count her infant's breathing. Remind her to keep her infant calm. If the infant is sleeping, do not wake him. To count the number of breaths in one minute, use a watch with a second hand or a digital watch. Put the watch where you can see the second hand and glance at the second hand as you count the breaths the young infant takes in one minute. Look for breathing movement anywhere on the infant's chest or abdomen. Usually you can see breathing movements even on an infant who is dressed. If you cannot see this movement easily, ask the mother to lift the infant's shirt. If the young infant starts to cry, ask the mother to calm the infant before you start counting. If you are not sure about the number of breaths you counted (for example, if the young infant was actively moving and it was difficult to watch the chest, or if the young infant child was upset or crying), repeat the count.

Young infants usually breathe faster than older children do. The cut-off rate to identify fast breathing in this age group is 60 breaths per minute or more. If the count is 60 breaths or more, the count should be repeated, because the breathing rate of a young infant is often irregular. The young infant may 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.

If you did not lift the young infant's shirt when you counted the infant's breaths, ask the mother to lift it now. Look for chest indrawing when the young infant breathes IN. Look at the lower chest wall (lower ribs). The young infant has chest indrawing if ***the lower chest wall goes IN when the infant breathes IN***. Chest indrawing occurs when the effort the young infant 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 young infant breathes IN. When chest indrawing is present, the lower chest wall goes IN when the young infant breathes IN.

If you are not sure that chest indrawing is present, look again. If the young infant's body is bent at the waist, it is hard to see the lower chest wall move. Ask the mother to change the infant's position so he is lying flat in her lap. If you still do not see the lower chest wall go IN when the infant breathes IN, the infant does not have chest indrawing. For chest indrawing to be present, it must be clearly visible and present all the time. If you only see

chest indrawing when the young infant is crying or feeding, the young infant does not have chest indrawing.

If only the soft tissue between the ribs goes in when the infant breathes in (also called intercostal indrawing or intercostal retractions), the infant does not have chest indrawing. In this assessment, chest indrawing is lower chest wall indrawing. It does not include "intercostal indrawing."

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.

Nasal flaring. Nasal flaring is widening of the nostrils when the young infant breathes in.

Grunting. Grunting is the soft, short sounds a young infant makes when breathing out. Grunting occurs when an infant is having difficulty in breathing.

Bulging fontanelle. Look at and feel the anterior fontanelle when the infant is not crying and held in an upright position. A bulging fontanelle may indicate that the young infant has meningitis, a possible serious bacterial infection.

Pus draining from the ear. Look for pus draining from either of the ears.

Umbilicus red or draining pus. There may be some redness of the end of the umbilicus or the umbilicus may be draining pus (The cord usually drops from the umbilicus by one week of age).

Skin pustules. Examine the skin on the entire body. Skin pustules are red spots or blisters that contain pus. Presence of 10 or more skin pustules or a large boil indicate a possible serious bacterial infection.

Temperature. A thermometer that measures to a minimum of 35 C can be used to measure temperature. Keep the bulb of the thermometer high in the axilla and then hold the young infant's arm against his body for 5 minutes before reading the temperature. If you do not have a thermometer, feel the infant's abdomen or axilla (underarm) and determine if it feels hot or cold to touch.

Fever or hypothermia may both indicate bacterial infection. Fever (axillary temperature more than 37.5°C) is uncommon in the first two months of life. Fever in a young infant may indicate a serious bacterial infection, and may be the *only* sign of a serious bacterial infection. Young infants can also respond to infection by dropping their axillary temperature to below 35.5°C.

Lethargy or unconsciousness. Young infants often sleep most of the time, and this is not a sign of illness. Even when awake, a healthy young infant will usually not watch his mother and a physician/health worker while they talk, as an older infant or young child would. A lethargic young infant is not awake and alert when he should be. He may be drowsy and may not stay awake after a disturbance. If a young infant does not wake up during the assessment, flick the sole 2-3 times. Look to see if the child wakens and whether he stays awake. If the young infant shows no response or does not stay awake after some response, he is lethargic or unconscious.

Less than normal movement also indicates a serious condition. Observe the infant's movements . An awake young infant will normally move his arms or legs or turn his head several times in a minute if you watch him closely.

Jaundice is the visible manifestation of chemical bilirubinemia. Yellow discolouration of skin is visible in a neonate when serum bilirubin is more than 5 mg/dl. Almost all neonates may have 'physiological jaundice' during the first week of life due to several physiological changes taking place after birth. Physiological jaundice usually appears between 48-72 hours of age, maximum intensity is seen on 4-5th day in term and 7th day in preterm neonates. Physiological jaundice does not extend to palms and soles, and does not need any treatment.

To look for jaundice, press the infant's skin over the forehead with your fingers to blanch, remove your fingers and immediately look for yellow discolouration under natural light. If there is yellow discoloration, the infant has jaundice.

Yellow palms and soles. Press the infant's palms with your fingers to blanch, remove your fingers and look for yellow discolouration under natural light. Repeat the process to look for yellow soles.

Occurrence of jaundice in the first 24 hours of life and yellow discolouration of palms and soles at any time is always pathological and requires urgent referral. Severe jaundice beyond the first week may be a result of cholestasis.

CLASSIFICATION OF POSSIBLE BACTERIAL INFECTION/ JAUNDICE

All sick young infants should be classified for Possible Bacterial Infection/ Jaundice.

<u>All sick young infants are classified for Possible Bacterial Infection as follows</u>:

There are two possible classifications for Possible Bacterial Infection

A sick young infant with **POSSIBLE SERIOUS BACTERIAL INFECTION** is one with any of the following signs: convulsions, fast breathing, severe chest indrawing, nasal flaring, grunting, bulging fontanel, 10 or more many skin pustules or a big boil, fever, hypothermia, lethargy or unconsciousness, or less than normal movements. This infant should be referred urgently to the hospital after being given the first dose of intramuscular ampicillin plus gentamicin, treatment to prevent hypoglycemia, and advice to the mother on keeping the young infant warm while arranging referral, and on the way to the hospital.

Convulsions or Fast breathing (60 breaths per minute or more) or Severe chest indrawing or Nasal flaring or Grunting or Bulging fontanelle or 10 or more skin pustules or a big boil or If axillary temperature 37.5^{O}C or above (or feels hot to touch) or temperature less than 35. 5^{O} C (or feels cold to touch)) or Lethargy or unconsciousness or Less than normal movement	**POSSIBLE SERIOUS BACTERIAL INFECTION**

A sick young infant with **LOCAL BACTERIAL INFECTION** is the one with umbilicus red or draining pus or pus discharge from ear or less than 10 skin pustules . This infant may be treated at home with oral antibiotics but should be seen in follow-up after two days.

Umbilicus red or draining pus or Pus discharge from the ear or < 10 skin pustules.	**LOCAL BACTERIAL INFECTION**

A sick young infant with no signs of Possible Serious Bacterial Infection and no signs of Local Bacterial Infection has no classification for Possible Bacterial Infection. In this case, the classification should be left blank.

Additionally if the sick young infant has Jaundice, classify as follows:

There are two possible classifications for jaundice.

A sick young infant with **SEVERE JAUNDICE** is one who has yellow palms and soles or has jaundice at age < 24 hours or at age 14 days or more . This infant should be referred urgently to the hospital after being given treatment to prevent hypoglycemia and advice to the mother on keeping the young infant warm while arranging referral.

Yellow Palms and soles or Age <24 hours Age 14 days or more	**SEVERE JAUNDICE**

A sick young infant with **JAUNDICE** is one who has jaundice but the palms and soles are not yellow and the age of the infant is 1-13 days . This infant should be given home care, but mother should be advised when to return immediately and should be seen in follow-up in two days.

Palms and soles not yellow and Age 1-13 days	**JAUNDICE**

Additionally, sick young infants who have axillary temperature between 35.5- 36.4^{o}C (both inclusive) should also be classified as follows:

There is only one classification.

A sick young infant with **LOW BODY TEMPERATURE** is one who has temperature less than 36.5^{o}C but above 35.4^{o}C. This could be the due to inadequate clothing in cold

weather or be a sign of bacterial infection. This infant should be warmed using skin-to-skin contact (Kangaroo Mother Care) for 1 hour and then reassessed. If the temperature is below 36.5^{o}C even after 1 hour, the infant should be referred to the hospital. If the temperature becomes normal, this infant should be sent home after advising the mother on how to keep the young infant warm.

Temperature between 35.5- 36.4^{o}C	**LOW BODY TEMPERATURE**

***How to use the classification table*:** Whenever you use a classification table, start with the pink rows. If the young infant does not have the severe classifications, look at the yellow rows. For the classification tables that have a green row, if the young infant does not have any of the signs in the pink or yellow rows, select the classification in the green row.

In the classification table, a young infant receives classifications in <u>one</u> colour only. If the young infant has signs from more than one row, always select the most severe (pink) classifications. However, if the classification table has more than one arm, e.g. Possible Bacterial Infection and Jaundice, a young infant can have one classification under Possible Bacterial Infection and another under Jaundice (if he has jaundice).

<u>Classify Young Infant for Possible Bacterial Infection/ Jaundice:</u>

For all Young Infants:

1. Look at the pink row:.
   Does the young infant have any of the signs of possible serious bacterial infection?

   If the young infant has any of the signs of possible serious bacterial infection, select the severe classification, POSSIBLE SERIOUS BACTERIAL INFECTION.
2. If the young infant does not have the severe classifications, look at the yellow row. If the young infant has any of the signs in yellow row, select the classification LOCAL BACTERIAL INFECTION..

3. There is no green row under Possible Bacterial Infection.

For Young Infant with Jaundice:

1.

1. Look at the pink row:
   If the young infant has any signs of severe jaundice, select the severe classification, SEVERE JAUNDICE.

2. If the young infant does not have any signs of severe classifications, look at the yellow row and select the classification JAUNDICE.

3. There is no green row under Jaundice.

For Young Infant with Temperature between 35.5 – 36.4 ^{0}C:

There is only yellow classification for temperature between 35.5 – 36.4 ^{0}C, LOW BODY TEMPERATURE.

EXAMPLE OF THE TOP SECTION OF THE YOUNG INFANT CASE RECORDING FORM

***CASE**:*

Jatin is 6 weeks old. He weights 4.5 kg. His temperature is 37°C. The physician asked "What are the infant's problem?" The mother said "Jatin has diarrhea and a skin rash for the last 3days". This is the initial visit for this illness.

The physician checks the young infant for signs of possible bacterial infection/jaundice. His mother says that Jatin has not had convulsions. The physician counts 55 breaths per minute. He finds no chest indrawing or nasal flaring. Jatin has no grunting. The fontanelle does not bulge. There is no pus in his ears. The umbilicus is normal. The body temperature is normal. There are 6 skin pustules. Jatin is not lethargic or unconscious, and his movements are normal. He does not have jaundice.

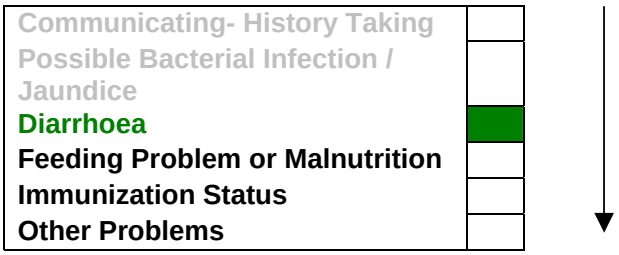
MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

Name: *Jatin* Age: *6 weeks* Weight: *4.5* kg Temperature: *37* °C

ASK: What are the infant's problems? *diarrhoea and rash* Initial visit? ✓ Follow-up Visit?_____

ASSESS (Circle all signs present)		**CLASSIFY**
CHECK FOR POSSIBLE BACTERIAL INFECTION / JAUNDICE		
Has the infant had convulsions?	Count the breaths in one minute. *55* breaths per minute Repeat if elevated _____ Fast breathing? Look for severe chest indrawing. Look for nasal flaring. Look and listen for grunting. Look and feel for bulging fontanelle. Look for pus draining from the ear. Look at the umbilicus. Is it red or draining pus? Look for skin pustules. Are there 10 or more pustules or a big boil? Measure axillary temperature (if not possible, feel for fever or low body temperature): 37.5°C or above (or feels hot)? Less than 35.5°C? (or feels cold to touch) Between 35.5 – 36.4°C See if young infant is lethargic or unconscious. Look at young infant's movements. Are they less than normal? Look for jaundice. Are the palms and soles yellow?	*Local Bacterial Infection*

2.2.3. DIARRHOEA



A young infant is considered to have diarrhoea if the stools have changed from usual pattern and are many and watery (more water than faecal matter). The normally frequent or loose stools of a breastfed baby are not diarrhoea.

A young infant with diarrhoea can be placed in one of the following 3 categories: (1) acute watery diarrhoea; (2) dysentery (bloody diarrhoea); and (3) persistent diarrhoea (diarrhoea that lasts more than 14 days). All young infants with diarrhoea should be assessed for: (a) signs of dehydration; (b) duration of diarrhoea; and (c) blood in the stool.

Clinical Assessment

All infants with diarrhoea should be assessed to determine the duration of diarrhoea, if blood is present in the stool and if dehydration is present. A number of clinical signs are used to determine the level of dehydration:

Infant's general condition. Depending on the degree of dehydration, an infant with diarrhoea may be lethargic or unconscious or look restless/irritable. Only infants who cannot be consoled and calmed should be considered restless or irritable.

Sunken eyes. The eyes of a dehydrated infant may look *sunken*. In a severely malnourished infant who is visibly wasted, the eyes may always look sunken, even if the infant is not dehydrated. Even though the sign "sunken eyes" is less reliable in a visibly wasted infant, it can still be used to classify the infant's dehydration.

Elasticity of skin. Check elasticity of skin using the skin pinch test. When released, the skin pinch goes back either *very slowly* (longer than 2 seconds), or *slowly* (skin stays up even for a brief instant), or *immediately*. In an infant with severe malnutrition, the skin may go back slowly even if the infant is not dehydrated. In an overweight infant, or an infant with oedema, the skin may go back immediately even if the infant is dehydrated.

Standard Procedures for Skin Pinch Test

Locate the area on the child's abdomen halfway between the umbilicus and the side of the abdomen; then pinch the skin using the thumb and first finger.

Place your hand in such a way that when the skin is pinched, the fold of skin will be in a line up and down the child's body and not across the child's body.

It is important to firmly pick up all of the layers of skin and the tissue under them for one second and then release it.

After the infant is assessed for dehydration, the caretaker of an infant with diarrhoea should be asked how long the infant has had diarrhoea and if there is blood in the stool. This will allow identification of infants with persistent diarrhoea and dysentery.

Classification of Dehydration

Based on a combination of the above clinical signs, infants presenting with diarrhoea are classified into three categories:

A young infant with **SEVERE DEHYDRATION** has any two of the following signs: is lethargic or unconscious, has sunken eyes, or a skin pinch goes back very slowly.

Two of the following signs: Lethargic or unconscious Sunken eyes Skin pinch goes back very slowly	**SEVERE DEHYDRATION**

Patients have severe dehydration if they have a fluid deficit equalling greater than 10 percent of their body weight. Young infants with severe dehydration require immediate IV infusion, nasogastric or oral fluid replacement according to WHO treatment guidelines described in Plan C (under treatment procedures).

Those with **SOME DEHYDRATION** have any combination of two of the following signs: restless/irritable, sunken eyes, skin pinch goes back slowly.

Two of the following signs: Restless, irritable Sunken eyes Skin pinch goes back slowly	**SOME DEHYDRATION**

Infants with some dehydration have a fluid deficit equalling 5 to 10 percent of their body weight and require active oral treatment with ORS solution according to WHO treatment guidelines described in Plan B (under treatment procedures).

This classification includes both "mild" and "moderate" dehydration, which are descriptive terms used in some paediatric textbooks.

Those infants with diarrhoea who do not have enough signs to classify as severe or some dehydration are classified as **NO DEHYDRATION.**

Not enough signs to classify as some or severe dehydration	**NO DEHYDRATION**

Patients with diarrhoea but no signs of dehydration usually have a fluid deficit less than 5 percent of their body weight. Although these children lack distinct signs of dehydration, they should be given more fluid than usual to prevent dehydration from developing as specified in WHO Treatment Plan A. (under treatment procedures).

Note: Anti-diarrhoeal drugs — including anti-motility agents (e.g., loperamide, diphenoxylate, codeine, tincture of opium), adsorbents (e.g., kaolin), live bacterial cultures (e.g., *Lactobacillus*, *Streptococcus faecium*), and charcoal — ***do not*** provide practical benefits for infants and children with acute diarrhoea, and some may have dangerous side effects. These drugs should never be given to children less than 5 years old.

Classification of Persistent Diarrhoea

Persistent diarrhoea accounts for up to 15 percent of all episodes of diarrhoea but is associated with 30 to 50 percent of deaths.

Persistent diarrhoea is an episode of diarrhoea, with or without blood, which begins acutely and lasts at least 14 days. It accounts for up to 15 percent of all episodes of diarrhoea but is associated with 30 to 50 percent of deaths.[8] Persistent diarrhoea is usually associated with weight loss and often with serious non-intestinal infections. Many infants and children who develop persistent diarrhoea are malnourished, greatly increasing the risk of death. Persistent diarrhoea is uncommon in infants who are exclusively breast-fed.

Diarrhoea lasting 14 days or more	**SEVERE PERSISTENT DIARRHOEA**

All young infants with diarrhoea lasting for 14 days or more are considered 'severe' cases and there classified as SEVERE PERSISTENT DIARRHOEA. All young infants with persistent diarrhoea should be referred to hospital. As a rule, treatment of dehydration should be initiated first, unless there is another severe classification.

Classification of Dysentery

The mother or caretaker of a child with diarrhoea should be asked if there is blood in the stool. All young infant with blood in the stools are considered 'severe' cases and there classified as **SEVERE DYSENTERY.** All young infants with blood in stool should be referred to hospital. Blood in the stool in a young infant may often be due to systemic or surgical causes rather than gastrointestinal infection.

Blood in the stool	**SEVERE DYSENTERY**

[8] Black RE. Persistent diarrhea in children in developing countries. *Pediatric infectious diseases journal*, 1993, 12:751-761.

EXAMPLE OF THE TOP TWO SECTIONS OF THE YOUNG INFANT CASE RECORDING FORM

***CASE**: Jatin is 6 weeks old. He weights 4.5 kg. His temperature is 37°C. The physician asked "What are the infant's problem?" The mother said "Jatin has diarrhea and a skin rash for the last 3days". This is the initial visit for this illness.*

The physician checks the young infant for signs of possible bacterial infection. His mother says that Jatin has not had convulsions. The physician counts 55 breaths per minute. He finds no chest indrawing or nasal flaring. Jatin has no grunting. The fontanelle does not bulge. There is no pus in his ears. The umbilicus is normal. The body temperature is noraml. There are 6 skin pustules. Jatin is not lethargic or unconscious, and his movements are normal. He does not have jaundice.

When the physician asks the mother about Jatin's diarrhoea, the mother replies that it began 3 days ago, and there is no blood in the stool. Jatin is crying. He stopped once when his mother put him to the breast. He began crying again when she stopped breastfeeding. His eyes look normal, not sunken. When the skin of his abdomen is pinched, it goes back slowly.

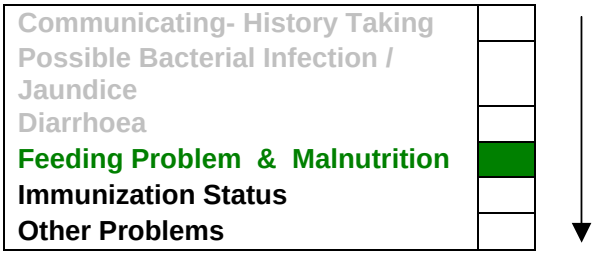
MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

Name: Jatin Age: 6 weeks Weight: 4.5 kg Temperature: 37°C

ASK: What are the infant's problems? diarrhoea and rash Initial visit? ✓ Follow-up Visit? _____

ASSESS (Circle all signs present)		**CLASSIFY**
CHECK FOR POSSIBLE BACTERIAL INFECTION / JAUNDICE		
Has the infant had convulsions?	Count the breaths in one minute. 55 breaths per minute Repeat if elevated _____ Fast breathing? Look for severe chest indrawing. Look for nasal flaring. Look and listen for grunting. Look and feel for bulging fontanelle. Look for pus draining from the ear. Look at ~~the umbilicus~~. Is it red or draining pus? Look (for skin pustules.) Are there 10 or more pustules or a big boil? Measure axillary temperature (if not possible, feel for fever or low body temperature): 37.5°C or more (or feels hot)? Less than 35.5°C? (or feels cold to touch) Between 35.5 - 36.4°C See if young infant is lethargic or unconscious. Look at young infant's movements. Are they less than normal? Look for jaundice. Are the palms and soles yellow ?.	*Local Bacterial Infection*
DOES THE YOUNG INFANT HAVE DIARRHOEA? YES ✓ NO ___		
For how long? 3 Days Is there blood in the stool?	Look at the young infant's general condition. Is the infant: ~~Lethargic or unconscious~~? (Restless and irritable?) Look for ~~sunken eyes~~. Pinch the skin of the abdomen. Does it go back: Very slowly (longer than 2 seconds)? (Slowly?)	*Some Dehydration*

2.2.4. *CHECKING FOR* ***FEEDING PROBLEMS & MALNUTRITION***



All sick young infants seen in outpatient health facilities should be assessed for weight and adequate feeding, as well as for breast-feeding technique.

Clinical Assessment

Assessment of feeding and malnutrition. Assessment of feeding in young infants has two parts. In the first part you ask the mother questions to determine if she is having difficulty feeding the infant, what the young infant is fed and how often. You also determine weight for age.

In the second part, if an infant has difficulty feeding, or is breastfed less than 8 times in 24 hours, or being given other foods or drinks, or low weight for age, then breastfeeding should be assessed. Assessment of breastfeeding in young infants includes checking if the infant is able to attach, if the infant is suckling effectively (slow, deep sucks, with some pausing), and if there are ulcers or white patches in the mouth (thrush).

Part 1
Is there any feeding difficulty? Any difficulty mentioned by the mother is important. This mother may need counselling or specific help with a difficulty. 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.

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.

Does the infant usually receive any other foods or drinks? If yes, how often? 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 fed on other foods.

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.

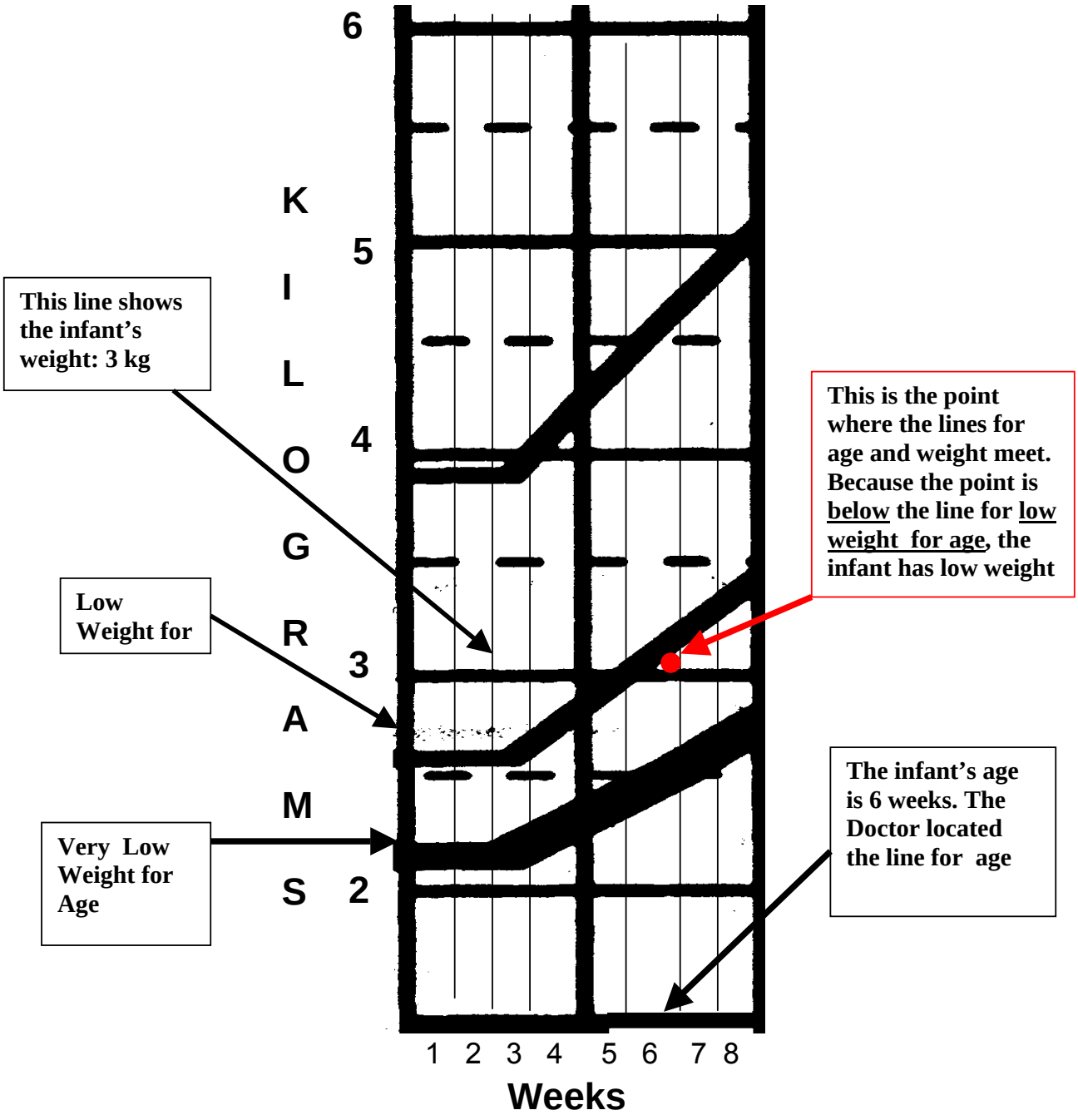
Determine weight for age. Weight for age compares the young infant's weight with the infants of the same age in the reference population (WHO-NCHS reference). The *VERY LOW WEIGHT FOR AGE LINE* identifies children whose weight is –3 standard deviations below the mean weight of infants in the reference population (Z score <-3). The *LOW WEIGHT FOR AGE LINE* identifies children whose weight is –2 standard deviations below the mean weight of infants in the reference population (Z score <-2).

Infants who are Very Low Weight for Age should be referred to a hospital. Infants who are Low Weight for Age need special attention to how they are fed and on keeping them warm.

The age of a young infant is usually stated in weeks, therefore an inset weight for age chart for young infants upto 2 months has also been given in weeks. To determine weight for age:

1. Calculate the infant's age in weeks.
2. Weigh the young infant if he has not already been weighed today. Use a scale which you know gives accurate weights. The infant should wear light clothing when he is weighed. Ask the mother to help remove any sweater or shoes.
3. Use the weight for age chart to determine weight for age.
   - Look at the left-hand axis to locate the line that shows the young infant 's weight.
   - Look at the bottom axis of the chart to locate the line that shows the young infant's age in months.
   - Find the point on the chart where the line for the young infant's weight meets the line for the infant's age.
4. Decide if the point is <u>below</u> the Very Low Weight for Age line, <u>between</u> the Very Low and Low Weight for Age lines or <u>above</u> the Low Weight for Age line.
   - If the point is <u>below</u> the Very <u>Low Weight for Age line</u>, the young infant is very low weight for age.
   - If the point is <u>above or on</u> the <u>Very Low Weight for Age line and below the Low Weight for Age line</u>, the young infant is low weight for age.
   - If the point is <u>above or on the Low Weight for Age line</u>, the young infant is <u>not</u> low weight for age.

EXAMPLE: A young infant is 6 weeks old and weighs 3 kg. Here is how the doctor checked the infant's weight for age.



Part 2

How to assess breastfeeding

First decide whether to assess the infant's breastfeeding. Do not assess Breastfeeding, if the young infant :

is exclusively breastfed without difficulty and is not low weight for age
is not breastfed at all.
has a serious problem requiring urgent referral to a hospital

In these situations, classify that feeding based on the information that you already have.

If the mother's answers or the infant's weight indicates a difficulty, observe a breastfeed as descried 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. Assessing breastfeeding requires careful observation.

Has the infant breastfed in the previous hour?
If yes, ask the mother to wait and tell you when the infant is willing to feed again. In the meantime, complete the assessment by assessing the infant's immunization status. 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. Sit quietly and watch the infant breastfeed.

Is the infant able to attach?
The four signs of good attachment are (If all of these four signs are present, the infant has good attachment:

- chin touching breast (or very close)
- mouth wide open
- lower lip turned outward
- more areola visible above than below the mouth

Breastfeeding: Signs of Good Attachment
Chin touching breast;
Mouth wide open;
Lower lip turned outward; and
More areola visible above than below the mouth.

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, the results may be pain and damage to the nipples. Or the infant may not remove breast milk effectively, which may cause 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.

Is the infant suckling effectively? (that is, slow deep sucks, sometimes pausing)
The infant is suckling effectively if he suckles with slow deep sucks and sometimes pauses. You may see or hear the infant swallowing. If you can observe how the breastfeed finishes, look for signs that the infant is satisfied. If satisfied, the infant releases the breast spontaneously (that is, the mother does not cause the infant to stop breastfeeding in any way). The infant appears relaxed, sleepy, and loses interest in the breast.

An infant is not suckling effectively if he is taking only rapid, shallow sucks. You may also see 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.

Ulcers or 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.

Classification of Feeding Problems and Malnutrition

Based on an assessment of feeding and weight, a sick young infant may be classified into three categories:

NOT ABLE TO FEED – POSSIBLE SERIOUS BACTERIAL INFECTION OR SEVERE MALNUTRITION. The young infant who is not able to feed, or not attaching to the breast at all or not suckling effectively at all or very low weight for age , has a life-threatening problem. This could be caused by a bacterial infection or another illness. A young infant who is very low weight for age is at a high risk of death. The infants who are not able to feed or have very low weight for age should be referred to a hospital after receiving the same pre-referral treatment as infants with **POSSIBLE SERIOUS BACTERIAL INFECTION**.

Not able to feed or No attachment at all or Not suckling at all or Very low weight for age	**NOT ABLE TO FEED – POSSIBLE SERIOUS BACTERIAL INFECTION** **OR** **SEVERE MALNUTRITION**

Infants with **FEEDING PROBLEMS OR LOW WEIGHT** are those infants who are not attaching well to the breast, not suckling effectively, getting breast milk fewer than eight times in 24 hours, receiving other foods or drinks than breast milk, or thrush (ulcers/white patches in mouth) or those who have low weight for age or where the mother has breast or nipple problems.

Not well attached to breast or Not suckling effectively or Less than 8 breastfeeds in 24 hours or Receiving other foods or drinks or Thrush (ulcers or white patches in mouth) Low weight for age Breast or nipple problems	**FEEDING PROBLEM OR LOW WEIGHT**

Appropriate counselling of the mother should be based on the identified feeding problem. Ensure follow-up for any feeding problem or thrush in two days and follow-up low weight for age in 14 days.

Infants with **NO FEEDING PROBLEM** are those who are breastfed exclusively at least eight times in 24 hours and whose weight is not classified as low weight for age. The young infant's weight is not necessarily normal for age but the infant is not in the high risk category.

Not low weight for age and no other signs of inadequate feeding	**NO FEEDING PROBLEM**

2.2.5 CHECKING IMMUNIZATION STATUS

Immunization status should be checked in all sick young infants. A young infant who is not sick enough to be referred to a hospital should be given the necessary immunizations before s/he is sent home.

IMMUNIZATION SCHEDULE:

AGE	VACCINE
Birth	BCG OPV 0
6 weeks	DPT 1 OPV 1 HEP-B 1*

*** Hepatitis B to be given wherever included in the immunization schedule**

Note: Do not give OPV 0 to an infant who is more than 14 days old. If an infant has not received OPV 0 by the time s/he is 15 days old, OPV should be given at age 6 weeks old as OPV 1.

2.2.6. ASSESSING OTHER PROBLEMS

All sick young infants need to be assessed for other potential problems mentioned by the mother or observed during the examination. If a potentially serious problem is found or there is no means in the clinic to help the infant, s/he should be referred to hospital.

A recording form for sick young infants age up to 2 months is shown on the next page.

***CASE**: Jatin is 6 weeks old. He weighs 4.5 kg. His temperature is 37°C. The physician asked "What are the infant's problem?" The mother said "Jatin has diarrhea and a skin rash for the last 3days". This is the initial visit for this illness.*

The physician checks the young infant for signs of possible bacterial infection/jaundice. His mother says that Jatin has not had convulsions. The physician counts 55 breaths per minute. He finds no chest indrawing or nasal flaring. Jatin has no grunting. The fontanelle does not bulge. There is no pus in his ears. The umbilicus is normal. The body temperature is normal. There are 6 skin pustules. Jatin is not lethargic or unconscious, and his movements are normal. He does not have jaundice.

When the physician asks the mother about Jatin's diarrhoea, the mother replies that it began 3 days ago, and there is no blood in the stool. Jatin is crying. He stopped once when his mother put him to the breast. He began crying again when she stopped breastfeeding. His eyes look normal, not sunken. When the skin of his abdomen is pinched, it goes back slowly.

Jatin's mother says that she has no difficulty feeding him.He breastfeeds about 5 times in 24 hours. She gives him other foods and drinks. The physician uses the Weight for Age chart and determines that Jatin's weight (4.5 kg.) is not low for his age (6 weeks).

Since Jatin is feeding less than 8 times in 24 hours and is taking other foods or drinks, the physician decides to assess breastfeeding. Jatin's mother agrees to breastfeed now. The physician observes that Jatin's chin is touching the breast. His mouth is wide open and his lower lip is turned outward. More areola is visible above than below the mouth. His sucks are deep and slow. When Jatin stops breastfeeding, the physician looks in his mouth. He sees no ulcers or white patches in his mouth.

EXAMPLE OF THE TOP THREE SECTIONS OF THE YOUNG INFANT CASE RECORDING FORM

MANAGEMENT OF THE SICK YOUNG INFANT AGE UP TO 2 MONTHS

Name: *Jatin* Age: 6 weeks Weight: 4.5 kg Temperature *37* °C **Date:**

ASK: What are the infant's problems? diarrhoea and rash Initial visit? √ Follow-up Visit?_____

ASSESS (Circle all signs present) **CLASSIFY**

CHECK FOR POSSIBLE BACTERIAL INFECTION / JAUNDICE

Has the infant had convulsions?

Count the breaths in one minute._____breaths per minute
Repeat if elevated _____ Fast breathing?
Look for severe chest indrawing.
Look for nasal flaring.
Look and listen for grunting.
Look and feel for bulging fontanelle.
Look for pus draining from the ear.
Look at the umbilicus. Is it red or draining pus?
Look for skin pustules. Are there 10 or more pustules or a big boil?
Measure axillary temperature (if not possible, feel for fever or low body temperature):
37.5°C or more (or feels hot)?
Less than 35.5°C?
Less than 36.5°C but above 35.4°C (or feels cold to touch)?
See if young infant is lethargic or unconscious
Look at young infant's movements. Less than normal?
Look for jaundice. Are the palms and soles yellow?

Local Bacterial Infection

DOES THE YOUNG INFANT HAVE DIARRHOEA? Yes ___ No ___

For how long? ____ Days
. Is there blood in the stool?

Look at the young infant's general condition. Is the infant:
Lethargic or unconscious?
Restless and irritable?
Look for sunken eyes.
. Pinch the skin of the abdomen. Does it go back:
Very slowly (longer than 2 seconds)?
Slowly?

Some Dehydration

THEN CHECK FOR FEEDING PROBLEM & MALNUTRITION

Is there any difficulty feeding? Yes __ No _
Is the infant breastfed? Yes ___ No ___
If Yes, how many times in 24 hours? 6-7 times
Does the infant usually receive any other foods or drinks? Yes ___ No ____
If Yes, how often?
What do you use to feed the infant?

Determine weight for age.
Very low ___ Low __ Not Low ___

If the infant has any difficulty feeding, is feeding less than 8 times in 24 hours, is taking any other food or drinks, or is low weight for age AND has no indications to refer urgently to hospital:

Feeding problem Or Low Weight

ASSESS BREASTFEEDING:

Has the infant breastfed in the previous hour?

If infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.

Is the infant able to attach? To check attachment, look for:
- Chin touching breast Yes √ No ___
- Mouth wide open Yes √ No ___
- Lower lip turned outward Yes √ No ___
- More areola above than below the mouth Yes √ No ___

no attachment at all *not well attached* *good attachment*

Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?

not suckling at all *not suckling effectively* *suckling effectively*

Look for ulcers or white patches in the mouth (thrush).

If yes, then look for:

Does mother have pain while breastfeeding?

. Flat or inverted nipples, or sore nipples
. Engorged breasts or breast abscess

2.3 TREATMENT OF SICK YOUNG INFANTS

The first step is to **IDENTIFY TREATMENT** required for the young infant according to the classification. All the treatments required are listed in the "Identify Treatment" column of the *ASSESS & CLASSIFY THE SICK YOUNG INFANT* chart. If a sick young infant has more than one classification, treatment required for all the classifications must be identified.

For some young infants, the *ASSESS & CLASSIFY THE SICK YOUNG INFANT* chart says "Refer URGENTLY to hospital." By hospital, we mean a health facility with inpatient beds, supplies and expertise to treat a very sick young infant. Referral may mean admission to the inpatient department of the same facility where the young infant has been examined as an outpatient.

2.3.1. REFERRAL OF YOUNG INFANTS UP TO 2 MONTHS OF AGE

All infants and children with a severe classification (pink) are referred to a hospital as soon as assessment is completed and necessary pre-referral treatment is administered.

> **Note:** If an infant only has severe dehydration and no other severe classification, and IV infusion is available in the outpatient clinic, an attempt should be made to rehydrate the sick infant.

Successful referral of severely ill infants to the hospital depends on effective counselling of the caretaker. If s/he does not accept referral, available options (to treat the infant by repeated clinic or home visits) should be considered. If the caretaker accepts referral, s/he should be given a short, clear referral note, and should get information on what to do during referral transport, particularly if the hospital is distant.

The Referral Note Should Include:

Name and age of the infant;
Date and time of referral;
Description of the child's problems;
Reason for referral (symptoms and signs leading to severe classification);
Treatment that has been given;
Any other information that the referral health facility needs to know in order to care for the infant, such as earlier treatment of the illness or any immunizations needed.

The first step is to give urgent pre-referral treatment(s). Possible pre-referral treatments include:

- First dose of intramuscular or oral antibiotics
- Keeping the infant warm on the way to the hospital
- Prevention of hypoglycemia with breastmilk or sugar water
- Frequent sips of ORS solution on the way to the hospital

Non-urgent treatments, e.g., wicking a draining ear or applying gentian violet paint on skin pustules, should be deferred to avoid delaying referral or confusing the caretaker.

If an infant does not need ***urgent*** referral, check to see if the infant needs non-urgent referral for further assessment. These referrals are not as urgent. Other necessary treatments may be done before referral.

URGENT PRE-REFERRAL TREATMENTS FOR SICK YOUNG INFANTS UP TO 2 MONTHS OF AGE

CLASSIFICATION	TREATMENT
	For all infants before referral: Prevent low blood sugar by giving breastmilk or sugar water. Warm the young infant by skin to skin contact if temperature is less than 36.5°C while arranging referral. Advise mother how to keep the infant warm on the way to the hospital.
CONVULSIONS	If the infant is convulsing, give diazepam (10 mg/2 ml solution) in dose 0.2 mg/kg (0.05 ml/kg) IV or rectally; if convulsions continue after 10 minutes, give a second dose of of diazepam. Use Phenobarbital (200 mg/ml solution) in a dose of 20 mg/kg IM to control convulsions in infants less than 2 weeks of age.
POSSIBLE SERIOUS BACTERIAL INFECTION **AND/OR** **SEVERE DEHYDRATION OR** **SOME DEHYDRATION WITH LOW WEIGHT** **AND/OR** **SEVERE PERSISTENT DIARRHOEA / DYSENTERY WITH LOW WEIGHT OR DEHYDRATION** **AND/OR** **NOT ABLE TO FEED – POSSIBLE SERIOUS BACTERIAL INFECTION OR** **SEVERE MALNUTRITION**	Give first dose of intramuscular antibiotics. The recommended choices are gentamicin (5 mg/kg) plus ampicillin (100 mg per kg), OR ceftriaxone (100 mg per kg) OR cefotaxime (50 mg per kg).
SEVERE DEHYDRATION	Treat according to Plan C (see page 17 in the chartbookletlet).

2.3.2. TREATMENT IN OUTPATIENT CLINICS

The treatment instructions for a young infant are given in the chart book (page 5 to 10).

2.3.2.1. ORAL DRUGS

The first dose of oral drugs for a young infant should always be given in the clinic. In addition, the mother or caretaker should be taught how to give an oral antibiotic at home. That is, teaching how to measure a single dose, showing how to crush a tablet and mix it with breastmilk, and teaching the treatment schedule.

> **Note:** Avoid giving cotrimoxazole to a young infant less than 1 month of age who is premature or jaundiced. Give this infant amoxycillin or ampicillin instead.

2.3.2.2. TREATMENT OF LOCAL INFECTIONS

There are three types of local infections in a ***sick young infant*** that a caretaker can treat at home: an umbilicus that is red or draining pus, skin pustules, or thrush. These local infections are treated with gentian violet.

TREATMENT IN THE OUTPATIENT CLINIC FOR SICK YOUNG INFANTS UP TO 2 MONTHS OF AGE

CLASSIFICATION	TREATMENT
LOCAL BACTERIAL INFECTION	Give an appropriate oral antibiotic. The recommended choices are cotrimoxazole and amoxicillin. Treat local infections and teach the mother to do it at home.
SOME DEHYDRATION (WITHOUT LOW WEIGHT)	Treat according to Plan B (see page 20 of chartbookletlet).
NO DEHYDRATION	Treat according to Plan A (see page 21 of chartbookletlet).
FEEDING PROBLEM OR LOW WEIGHT	Give appropriate feeding advice. If thrush, teach the mother to treat thrush at home.

2.3.2.3. COUNSELLING A MOTHER OR CARETAKER

USE GOOD COMMUNICATION SKILLS

It is important to have good communication with the infant's mother or caretaker from the beginning of the visit.

Ask and **Listen** to find out what the infant's problems are and what the mother is already doing for the infant.
Praise the mother for what she has done well.
Advise her how to care for her infant at home.
Check the mother's understanding.

ASK AND LISTEN TO FIND OUT WHAT THE INFANT'S PROBLEMS ARE AND WHAT THE MOTHER IS ALREADY DOING FOR HER CHILD

You have already learned the importance of asking questions to assess the infant's problems. Listen carefully to find out what the infant's problems are and what the mother is already doing for her child. Then you will know what she is doing well, and what practices need to be changed.

PRAISE THE MOTHER FOR WHAT SHE HAS DONE WELL

It is likely that the mother is doing something helpful for the infant, for example, breastfeeding. Praise the mother for something helpful she has done. Be sure that the praise is genuine, and only praise actions that are indeed helpful to the infant.

ADVICE THE MOTHER HOW TO CARE FOR HER CHILD AT HOME

Limit your advice to what is relevant to the mother at this time. Use language that the mother will understand. If possible, use pictures or real objects to help explain. For example, show amounts of fluid in a cup or container.

Advice against any harmful practices that the mother may have used. When correcting a harmful practice, be clear, but also be careful not to make the mother feel guilty or incompetent. Explain why the practice is harmful.

Some advice is simple. For example, you may only need to tell the mother to return with the infant for follow-up in 2 days. Other advice requires that you teach the mother how to do a task. Teaching **how to do** a task requires several steps.

Think about how you learned to write, cook or do any other task that involved special skills. You were probably first given instruction. Then you may have watched someone else. Finally you tried doing it yourself.

When you teach a mother how to treat an infant, use 3 basic ***teaching steps:***

1. Give **information.**
2. Show an **example.**
3. Let her **practice.**

Give information: Explain to the mother how to do the task. For example, explain to the mother how to prepare **ORS**

Show an example: Show how to do the task. For example, show the mother a packet of **ORS** and how to mix the right amount of water with **ORS**

Let her practice: Ask the mother to do the task while you watch. For example, have the mother mix **ORS** solution. It may be enough to ask the mother to describe how she will do the task at home.

Letting a mother ***practice*** is the most important part of teaching a task. If a mother **does** a task while you observe, you will know what she understands and what is difficult. You can then help her do it better. The mother is more likely to remember something that she has **practiced** than something that she has heard.

When teaching the mother:

Use words that she understands.
Use teaching aids that are familiar, such as common containers for mixing ORS solution.
Give feedback when she practices. Praise what was done well and make corrections.
Allow more practice, if needed.
Encourage the mother to ask questions. Answer all questions.

CHECK THE MOTHER'S UNDERSTANDING

Ask questions to find out what the mother understands and what needs further explanation. Avoid asking leading questions (that is, questions which suggest the right answer) and questions that can be answered with a simple yes or no.

Examples of good checking questions are: "What foods will you give your child?" "How often will you give them?" If you get an unclear response, ask another checking question. Praise the mother for correct understanding or clarify your advice as necessary.

After you teach a mother how to treat her child, you want to be sure that she understands how to give the treatment correctly. Checking questions find out what a mother has learned.

An important communication skill is knowing how to ask good checking questions. A checking question must be phrased so that the mother answers more than "yes" or "no". good checking questions require that she describe **why, how** or **when** she will give a treatment.

From her answer you can tell if she has understood you and learned what you taught her about the treatment. If she cannot answer correctly, give more information or clarify your instructions. For example, you taught a mother how to give an antibiotic. Then you ask:

"Do you know how to give your infant his medicine?"

The mother would probably answer "yes" whether she understands or not. She may be embarrassed to say she does not understand. However, if you ask a few good checking questions, such as:

"When will you give your infant the medicine?"
"How many tablets will you give each time?"
"For how many days will you give the tablets?"

You are asking the mother to repeat back to you instructions that you have given her. Asking good checking questions helps you make sure that the mother learns and remembers how to treat her infant.

The following questions check a mother's understanding. "Good checking questions" require the mother to describe ***how*** she will treat her child. They begin with question words, such as **why, what, how, when, how many,** and **how much.** The "poor questions", answered with a "yes" or "no", do not show you how much a mother knows.

After you ask a question, pause. Give the mother a chance to think and then answer. Do not answer the question for her. Do ***not*** quickly ask a different question.

Asking checking questions requires patience. The mother may know the answer, but she may be slow to speak. She may be surprised that you really expect her to answer. She may fear her answer will be wrong. She may feel shy to talk to an authority figure. Wait for her to answer. Give her encouragement.

GOOD CHECKING QUESTIONS	POOR QUESTIONS
How will you prepare the ORS solution?	Do you remember how to mix the ORS?
How often should you breastfeed your child?	Should you breastfeed your child?
On what part of the eye do you apply the ointment?	Have you used ointment on your child before?
How much extra fluid will you give after each loose stool?	Do you know how to give extra fluids?
Why is it important for you to wash your hands?	Will you remember to wash your hands?

If the mother answers incorrectly or says she does not remember, be careful not to make her feel uncomfortable. Teach her to give the treatment again. Give more information, examples or practice to make sure she understands. Then ask her good checking questions again.

A mother may understand but may say that she cannot do as you ask. She may have a problem or objection. Common problems are lack of time or resources to give the treatment. A mother may object that her sick infant was given an oral drug rather than an injection, or a home remedy rather than a drug.

Help the mother think of possible solutions to her problems and respond to her objections. For example, if you ask:

"What container will you use to measure 1 litre of water for mixing ORS?"

The mother may answer that she does not have a 1-litre container at home. Ask her what containers she does have at home. Show her how to measure 1 litre of water in her container. Explain how to mark the container at 1 litre with an appropriate tool or how to measure 1 litre using several smaller containers.

When checking the mother's understanding:

Ask questions that require the mother to explain what, how, how much, how many, when, or why. Do **not** ask questions that can be answered with just a "yes" or "no".
Give the mother time to think and then answer.
Praise the mother for correct answers.
If she needs it, give more **information, examples or practice**

Counselling the mother or caretaker of a sick young infant includes the following essential elements:

Teach how to give oral drugs
Teach how to treat local infection.
Teach how to manage breast or nipple problem
Teach correct positioning and attachment for breastfeeding.
Counsel on other feeding problems.
Advise when to return.
Counsel the mother about her own health

Teach how to give oral drugs

Oral drugs are given for different reasons, in different doses and on different schedules. However, the way to give each drug is similar. This section will give you the basic steps for teaching mothers to give oral drugs. If a mother learns how to give a drug correctly, then the child will be treated properly. Follow the instructions below for every oral drug you give to the mother.

DETERMINE THE APPROPRIATE DRUGS AND DOSAGE FOR THE CHILD'S AGE OR WEIGHT

Use the *TREAT THE YOUNG INFANT* pages of the chart book to determine the appropriate drug and dosage to give the infant.

TELL THE MOTHER THE REASON FOR GIVING THE DRUG TO THE CHILD, INCLUDING:

- why you are giving the oral drug to her child, and
- what problem it is treating.

DEMONSTRATE HOW TO MEASURE A DOSE.

Collect a container of the drug and check its expiry date. Do not use expired drugs. Count out the amount needed for the child. Close the container.

If you are giving the mother **tablets:**

Show the mother the amount to give per dose. If needed, show her how to divide a tablet. If a tablet has to be crushed before it is given to an infant, add a few drops of clean water and wait a minute or so. The water will soften the tablet and make it easier to crush.

If you are giving the mother **syrup:**

Show the mother how to measure the correct number of milliliters (ml) for one dose at home. Use the bottle cap or a common spoon, such as a spoon used to stir sugar into tea or coffee. Show her how to measure the correct dose with the spoon.

One teaspoon (tsp.) equals approximately 5.0 ml (see below).

MILLILITRES (ml)	TEASPOONS (tsp.)
1.25 ml	1/4 tsp.
2.5 ml	½ tsp.
5.0 ml	1 tsp.
7.5 ml	1½ tsp.
10.0 ml	2 tsp.
15 ml	3 tsp.

Adjust the above amounts based on the common spoons in your area.

WATCH THE MOTHER PRACTICE MEASURING A DOSE BY HERSELF

Ask the mother to measure a dose by herself. If the dose is in tablet form and the infant cannot swallow a tablet, tell the mother to crush the tablet. Watch her as she practices. Tell her what she has done correctly. If she measured the dose incorrectly, show her again how to measure it.

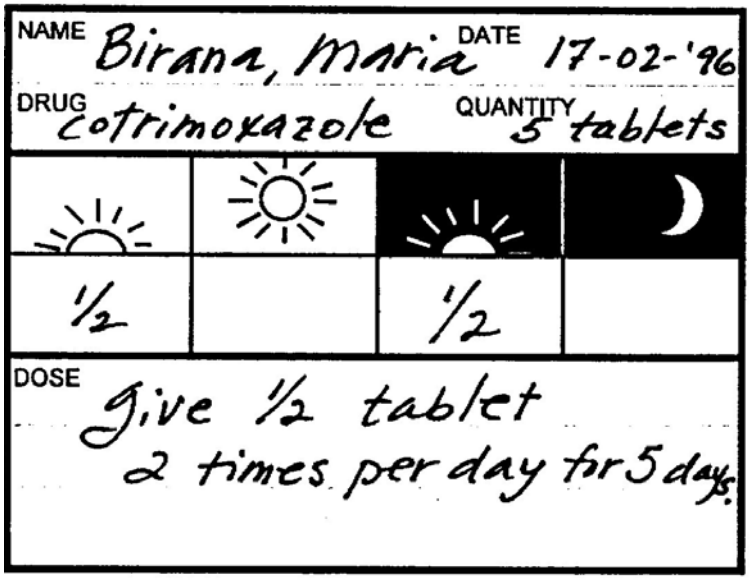
ASK THE MOTHER TO GIVE THE FIRST DOSE TO HER INFANT

Explain that if an infant is vomiting, give the drug even though the infant may vomit it up. Tell the mother to watch the infant for 30 minutes. If the infant vomits within the 30 minutes (the tablet or syrup may be seen in the vomit), give another dose. If the infant is dehydrated and vomiting, wait until the child is rehydrated before giving the dose again.

EXPLAIN CAREFULLY HOW TO GIVE THE DRUG, THEN LABEL AND PACKAGE THE DRUG

Tell the mother how much of the drug to give her infant . Tell her 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.

Write the information on a drug label. This is an example:



Follow the steps below:

a. Write the full name of the drug and the total amount of tablets, capsules or syrup to complete the course of treatment.
b. Write the correct dose for the patient to take (number of tablets, capsules, squirts or spoonfuls, that is, ½, 1, 1 ½…). Write when to give the dose (early morning, lunch, dinner, before going to bed).
c. Write the daily dose and schedule, such as
   ½ tablet twice daily for 5 days

Write the instructions clearly so that a literate person is able to read and understand them. Put the total amount of each drug into its own labelled drug container (an envelope, paper, tube or bottle). Keep drugs clean. Use clean containers. After you have labelled and packaged the drug, give it to the mother. Ask checking questions to make sure she understands how to treat her infant.

IF MORE THAN ONE DRUG WILL BE GIVEN, COLLECT, COUNT AND PACKAGE EACH DRUG

Collect one drug at a time. Write the instructions on the label. Count out the amount needed. Put enough of the drug into its own, labelled, package. Finish packaging the drug before you open another drug container.

Explain to the mother that her child is getting more than one drug because he had more than one illness. Show the mother the different drugs. Explain how to give each drug. If necessary, draw a summary of the drugs and times to give each drug during the day.

EXPLAIN THAT ALL THE ORAL DRUG TABLETS OR SYRUPS MUST BE USED TO FINISH THE COURSE OF TREATMENT, EVEN IF THE INFANT GETS BETTER

Explain to the mother that if the infant seems better, she should continue to treat the infant. This is important because the bacteria may still be present even though the signs of disease are gone.

Advise the mother to keep all medicines out of the reach of children. Also tell her to store drugs in a dry and dark place that is free of mice and insects.

CHECK THE MOTHER's UNDERSTANDING BEFORE SHE LEAVES THE CLINIC.

Ask the mother checking questions, such as:

"How much will you give each time?"
"When will you give it?" "For how many days?"
"How will you prepare this tablet?"
"Which drug will you give 3 times per day?"

If you feel that the mother is likely to have problems when she gives her infant the drug(s) at home, offer more information, examples and practice. A child needs to be treated correctly to get better.

In some clinics, a drug dispenser has the task of teaching the mother to give treatment and checking the mother's understanding. If this is your situation, teach the skills you are learning in this section to that dispenser.

Teach the caretaker to treat local infections at home

Local infections include thrush, an umbilicus that is red or draining pus, skin pustules, and ear infection.

When teaching a mother or caretaker, explain what the treatment is and why it should be given and describe the treatment steps. Watch the mother as she does the first treatment in the clinic and tell her how often to do the treatment at home. If needed for treatment at home, give mother a small bottle of gentian violet. Check the mother's understanding before she leaves the clinic.

Dry the ear by wicking. To teach a mother how to dry the ear by wicking, first tell her it is important to keep an infected ear dry to allow it to heal. Then show her how to wick her child's ear. As you wick the child's ear, tell the mother to use clean, absorbent cotton cloth or soft strong tissue paper for making a wick. Do not use a cotton-tipped applicator, a stick or flimsy paper that will fall apart in the ear. Place the wick in the child's ear until the wick is wet. Replace the wet wick with a clean one. Repeat these steps until the wick stays dry. Then the ear is dry.

Observe the mother as she practices. Give feedback. When she is finished, give her the information on frequency and duration of treatment (see chart book page 7). Tell

the mother not to place anything (oil, fluid, or other substance) in the ear between wicking treatments. Also tell her that 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 thinks she will have problems wicking the ear, help her solve them.

Treat Skin Pustules or Umbilical Infection. For umbilical or skin infection, use 0.5% gentian violet twice each day. Explain and demonstrate the treatment to the mother. Then watch her and guide her as needed while she gives the treatment. Ask her checking questions to be sure that she knows to give the treatment twice daily and when to return.

Teach correct positioning and attachment for breastfeeding
There are several reasons that an infant may be poorly attached or not able to suckle effectively. He may have had bottle feeds, especially in the first few days after delivery. His mother may be inexperienced. She may have had some difficulty and nobody to help or advise her. For example, perhaps the infant was small and weak, the mother's nipples were flat or there was a delay starting to breastfeed.

The infant may be poorly positioned at the breast. Positioning is important because poor positioning often results in poor attachment, especially in younger infants. If the infant is positioned well, the attachment is likely to be good.

Good positioning is recognized by the following signs:
- Infant's neck is straight or bent slightly back,
- Infant's body is turned towards the mother,
- Infant's body is close to the mother, and
- Infant's whole body is supported.

Poor positioning is recognized by any of the following signs:
- Infant's neck is twisted or bent forward,
- Infant's body is turned away from mother,
- Infant's body is not close to mother, or
- Only the infant's head and neck are supported

Baby's body close, facing breast

Baby's body away from mother, neck twisted

If in your assessment of breastfeeding you found any difficulty with attachment or suckling, help the mother position and attach her infant better. Make sure that the mother is comfortable and relaxed, for example, sitting on a low seat with her back straight. Then follow the steps in the treatment box (see chart book page 8).

Always observe a mother breastfeeding before you help her, so that you understand her situation clearly. Do not rush to make her do something different. If you see that the mother needs help, first say something encouraging, like:

"She really wants your breastmilk, doesn't she?"

Then explain what might help and ask if she would like you to show her. For example, say something like,

"Breastfeeding might be more comfortable for you if your baby took a larger mouthful of breast. Would you like me to show you how?"

If she agrees, you can start to help her.

As you show the mother how to position and attach the infant, be careful not to take over from her. Explain and demonstrate what you want her to do. Then let the mother position and attach the infant herself.

Then look for signs of good attachment and effective suckling again. If the attachment or suckling is not good, ask the mother to remove the infant from her breast and to try again.

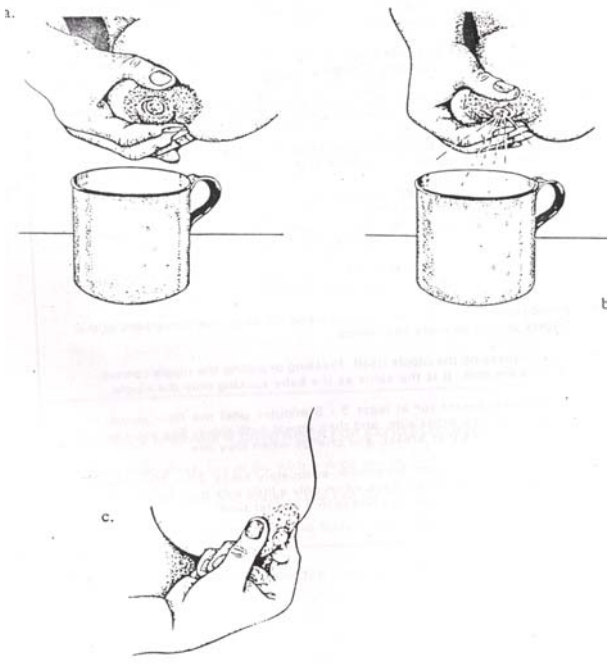
When the infant is suckling well, explain to the mother that it is important to breastfeed long enough at each feed. She should not stop the breastfeeding before the infant wants to.

Teach the mother to express breast milk and feed with a cup and spoon

Expression of breast milk is usually required for feeding infants who do not suck effectively but are able to swallow effectively (as in the case of low birth weight babies) or when there are breast or nipple problems. The expressed breast milk is usually fed with a cup and spoon.

The mother is made to sit comfortably and hold the cup near her breast with one hand. With the other hand, the mother is asked to place her thumb above and her first finger below the nipple and areola. Then she is asked to push her thumb and finger slightly inwards towards the chest wall and then press the nipple between the thumb and finger. She must repeatedly press and release. This repeated action would allow to milk to drip out. She must repeat this action also from the sides of the areola to make sure that milk is expressed from all quadrants. Expression must be continued for 3-5 minutes until the milk flow slows down.

The mother must perform the expression form both breasts and it may take her about 15-20 minutes to express both breasts completely.



For feeding the baby small amounts of the expressed breast milk are taken into the spoon or paladai and directly poured from the angle of the mouth. One must wait for the baby to swallow the milk before more milk is poured into the mouth.

Treat thrush with gentian violet. Teach the mother to treat thrush with half-strength gentian violet (0.25%). Tell the mother that her infant will start feeding normally sooner if she paints the mouth ulcers in her infant's mouth. Ask her to use a clean cloth or a cotton-tipped stick to paint gentian violet on the mouth ulcers and put a small amount of gentian violet on the cloth or stick. Tell the mother the frequency and duration of treatment (see chart book page 7).

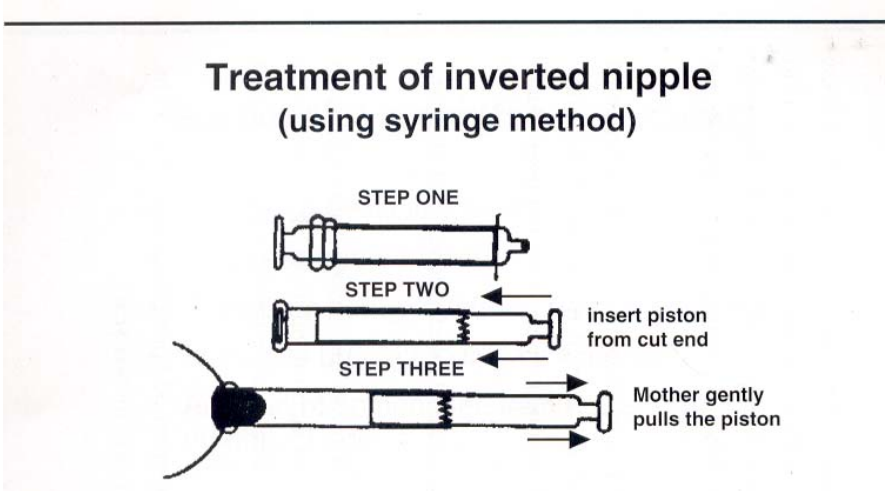
Show the mother how to paint half of the infant's mouth with half-strength gentian violet. Ask the mother to practice. Watch her paint the rest of the mouth with gentian violet. Comment on the steps she did well and those that need to be improved.

Give the mother a bottle of half-strength gentian violet to take home. Before the mother leaves, ask checking questions. If she anticipates any problems providing the treatment, help her to solve them.

Teach the mother to manage breast and nipple problems

During the first few weeks after birth, breast and nipple problems can be important causes of feeding problems and poor growth in young infants. Some of the common problems are flat or inverted nipples, sore nipples or breast abscess in the mother.

Flat or inverted nipples: If the mother has flat or inverted nipples, the baby can have difficulty in attaching to the breast, which can result in decreased lactation and poor weight gain in the infant. The nipple should be everted with fingers before the infant is put to breast during a feed. This will help the infant to attach well onto the breast. After a few days the nipples will remain everted.



Sore nipples: Sore nipples are almost always due to faulty attachment of the infant onto the mother's breast. The mother should be helped to ensure that attachment and position are correct. To alleviate the discomfort due to soreness, the mother should

be advised to apply breast milk on the affected nipple. If the baby's sucking causes a lot of discomfort to the mother inspite of correct positioning, the mother should be advised to express the breast milk and feed it with a cup and spoon to the infant, till she is able once again able to breast feed the infant without much discomfort (this would usually take about 1-2 days).

Engorged breasts and Breast abscess: Engorged breasts are swollen, hard and tender. Breast abscess is often due to breast engorgement and rarely due to primary infection of the breast. The mother should be encouraged to feed from the unaffected breast and referred to a health facility for treatment of the abscess. If the amount of milk from a single breast is inadequate, then undiluted animal milk with added sugar can be fed with cup and spoon.

Counselling about Other Feeding Problems

* If a mother is breastfeeding her infant less than 8 times in 24 hours, advise her to increase the frequency of breastfeeding. Breastfeed as often and for as long as the infant wants, day and night.

* If the infant receives other foods or drinks, counsel the mother about breastfeeding more, reducing the amount of the other foods or drinks, and if possible, stopping altogether. Advise her to feed the infant any other drinks from a cup, and not from a feeding bottle.

* If the mother does not breastfeed at all, consider referring her for breastfeeding counselling and possible re-lactation. If the mother is interested, a breastfeeding counsellor may be able to help her to overcome difficulties and begin breastfeeding again.

  Advise a mother who does not breastfeed about choosing and correctly preparing dairy/locally appropriate animal milk. Also advise her to feed the young infant with a cup, and not from a feeding bottle.

Follow-up any young infant with a feeding problem in 2 days. This is especially important if you are recommending a significant change in the way the infant is fed.

Advise when to return

A) IMMEDIATELY

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

Breastfeeding or drinking poorly
Becomes sicker
Develops a fever or feels cold to touch
Fast breathing
Difficult breathing
Yellow palms and soles (if young infant has jaundice)
Diarrhoea with blood in stool

B) FOR FOLLOW-UP VISIT	
If the infant has:	Return for follow-up not later than:
LOCAL BACTERIAL INFECTION JAUNDICE DIARRHOEA ANY FEEDING PROBLEM THRUSH	2 days
LOW WEIGHT FOR AGE	14 days

C) NEXT WELL-CHILD VISIT

Advise when to return for the next immunization according to immunization schedule.

2.2.2.4. FOLLOW-UP CARE

If the child ***does not have a new*** problem, use the IMNCI follow-up instructions for each specific problem:

Assess the child according to the instructions;
Use the information about the child's signs to select the appropriate treatment;
Give the treatment.

IMNCI chart booklet contains detailed instructions on how to conduct follow-up visits for different diseases (see chart book page 11). Follow-up visits are recommended for young infants who are classified as:

Local bacterial infection
Feeding problem or low weight (including thrush)

2.2.2.5. *COUNSEL THE MOTHER ABOUT HER OWN HEALTH*

During a sick infant visit, listen for any problems that the mother herself may be having. The mother may need treatment or referral for her own health problems. If the mother is sick, provide care for her, or refer her for help. Advise her to eat well to keep up her own strength and health. Check the mother's immunization status and give her tetanus toxoid if needed. Give the mother iron folic acid tablets if she is not already taken them. Make sure she has access to family planning and counselling on STD and AIDS prevention.

CHAPTER 3

OUTPATIENT MANAGEMENT OF CHILDREN AGE 2 MONTHS UP TO 5 YEARS

3.1 LEARNING OBJECTIVES

This section of the handbook will describe and allow you to practice the following skills:

* Asking the mother about the child's problem.
* Checking for general danger signs.
* Asking the mother about the four main symptoms:
  - cough or difficult breathing
  - diarrhoea
  - fever
  - ear problem.
* When a main symptom is present:
  - assessing the child further for signs related to the main symptom
  - classifying the illness according to the signs which are present or absent.
* Checking for signs of malnutrition and anaemia and classifying the child's nutritional status.
* Checking the child's immunization status and deciding if the child needs any immunizations today.
* Assessing any other problems.

3.2 ASSESSMENT OF SICK CHILDREN

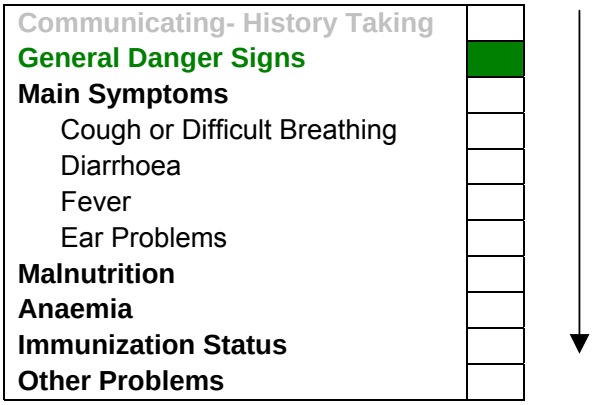
The assessment procedure for this age group includes a number of important steps that must be taken by the health care provider, including: (1) history taking and communicating with the caretaker about the child's problem; (2) checking for general danger signs; (3) checking main symptoms; (4) checking for malnutrition; (5) checking for anaemia; (6) assessing the child's feeding; (7) checking immunization status; and (8) assessing other problems.

3.2.1. **COMMUNICATING – HISTORY TAKING**

The importance of good communication with the mother or caretaker of a young infant has already been discussed under 2.2.1. Good communication techniques and an integrated assessment are required to ensure that common problems or signs of disease or malnutrition are not overlooked. Proper communication helps to reassure the mother or caretaker that the infant will receive appropriate care. In addition, the success of home treatment depends on how well the mother or caretaker knows

about giving the treatment and understands its importance. The steps to good communication have also been discussed under 2.2.1.

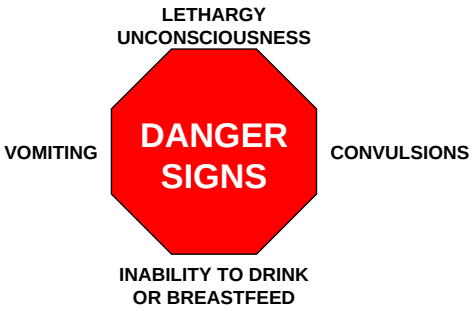
3.2.2. CHECKING FOR GENERAL DANGER SIGNS



A sick child brought to an outpatient facility may have signs that clearly indicate a specific problem. For example, a child may present with chest indrawing and cyanosis, which indicate severe pneumonia. However, some children may present with serious, non-specific signs called "general danger signs" that do not point to a particular diagnosis. For example, a child who is lethargic or unconscious may have meningitis, severe pneumonia, cerebral malaria or another severe disease. Great care should be taken to ensure that these general danger signs are not overlooked because they suggest that a child is severely ill and needs urgent attention.

The following danger signs should be routinely checked in all children.

The child has had convulsions during the present illness. Convulsions may be associated with meningitis, cerebral malaria or other life-threatening conditions. On the other hand, convulsions may be the result of fever and in this instance, they do little harm beyond frightening the mother. All children who have had convulsions during the present illness should be considered *seriously ill* because the more serious causes of convulsions cannot be differentiated from febrile convulsions without investigations conducted in a hospital.



The child is unconscious or lethargic. An unconscious child is likely to be seriously ill. A lethargic child, who is awake but does not take any notice of his or her surroundings or does not respond normally to sounds or movement, may also be very sick. These signs may be associated with many conditions.

The child is unable to drink or breastfeed. A child may be unable to drink either because s/he is too weak or because s/he cannot swallow. Do not rely completely on the mother's evidence for this, but observe while she tries to breastfeed or to give the child something to drink.

The child vomits everything. The vomiting itself may be a sign of serious illness, but it is also important to note because such a child will not be able to take medication or fluids for rehydration.

If a child has ***one or more*** of these signs, s/he must be considered ***seriously ill*** and will almost always need referral. In order to start treatment for severe illnesses without delay, the child should be quickly assessed for the most important causes of serious illness and death — acute respiratory infection (ARI), diarrhoea, and fever (especially associated with malaria and measles). A rapid assessment of nutritional status is also essential, as malnutrition is another main cause of death.

Example: Top part of a recording form with general danger signs.

CASE: *Fatima is 18 months old. She weighs 11.5 kg. Her temperature is 37.5 C. The physician asked, "What are the child's problems?" The mother said "Fatima has been coughing for 6 days, and she is having trouble breathing." This is the initial visit for this illness.*

The physician checked Fatima for general danger signs. The mother said that Fatima is able to drink. She has not been vomiting. She has not had convulsions during this illness. The physician asked, "Does Fatima seem unusually sleepy?" The mother said, "Yes." The physician clapped his hands. He asked the mother to shake the child. Fatima opened her eyes, but did not look around. The physician talked to Fatima, but she did not watch his face. She stared blankly and appeared not to notice what was going on around her.

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Child's Name: *Fatima* _____ Age: *18 months* Weight: *11.5* kg Temperature: *37.5* C

ASK: What are the child's problems? *cough, trouble breathing* Initial Visit? ✓ Follow-up Visit?__

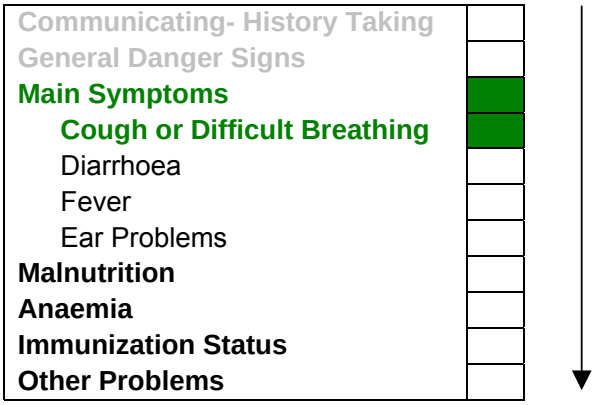
ASSESS (Circle all signs present)	**CLASSIFY**
CHECK FOR GENERAL DANGER SIGNS NOT ABLE TO DRINK OR BREASTFEED VOMITS EVERYTHING CONVULSIONS LETHARGIC OR UNCONSCIOUS	General danger sign present? Yes ✓ No ___ **Remember to use danger sign when selecting classifications**

3.2. 3 CHECKING MAIN SYMPTOMS

After checking for general danger signs, the health care provider must check for the following main symptoms: (1) cough or difficult breathing; (2) diarrhoea; (3) fever; and (4) ear problems.

The first three symptoms are included because they often result in death. Ear problems are included because they are considered one of the main causes of childhood disability.

3.2.3.1 COUGH OR DIFFICULT BREATHING



Respiratory infections can occur in any part of the respiratory tract such as the nose, throat, larynx, trachea, air passages or lungs. A child with cough or difficult breathing may have pneumonia or another severe respiratory infection. Pneumonia is an infection of the lungs. Both bacteria and viruses can cause pneumonia. In developing countries, pneumonia is often due to bacteria. The most common are *Streptococcus pneumoniae* and *Hemophilus influenzae*. Children with bacterial pneumonia may die from hypoxia (too little oxygen) or sepsis (generalized infection).

Many children are brought to the clinic with less serious respiratory infections. Most children with cough or difficult breathing have only a mild infection. For example, a child who has a cold may cough because nasal discharge drips down the back of the throat. Or the child may have a viral infection of the bronchi called bronchitis. These children are not seriously ill. They do not need treatment with antibiotics. Their families can manage them at home.

You need to identify the few, very sick children with cough or difficult breathing who need treatment with antibiotics. Fortunately, you can identify almost all cases

of pneumonia by checking for these two clinical signs: fast breathing and chest indrawing.

When children develop pneumonia, their lungs become stiff. One of the body's responses to stiff lungs and hypoxia (too little oxygen) is fast breathing. When the pneumonia becomes more severe, the lungs become even stiffer. Chest indrawing may develop. Chest indrawing is a sign of severe pneumonia.

A child presenting with cough or difficult breathing should first be assessed for general danger signs. This child may have pneumonia or another severe respiratory infection.

Clinical Assessment

Three key clinical signs are used to assess a sick child with cough or difficult breathing:

Respiratory rate, which distinguishes children who have pneumonia from those who do not;
Lower chest wall indrawing, which indicates severe pneumonia; and
Stridor, which indicates those with severe pneumonia who require hospital admission.

No single clinical sign has a better combination of sensitivity and specificity to detect pneumonia in children under 5 than ***respiratory rate, specifically fast breathing***. Even auscultation by an expert is less sensitive as a single sign.

Cut-off rates for fast breathing (the point at which fast breathing is considered to be fast) depend on the child's age. Normal breathing rates are higher in children age 2 months up to 12 months than in children age 12 months up to 5 years.

Child's Age	Cut-off Rate for Fast Breathing
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 specificity of respiratory rate for detecting pneumonia depends on the prevalence of bacterial pneumonia among the population. In areas with high levels of viral pneumonia, respiratory rate has relatively modest specificity. Nevertheless, even if the use of respiratory rate leads to some overtreatment, this will still be small compared with the current use of antibiotics for all children with an ARI, as occurs in many clinics.

Lower chest wall indrawing, defined as the inward movement of the bony structure of the chest wall with inspiration, is a useful indicator of severe pneumonia. It is more specific than "intercostal indrawing," which concerns the soft tissue between

the ribs without involvement of the bony structure of the chest wall.[9] Chest indrawing should only be considered present if it is *consistently present in a calm child*. Agitation, a blocked nose or breastfeeding can all cause temporary chest indrawing. Any chest indrawing, even if it is not severe, is an indicator of severe pneumonia in a child age 2 months up to 5 years.

Stridor is a harsh noise made when the child breathes IN. Stridor happens when there is a swelling of the larynx, trachea or epiglottis. These conditions are often called croup. This swelling interferes with air entering the lungs. It can be life threatening when the welling 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 by putting your ear near the child's mouth because stridor can be difficult to hear. Sometimes you will hear a wet noise if the child's 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.

Classification of Cough or Difficult Breathing

Based on a combination of the above clinical signs, children presenting with cough or difficult breathing can be classified into three categories:

Those who require referral for possible **SEVERE PNEUMONIA OR VERY SEVERE DISEASE.**

This group includes children with any general danger sign, or lower chest indrawing or stridor when calm. Children with **SEVERE PNEUMONIA OR VERY SEVERE DISEASE** most likely will have invasive bacterial organisms and diseases that may be life-threatening. This warrants the use of injectable antibiotics.

Any general danger sign or Chest indrawing or Stridor in calm child	**SEVERE PNEUMONIA** **OR** **VERY SEVERE DISEASE**

Those who require antibiotics as outpatients because they are highly likely to have bacterial **PNEUMONIA.**

This group includes all children with fast respiratory rate for age. Fast breathing, as defined by WHO, detects about 80 percent of children with pneumonia who

[9] Mulholland EK et al. Standardized diagnosis of pneumonia in developing countries. *Pediatric infectious disease journal*, 1992, 11:77-81.

need antibiotic treatment. Treatment based on this classification has been shown to reduce mortality.[10]

Fast breathing	**PNEUMONIA**

Those who simply have a **COUGH OR COLD** and do not require antibiotics.

No signs of pneumonia or very severe disease	**NO PNEUMONIA: COUGH OR COLD**

Such children may require a safe remedy to a relieve cough. A child with cough and cold normally improves in one or two weeks. However, a child with chronic cough (more than 30 days) needs to be further assessed (and, if needed, referred) to exclude tuberculosis, asthma, whooping cough or another problem.

Example: Top part of recording form with the main symptom cough or difficult breathing.

CASE: *Fatima is 18 months old. She weighs 11.5 kg. Her temperature is 37.5 C. The physician asked, "What are the child's problems?" The mother said "Fatima has been coughing for 6 days, and she is having trouble breathing." This is the initial visit for this illness.*

The physician checked Fatima for general danger signs. The mother said that Fatima is able to drink. She has not been vomiting. She has not had convulsions during this illness. The physician asked, "Does Fatima seem unusually sleepy?" The mother said, "Yes." The physician clapped his hands. He asked the mother to shake the child. Fatima opened her eyes, but did not look around. The physician talked to Fatima, but she did not watch his face. She stared blankly and appeared not to notice what was going on around her.

The physician asked the mother to lift Fatima's shirt. He then counted the number of breaths the child took in a minute. He counted 41 breaths per minute. The physician did not see any chest indrawing. He did not hear stridor.

[10] Sazawal S, Black RE. Meta-analysis of intervention trials on case management of pneumonia in community settings. *Lancet*, 1992, 340(8818):528-533.

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Child's Name: *Fatima* Age: *18 months* Weight: *11.5* kg Temperature: *37.5* C

ASK: What are the child's problems? *cough, trouble breathing* Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)	**CLASSIFY**
CHECK FOR GENERAL DANGER SIGNS NOT ABLE TO DRINK OR BREASTFEED LETHARGIC OR UNCONSCIOUS VOMITS EVERYTHING CONVULSIONS	General danger sign present? Yes ✓ No ___ **Remember to use danger sign when selecting classifications**
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? Yes ✓ No__ For how long? *6* Days Count the breaths in one minute. *41* breaths per minute. Fast breathing Look for chest indrawing. Look and listen for stridor.	*Severe Pneumonia Or Very Severe Disease*

3.2.3.2 DIARRHOEA

Communicating- History Taking	
General Danger Signs	
Main Symptoms	■
Cough or Difficult Breathing	
Diarrhoea	■
Fever	
Ear Problems	
Malnutrition	
Anaemia	
Immunization Status	
Other Problems	

Diarrhoea is the next symptom that should be routinely checked in ***every child*** brought to the clinic. Diarrhoea occurs when stools contain more water than normal. 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 formulas. Frequent passing of normal stools in not diarrhoea. The number of stools normally passed in a day varies with the diet and age of the child. In many regions diarrhoea is defined as three or more loose or watery stools in a 24-hour period.

Mothers usually know when their children have diarrhoea. They may say that the child's stools are loose or watery. Mothers may use a local word for diarrhoea. Babies who are exclusively breastfed often have stools that are soft; this is not diarrhoea. The mother of a breastfed baby can recognize diarrhoea because the consistency or frequency of the stools is different than normal.

A child presenting with diarrhoea should first be assessed for general danger signs and the child's caretaker should be asked if the child has cough or difficult breathing. A child with diarrhoea may have three potentially lethal conditions: (1) acute watery diarrhoea (including cholera); (2) dysentery (bloody diarrhoea); and (3) persistent diarrhoea (diarrhoea that lasts 14 days or more). All children with diarrhoea should be assessed for: (a) signs of dehydration; (b) how long the child has had diarrhoea; and (c) blood in the stool to determine if the child has dysentery.

Clinical Assessment

All children with diarrhoea should be checked to determine the duration of diarrhoea, if blood is present in the stool and if dehydration is present. A number of clinical signs are used to determine the level of dehydration:

Child's general condition. Assess if the child is lethargic or unconscious or is restless /irritable.

Sunken eyes.

Child's reaction when offered to drink. A child is *not able to drink* if s/he is not able to take fluid in his/her mouth and swallow it. For example, a child may not be able to drink because s/he is lethargic or unconscious. A child is *drinking poorly* if the child is weak and cannot drink without help. S/he may be able to swallow only if fluid is put in his/her mouth. A child has the sign *drinking eagerly, thirsty* if it is clear that the child wants to drink. Notice 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 s/he wants to drink more. If the child takes a drink only with encouragement and does not want to drink more, s/he does not have the sign "drinking eagerly, thirsty."

Elasticity of skin. Check elasticity of skin using the skin pinch test. When released, the skin pinch goes back either *very slowly* (longer than 2 seconds), or *slowly* (skin stays up even for a brief instant), or *immediately*. 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.

After the child is assessed for dehydration, the caretaker of a child with diarrhoea should be asked how long the child has had diarrhoea and if there is blood in the stool. This will allow identification of children with persistent diarrhoea and dysentery.

Classification of Dehydration

Based on a combination of the above clinical signs, children presenting with diarrhoea are classified into three categories:

SEVERE DEHYDRATION. A child is severely dehydrated if he/she has any combination of two of the following signs: is lethargic or unconscious, is not able to drink or is drinking poorly, has sunken eyes, or a skin pinch goes back very slowly. Patients have severe dehydration if they have a fluid deficit greater than 10 percent of their body weight.

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**

Children who have **SEVERE DEHYDRATION** require immediate IV infusion, nasogastric or oral fluid replacement according to the WHO treatment guidelines described in Plan C (see chartbooklet page 21).

SOME DEHYDRATION. Children who have any combination of the following two signs are included in this group: restless/irritable, sunken eyes, drinks eagerly/thirsty, skin pinch goes back slowly. Children with some dehydration have a fluid deficit equalling 5 to 10 percent of their body weight. This classification includes both "mild" and "moderate" dehydration, which are descriptive terms used in most paediatric textbooks.

Two of the following signs: Restless, irritable Sunken eyes Drinks eagerly, thirsty Skin pinch goes back slowly	**SOME DEHYDRATION**

Children who have **SOME DEHYDRATION** require active oral treatment with ORS solution according to WHO treatment guidelines described in Plan B (see chartbooklet page 20).

NO DEHYDRATION.

Not enough signs to classify as some or severe dehydration	**NO DEHYDRATION**

Patients with diarrhoea but no signs of dehydration usually have a fluid deficit, but equal to less than 5 percent of their body weight. Although these children lack distinct signs of dehydration, they should be given more fluid than usual to

prevent dehydration from developing as specified in WHO Treatment Plan A (see chartbooklet page 20).

Note: Antibiotics should not be used routinely for treatment of diarrhoea. Most diarrhoeal episodes are caused by agents for which antimicrobials are not effective, e.g., viruses, or by bacteria that must first be cultured to determine their sensitivity to antimicrobials. A culture, however, is costly and requires several days to receive the test results. Moreover, most laboratories are unable to detect many of the important bacterial causes of diarrhoea.

Note: Anti-diarrhoeal drugs — including anti-motility agents (e.g., loperamide, diphenoxylate, codeine, tincture of opium), adsorbents (e.g., kaolin), live bacterial cultures (e.g., *Lactobacillus, Streptococcus faecium*), and charcoal — ***do not*** provide practical benefits for children with acute diarrhoea, and some may have dangerous side effects. These drugs should never be given to children less than 5 years old.

Classification of Persistent Diarrhoea

Persistent diarrhoea accounts for up to 15 percent of all episodes of diarrhoea but is associated with 30 to 50 percent of deaths.

Persistent diarrhoea is an episode of diarrhoea, with or without blood, which begins acutely and lasts at least 14 days. It accounts for up to 15 percent of all episodes of diarrhoea but is associated with 30 to 50 percent of deaths.[11] Persistent diarrhoea is usually associated with weight loss and often with serious non-intestinal infections. Many children who develop persistent diarrhoea are malnourished, greatly increasing the risk of death. Persistent diarrhoea is uncommon in infants who are exclusively breast-fed.

All children with diarrhoea for 14 days or more should be classified based on the presence or absence of any dehydration:

Children with **SEVERE PERSISTENT DIARRHOEA** who also have any degree of dehydration require special treatment and should not be managed at the outpatient health facility.

Dehydration present	**SEVERE PERSISTENT DIARRHOEA**

Referral to a hospital is required. As a rule, treatment of dehydration should be initiated first, unless there is another severe classification.

Children with **PERSISTENT DIARRHOEA** and no signs of dehydration can be safely managed in the outpatient clinic, at least initially.

[11] Black RE. Persistent diarrhea in children in developing countries. *Pediatric infectious diseases journal*, 1993, 12:751-761.

No dehydration	**PERSISTENT DIARRHOEA**

Proper feeding is the most important aspect of treatment for most children with persistent diarrhoea. The goals of nutritional therapy are to: (a) temporarily reduce the amount of animal milk (or lactose) in the diet; (b) provide a sufficient intake of energy, protein, vitamins and minerals to facilitate the repair process in the damaged gut mucus and improve nutritional status; (c) avoid giving foods or drinks that may aggravate the diarrhoea; and (d) ensure adequate food intake during convalescence to correct any malnutrition.

Routine treatment of persistent diarrhoea with antimicrobials is not effective. Some children, however, have non-intestinal (or intestinal) infections that require specific antimicrobial therapy. The persistent diarrhoea of such children will not improve until these infections are diagnosed and treated correctly.

Classification of Dysentery

The mother or caretaker of a child with diarrhoea should be asked if there is blood in the stool.

A child is classified as having **DYSENTERY** if the mother or caretaker reports blood in the child's stool.

Blood in the stool	**DYSENTERY**

It is not necessary to examine the stool or perform laboratory tests to diagnose dysentery. Stool culture to detect pathogenic bacteria is rarely possible. Moreover, at least two days are required to obtain the results of a culture. Although "dysentery" is often described as a syndrome of bloody diarrhoea with fever, abdominal cramps, rectal pain and mucoid stools, these features do not always accompany bloody diarrhoea, nor do they necessarily define its aetiology or determine appropriate treatment.

About 10 percent of all diarrhoea episodes in children under 5 years old are dysenteric, but these cause up to 15 percent of all diarrhoeal deaths.

Bloody diarrhoea in young children is usually a sign of invasive enteric infection that carries a substantial risk of serious morbidity and death. About 10 percent of all diarrhoea episodes in children under 5 years old are dysenteric, but these cause up to 15 percent of all diarrhoeal deaths.[12]

Dysentery is especially severe in infants and in children who are undernourished, who develop clinically evident dehydration during their illness, or who are not

[12] The management of bloody diarrhoea in young children. Document WHO/CDD/94.9 Geneva, World Health Organization, 1994

breast-fed. It also has a more harmful effect on nutritional status than acute watery diarrhoea. Dysentery occurs with increased frequency and severity in children who have measles or have had measles in the preceding month, and diarrhoeal episodes that begin with dysentery are more likely to become persistent than those that start without blood in the stool.

All children with dysentery (bloody diarrhoea) should be treated promptly with an antibiotic effective against *Shigella* because: (a) bloody diarrhoea in children under 5 is caused much more frequently by *Shigella* than by any other pathogen; (b) shigellosis is more likely than other causes of diarrhoea to result in complications and death if effective antimicrobial therapy is not begun promptly; and (c) early treatment of shigellosis with an effective antibiotic substantially reduces the risk of severe morbidity or death.

Example: Top part of the recording form with the main symptom diarrhoea.

CASE: *Fatima is 18 months old. She weighs 11.5 kg. Her temperature is 37.5 C. The physician asked, "What are the child's problems?" The mother said "Fatima has been coughing for 6 days, and she is having trouble breathing." This is the initial visit for this illness.*

The physician checked Fatima for general danger signs. The mother said that Fatima is able to drink. She has not been vomiting. She has not had convulsions during this illness. The physician asked, "Does Fatima seem unusually sleepy?" The mother said, "Yes." The physician clapped his hands. He asked the mother to shake the child. Fatima opened her eyes, but did not look around. The physician talked to Fatima, but she did not watch his face. She stared blankly and appeared not to notice what was going on around her.

The physician asked the mother to lift Fatima's shirt. He then counted the number of breaths the child took in a minute. He counted 41 breaths per minute. The physician did not see any chest indrawing. He did not hear stridor.

The physician asked, "Does the child have diarrhoea?" The mother said, "Yes, for 3 days." There was no blood in the stool. Fatima's eyes looked sunken. The physician asked, "Do you notice anything different about Fatima's eyes?" The mother said, "Yes." He gave the mother some clean water in a cup and asked her to offer it to Fatima. When offered the cup, Fatima would not drink. When pinched, the skin of Fatima's abdomen went back slowly.

Child's Name: Fatima Age: 18 months Weight: 11.5 kg Temperature: 37.5 C

ASK: What are the child's problems? cough, trouble breathing Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)	**CLASSIFY**
CHECK FOR GENERAL DANGER SIGNS NOT ABLE TO DRINK OR BREASTFEED VOMITS EVERYTHING CONVULSIONS LETHARGIC OR UNCONSCIOUS	General danger sign present? Yes ✓ No ___ **Remember to use danger sign when selecting classifications**
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? Yes ✓ No__ For how long? 6 Days Count the breaths in one minute. 41 breaths per minute. Fast breathing Look for chest indrawing. Look and listen for stridor.	*Severe Pneumonia Or Very Severe Disease*
DOES THE CHILD HAVE DIARRHOEA? Yes ✓ No__ For how long? 3 Days Is there blood in the stool? Look at the child's general condition. Is the child: Lethargic or unconscious? Restless 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 then 2 seconds)? Slowly?	*Severe Dehydration*

3.2.3.3 ***FEVER***

Communicating- History Taking	
General Danger Signs	
Main Symptoms	
Cough or Difficult Breathing	
Diarrhoea	
Fever	
Ear Problems	
Malnutrition	
Anaemia	
Immunization Status	
Other Problems	

All sick children should be checked for fever. Fever is a very common condition and is often the main reason for bringing children to the health centre. It may be caused by minor infections, but may also be the most obvious sign of a life-threatening illness, particularly malaria (especially lethal malaria *P.falciparum*), or other severe infections, including meningitis, typhoid fever, or measles. When diagnostic

capacity is limited, it is important first to identify those children who need urgent referral with appropriate pre-referral treatment (antimalarial or antibacterial).

Clinical Assessment

Body temperature should be checked in all sick children brought to an outpatient clinic. Children are considered to have fever if their body temperature is above 37.5°C axillary (38°C rectal). In the absence of a thermometer, children are considered to have fever if they feel hot. Fever also may be recognised based on a history of fever.

A child presenting with fever should be assessed for:

Risk of malaria. In situations where routine microscopy is not available or the results may be delayed, the risk of malaria transmission must be defined. The National Anti-Malaria Program has defined areas of high and low malaria risk in the country.

Duration of fever. Most fevers due to viral illnesses go away within a few days. A fever that has been present every day for more than seven days can mean that the child has a more severe disease such as typhoid fever. If the fever has been present for more than seven days, it is important to check whether the fever has been present every day.

Bulging fontanelle. The anterior fontanelle is open for most of the period of infancy before it is closed by the growth of the surrounding bones. If open, feel for bulging of the fontanelle just as you did for young infants.

Stiff neck. A stiff neck may be a sign of meningitis, cerebral malaria or another very severe febrile disease. If the child is conscious and alert, check stiffness by tickling the feet, asking the child to bend his/her neck to look down or by very gently bending the child's head forward. It should move freely.

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 a common cold.

Measles. Considering the high risk of complications and death due to measles, children with fever should be assessed for signs of current or previous measles (within the last three months). Measles deaths occur from pneumonia and laryngotracheitis (67 percent), diarrhoea (25 percent), measles alone, and a few from encephalitis. Other complications (usually non fatal) include conjunctivitis, otitis media, and mouth ulcers. Significant disability can result from measles including blindness, severe malnutrition, chronic lung disease (bronchiectasis and recurrent infection), and neurologic dysfunction.[132]

---

[13] World Health Organization. *Technical basis for the case management of measles.* Document WHO/EPI/95. Geneva, WHO, 1995.

In measles, a red rash begins behind the ears and on the neck. It spreads to the face. During the next day, the rash spreads to the rest of the body, arms and legs. 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 that 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

Detection of acute (current) measles is based on fever with a generalised rash, plus at least one of the following signs: red eyes, runny nose, or cough. The mother should be asked about the occurrence of measles within the last three months (recent measles). Despite great success in improving immunization coverage in many countries, substantial numbers of measles cases and deaths continue to occur. Although the vaccine should be given at 9 months of age, immunization often does not take place (because of false contraindications, lack of vaccine, or failure of a cold chain), or is delayed. In addition, many measles cases occur early in a child's life (between 6 and 8 months of age), especially in urban and refugee populations.

If the child has measles currently or within the last three months, s/he should be assessed for possible complications. Measles damages the epithelial surfaces and the immune system, and lowers vitamin A levels. This results in increased susceptibility to infections caused by pneumococcus, gram-negative bacteria, and adenovirus. Recrudescence of herpes virus, Candida, and malaria can also occur during measles infection. It is important to check every child with recent or current measles for possible mouth or eye complications. Clouding of the cornea is a dangerous eye complication. It may be due to vitamin A deficiency that has been made worse by measles. If not treated, cornea can ulcerate and cause blindness. An infant with corneal clouding needs urgent treatment with vitamin A. Other possible complications such as pneumonia, stridor in a calm child, diarrhoea, malnutrition and ear infection are assessed in relevant sections of these guidelines.

Before classifying fever, check for other obvious causes of fever (e.g. ear pain, burn, abscess, etc.).

Classification of Fever

All children with fever and any general danger sign or stiff neck are classified as having **VERY SEVERE FEBRILE DISEASE** and should be urgently referred to a hospital after pre-referral treatment with antibiotics (the same choice as for severe pneumonia or very severe disease).

Any danger sign or Stiff neck or Bulging fontanelle.	**VERY SEVERE FEBRILE DISEASE**

Note: In areas where malaria *P.falciparum* is present, such children should also receive a pre-referral dose of an antimalarial (intramuscular quinine).

Further classifications will depend on the level of malaria risk in the area.

In a **high malaria risk** area, children with fever and no general danger sign or stiff neck should be classified as having **MALARIA**.

Fever (by history or feels hot or temperature 37.5°C or above)	**MALARIA**

Presumptive treatment for malaria should be given to all children who present with fever in the clinic, or who have a history of fever during this illness. Although a substantial number of children will be treated for malaria when in fact they have another febrile illness, presumptive treatment for malaria is justified in this category given the high rate of malaria risk and the possibility that another illness might cause the malaria infection to progress. This recommendation is intended to maximise sensitivity, ensuring that as many true cases as possible receive proper antimalarial treatment.[14]

In a **low malarial risk area**, children with fever (or history of fever) and no general danger sign or stiff neck are classified as having **MALARIA** and given an antimalarial only if they have no runny nose (a sign of ARI), no measles, and no other obvious cause of fever (pneumonia, sore throat, etc.).

NO runny nose and NO measles and NO other causes of fever	**MALARIA**

Evidence of another infection lowers the probability that the child's illness is due to malaria. Therefore, children in a low malaria risk area or season, who have evidence of another infection, should not be given an antimalarial.

In a **low malaria risk area**, children *with* runny nose, measles or clinical signs of other possible infection are classified as having **FEVER — MALARIA**

[14] *Management of uncomplicated malaria and the use of antimalarial drugs for the protection of travellers.* Report of an informal consultation, Geneva, 18-21 September 1995. Geneva, World Health Organization, 1997 (unpublished document WHO/MAL/96.1075 Rev 1 1997; available on request from Division of Control of Tropical Diseases (CTD)).

UNLIKELY. These children need follow-up. If their fever lasts more than five days, they should be referred for further assessment to determine causes of prolonged pyrexia. If possible, in low malaria risk settings, a simple malaria laboratory test is highly advisable.

Runny nose PRESENT or Measles PRESENT or Other causes of fever PRESENT	**FEVER – MALARIA UNLIKELY**

Note: Children with high fever, defined as an axillary temperature greater than 38.5°C or a rectal greater than 39°C, should be given a single dose of paracetamol.

Classification of Measles

All children with fever should be checked for signs of current or recent measles (within the last three months) and measles complications.

SEVERE COMPLICATED MEASLES is present when a child with measles displays any general danger sign, or has severe stomatitis with deep and extensive mouth ulcers or severe eye complications, such as clouding of the cornea. These children should be urgently referred to a hospital.

Any danger sign or Clouding of cornea or Deep or extensive mouth ulcers	**SEVERE COMPLICATED MEASLES**

Children with less severe measles complications, such as pus draining from the eye (a sign of conjunctivitis) or non-deep and non-extensive mouth ulcers, are classified as **MEASLES WITH EYE OR MOUTH COMPLICATIONS.** These children can be safely treated at the outpatient facility. This treatment includes oral vitamin A, tetracycline ointment for children with pus draining from the eye, and gentian violet for children with mouth ulcers.

Pus draining from the eye or Mouth ulcers	**MEASLES WITH EYE OR MOUTH COMPLICATIONS**

Children classified with pneumonia, diarrhoea or ear infection AND measles with eye or mouth complications should be treated for the other classification(s) AND given a vitamin A treatment regimen. Because measles depresses the immune system, these children may be also referred to hospital for treatment.

If no signs of measles complications have been found after a complete examination, a child is classified as having **MEASLES.** These children can be

effectively and safely managed at home with vitamin A to prevent complications.

Measles now or within the last three months	**MEASLES**

Example: Case recording form with the main symptom fever.

CASE: *Fatima is 18 months old. She weighs 11.5 kg. Her temperature is 37.5 C. The physician asked, "What are the child's problems?" The mother said "Fatima has been coughing for 6 days, and she is having trouble breathing." This is the initial visit for this illness.*

The physician checked Fatima for general danger signs. The mother said that Fatima is able to drink. She has not been vomiting. She has not had convulsions during this illness. The physician asked, "Does Fatima seem unusually sleepy?" The mother said, "Yes." The physician clapped his hands. He asked the mother to shake the child. Fatima opened her eyes, but did not look around. The physician talked to Fatima, but she did not watch his face. She stared blankly and appeared not to notice what was going on around her.

The physician asked the mother to lift Fatima's shirt. He then counted the number of breaths the child took in a minute. He counted 41 breaths per minute. The physician did not see any chest indrawing. He did not hear stridor.

The physician asked, "Does the child have diarrhoea?" The mother said, "Yes, for 3 days." There was no blood in the stool. Fatima's eyes looked sunken. The physician asked, "Do you notice anything different about Fatima's eyes?" The mother said, "Yes." He gave the mother some clean water in a cup and asked her to offer it to Fatima. When offered the cup, Fatima would not drink. When pinched, the skin of Fatima's abdomen went back slowly.

Because Fatima's temperature is 37.5 C and she feels hot, the physician assessed Fatima further for signs related to fever. The mother said Fatima's fever began 2 days ago. The risk of malaria is low. Fatima has not had measles within the last 3 months, and there are no signs suggesting measles. She does not have stiff neck. The physician noticed that Fatima has a runny nose.

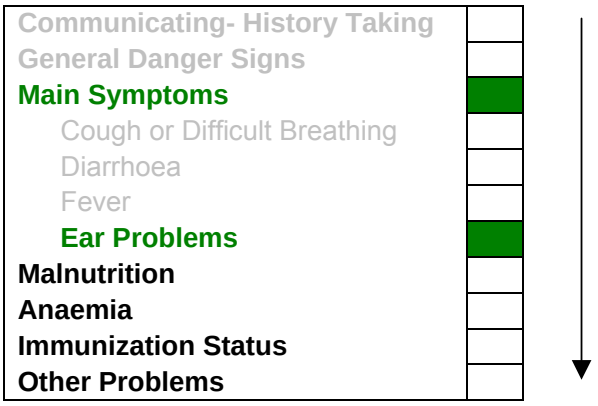
MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Child's Name: Fatima Age: 18 months Weight: 11.5 kg Temperature: 37.5 C

ASK: What are the child's problems? cough, trouble breathing Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)	**CLASSIFY**
CHECK FOR GENERAL DANGER SIGNS NOT ABLE TO DRINK OR BREASTFEED VOMITS EVERYTHING CONVULSIONS (LETHARGIC OR UNCONSCIOUS)	General danger sign present? Yes ✓ No ___ **Remember to use danger sign when selecting classifications**
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? Yes ✓ No__ For how long? 6 Days Count the breaths in one minute. 41 breaths per minute. (Fast breathing) Look for chest indrawing. Look and listen for stridor.	*Severe Pneumonia Or Very Severe Disease*
DOES THE CHILD HAVE DIARRHOEA? Yes ✓ No__ For how long? 3 Days Is there blood in the stool? Look at the child's general condition. Is the child: (Lethargic or unconscious?) Restless 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 then 2 seconds)? (Slowly?)	*Severe Dehydration*
DOES THE CHILD HAVE FEVER? Yes ✓ No __ Decide Malaria Risk: High (Low) For how long? 2 Days If more than 7 days, has fever been present every day? Has the child had measles within the last 3 months? Look or feel for stiff neck Look for (runny nose) Look for signs of MEASLES: Generalized rash and One of these: cough, runny nose, or red eyes.	*Very Severe Febrile Disease*
If the child has measles now or within the last 3 months: Look for mouth ulcers. If Yes, are they deep and extensive? Look for pus draining from the eye. Look for clouding of the cornea.	

3.2.3. 4 EAR PROBLEMS



Ear problems are the next condition that should be checked in ***all*** children brought to the outpatient health facility. A child with an ear problem may have an ear infection. When a child has an ear infection, pus collects behind the eardrum and causes pain and often fever. If the infection is not treated, the eardrum 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 eardrum has a hole in it. Usually the eardrum heals by itself. At other times the discharge continues, the eardrum 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.

A child presenting with an ear problem should first be assessed for general danger signs, cough or difficult breathing, diarrhoea and fever. A child with an ear problem may have an ear infection. Although ear infections rarely cause death, they are the main cause of deafness in low-income areas, which in turn leads to learning problems.

Clinical Assessment

Examine the ear with an otoscope if available. Additionally, look for the following simple clinical signs:

Tender swelling behind the ear. The most serious complication of an ear infection is a deep infection in the mastoid bone. It usually manifests with tender swelling behind one of the child's ears. In infants, this tender swelling also may be above the

ear. When both tenderness and swelling are present, the sign is considered positive and should not be mistaken for swollen lymph nodes.

Ear pain. In the early stages of acute otitis, a child may have ear pain, which usually causes the child to become irritable and rub the ear frequently.

Ear discharge or pus. This is another important sign of an ear infection. When a mother reports an ear discharge, the health care provider should check for pus drainage from the ears and find out how long the discharge has been present.

Classification of Ear Problems

Based on the simple clinical signs above, the child's condition can be classified in the following ways:

Children presenting with tenderness and swelling of the mastoid bone are classified as having **MASTOIDITIS** and should be referred to the hospital for treatment. Before referral, these children first should receive a dose of antibiotic and a single dose of paracetamol for pain.

Tender swelling behind the ear	**MASTOIDITIS**

Children with ear pain or ear discharge (or pus) for fewer than 14 days are classified as having **ACUTE EAR INFECTION** and should be treated for five days with the same first-line antibiotic as for pneumonia.

Pus is seen draining from the ear and discharge is reported for less than 14 days or Ear pain	**ACUTE EAR INFECTION**

If there is ear discharge (or pus) for more then 14 days, the child's classification is **CHRONIC EAR INFECTION.** Dry the ear by wicking. Generally, antibiotics are not recommended because they are expensive and their efficacy is not proven.

Pus is seen draining from the ear and discharge is reported for 14 days or more	**CHRONIC EAR INFECTION**

If no signs of ear infection are found, children are classified as having **NO EAR INFECTION** and do not require any specific treatment.

NO ear pain and NO ear discharge seen draining from the ear	**NO EAR INFECTION**

Example: Ear problem section of the case recording form.

CASE: *Meera is 3 years old. She weighs 13 kg. Her temperature is 37.5 C. Her mother came to the clinic because Meera has felt hot for 2 days. She was crying last night and complained that her ear was hurting. The physician checked and found no general danger signs. Meera 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 physician asked about Meera's ear problem. The mother said she is sure Meera has ear pain. The child cried most of the night because her ear hurt. There has not been ear discharge. The physician did not see any pus draining from the child's ear. She felt behind the child's ears and found no tender swelling.

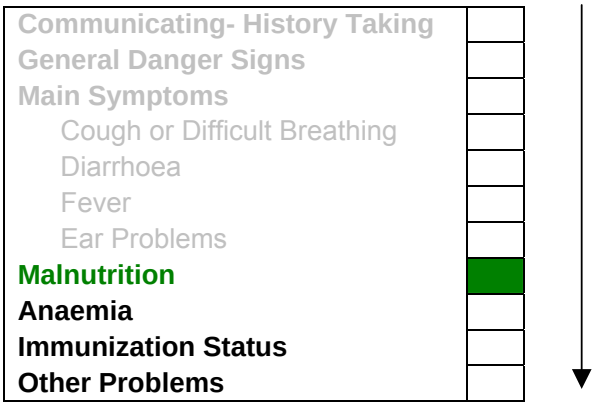
MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Child's Name: Meera Age: 3 years Weight: 13 kg Temperature: 37.5 C

ASK: What are the child's problems? Fever and ear pain Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)		**CLASSIFY**
DOES THE CHILD HAVE AN EAR PROBLEM? Yes ✓ No__		
Is there ear pain? (circled)	Look for pus draining from the ear.	
Is there ear discharge?	Feel for tender swelling behind the ear.	Acute Ear Infection
If Yes, for how long? ___ Days		

3.2.4 CHECKING FOR MALNUTRITION



A mother may bring her child to clinic because the child has an acute illness. The child may not have specific complaints that point to malnutrition. A sick child can be malnourished, but you or the child's family may not notice the problem. A child with malnutrition has a higher risk of many types of disease and death. Even children with mild and moderate malnutrition have an increased risk of death.

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

After assessing for general danger signs and the four main symptoms, ***all*** children should be assessed for malnutrition. There are two main reasons for routine assessment of nutritional status in sick children: (1) to identify children with severe malnutrition who are at increased risk of mortality and need urgent referral to provide active treatment; and (2) to identify children with sub-optimal growth (stunting) resulting from ongoing deficits in dietary intake plus repeated episodes of infection and who may benefit from nutritional counselling and resolution of feeding problems.

Clinical Assessment

Because reliable height boards are difficult to find in most outpatient health facilities, nutritional status should be assessed by looking and feeling for the following clinical signs:

Visible severe wasting. This is defined as severe wasting of the shoulders, arms, buttocks, and legs, with ribs easily seen, and indicates presence of marasmus.

To look for visible severe wasting, remove the child's clothes. Look for severe wasting of the muscles of the shoulders, arms, 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.

Oedema of both feet. The presence of oedema (accumulation of fluid) in both feet may signal kwashiorkor. Children with oedema of both feet may have other diseases like nephrotic syndrome. There is a need, however, to differentiate these other conditions in the outpatient settings because referral is necessary in any case.

Weight for age. When height boards are not available in outpatient settings, a weight for age indicator (a standard WHO growth chart) helps to identify children with low (Z score less than –2) or very low (Z score less than –3) weight for age, who are at increased risk of infection and poor growth and development.

CLASSIFICATION OF NUTRITIONAL STATUS

Using a combination of the simple clinical signs above, children can be classified in one of the following categories:

Children with **SEVERE MALNUTRITION** exhibiting visible severe wasting or oedema of both feet are at high risk of death from various severe diseases and need urgent referral to a hospital where their treatment can be carefully monitored.

Visible severe wasting or Oedema of both feet	**SEVERE MALNUTRITION**

Children with **VERY LOW WEIGHT** for age also have a higher risk of severe disease and should be assessed for feeding problems. This assessment should identify common, important problems with feeding that can be corrected if the caretaker is provided effective counselling and acceptable feeding recommendations based on the child's age.

Very low weight for age	**VERY LOW WEIGHT**

Children who are not very low weight for age and who show no signs of severe malnutrition are classified as having **NOT VERY LOW WEIGHT.** Because children less than 2 years old have a higher risk of feeding problems and malnutrition than older children do, their feeding should be assessed. If problems are

identified, the mother needs to be counselled about feeding her child according to the recommended national IMNCI clinical guidelines (see following section).

NOT very low weight for age and no signs of severe malnutrition	**NOT VERY LOW WEIGHT**

Example: Malnutrition section of the case recording form.

CASE: *Amit is 9 months old. He weighs 7 kg. His temperature is 36.8 C. He is at the clinic today because his mother and father are concerned about his diarrhoea. He does not have any general danger signs. He does not have cough or difficult breathing. He has had diarrhoea for 5 days, and is classified as diarrhoea with SOME DEHYDRATION. He does not have fever. He does not have an ear problem.*

Next, the physician checked for signs of malnutrition. The child does not have visible severe wasting. He does not have oedema of both feet. The physician uses the Weight for Age chart to determine Amit's weight (7 kg.) for his age (9 months).

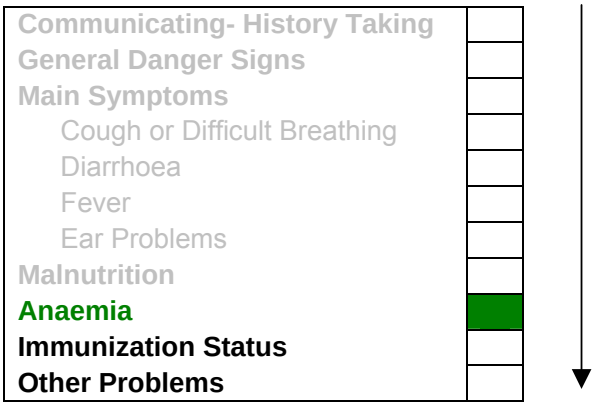
MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

0Child's Name: *Amit* Age: *9 months* Weight: *7* kg Temperature: *36.8* C

ASK: What are the child's problems? *Diarrhoea* Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)	**CLASSIFY**
THEN CHECK FOR MALNUTRITION Look for visible severe wasting. Look for oedema of both feet. Determine weight for age. Very Low ____ Not Very Low ✓	*Not very Low weight*

3.2.5 CHECKING FOR ANAEMIA



All children also should be assessed for anaemia. The most common cause of anaemia in young children in developing countries is nutritional or because of parasitic or helminthic infections. However, there may be other more serious causes of anaemia such as haemolytic anaemia, aplastic anaemia or leukaemia.

Clinical assessment

Palmar pallor. Although this clinical sign is less specific than many other clinical signs included in the IMNCI guidelines, it can allow health care providers to identify sick children with severe anaemia. Where feasible, the specificity of anaemia diagnosis may be greatly increased by using a simple laboratory test for Hb estimation.

To see if the child has palmar pallor, look at the skin 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 pallor by blocking the blood supply. Compare the colour of the child's palm with your own palm and with the palms of other children. If the skin of the child's palm is pale, the child has some palmar pallor. If the skin of the palm is very pale or so pale that it looks white, the child has severe palmar pallor.

CLASSIFICATION OF ANAEMIA

Children can be classified in one of the following categories:

Children with **SEVERE ANAEMIA** who have severe palmar pallor need urgent referral to a hospital for blood transfusion.

Severe palmar pallor	**SEVERE ANAEMIA**

Children with some palmar pallor have **ANAEMIA** and should be assessed for feeding problems. This assessment should identify common, important problems

with feeding that can be corrected if the caretaker is provided effective counselling and acceptable feeding recommendations based on the child's age.

Some palmar pallor	**ANAEMIA**

When children are classified as having **ANAEMIA** they should be treated with oral iron. During treatment, the child should be seen every two weeks (follow-up), at which time an additional 14 days of iron treatment is given. If there is no improvement in pallor after two weeks, the child should be referred to the hospital for further assessment. Iron is not given to children with severe malnutrition who will be referred.

Children who have no palmar pallor are classified as having **NO ANAEMIA.**

No palmar pallor	**NO ANAEMIA**

Example: Anaemia section of the case recording form.

CASE: *Amit is 9 months old. He weighs 7 kg. His temperature is 36.8 C. He is at the clinic today because his mother and father are concerned about his diarrhoea. He does not have any general danger signs. He does not have cough or difficult breathing. He has had diarrhoea for 5 days, and is classified as diarrhoea with SOME DEHYDRATION. He does not have fever. He does not have an ear problem. Amit does not have signs of severe malnutrition or very low weight for age.*

Next, the physician checked for signs of anaemia.

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

0Child's Name: *Amit* Age: *9 months* Weight: *7* kg Temperature: *36.8* C

ASK: What are the child's problems? *Diarrhoea* Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present)	**CLASSIFY**
THEN CHECK FOR ANAEMIA Look for palmar pallor. Severe palmar pallor? (Some palmar pallor?)	*Anaemia*

ASSESSING THE CHILD'S FEEDING

All children ***less than 2 years old*** and all children classified as **ANAEMIA OR VERY LOW WEIGHT** need to be assessed for feeding.

All children under age 2 should have a feeding assessment, even if they have a normal Z-score.

Feeding assessment includes questioning the mother or caretaker about: (1) breastfeeding frequency and night feeds; (2) types of complimentary foods or fluids, frequency of feeding and whether feeding is active; and (3) feeding patterns during the current illness. The mother or caretaker should be given appropriate advice to help overcome any feeding problems found (for more details, refer to the section on counselling the mother or caretaker).

However, if the mother has already received many treatment instructions and is overwhelmed, you may delay assessing feeding and counselling the mother about feeding until a later visit. Even though you may feel hurried, it is important to take time to counsel the mother carefully and completely. When counselling a mother about feeding, you will use some of the same communication skills described earlier.

For example, you will ask the mother questions to determine how she is feeding the child. You will listen carefully to the mother's answers so that you can make your advice relevant to her. You will praise the mother for appropriate practices and advise her about any practices that need to be changed. You will use simple language that the mother can understand. Finally, you will ask checking questions to ensure that the mother knows how to care for her child at home.

To assess feeding, ask the mother the following questions. These questions are at the bottom of the sick child case recording form. These questions will help you find out about the child's usual feeding and feeding during this illness:

Do you breastfeed your child?
If yes: how many times during the day?
    Do you also brestfeed during the night?
Does the child take any other food or fluids?
If yes: What food or fluids?
    How many times per day?
    What do you use to feed the child?
How large are servings? Does the child receive his own serving?
    Who feeds the child and how?
During this illness, has the child's feeding changed? If yes, how?

Listen for correct feeding practices as well as those that need to be changed. As you listen to the mother, you may look at the Feeding Recommendations During Sickness and Health that are appropriate for the child's age (see page 25 of the chart book). If an answer is unclear, ask another question. For example, if the mother of a

very-low-weight child says that servings are "large enough," you could ask, "When the child has eaten, does he still want more?"

Identify feeding problems

It is important to complete the assessment of feeding and identify all the feeding problems before giving advice. Based on the mother's answers to the feeding questions, identify any differences between the child's actual feeding and the feeding recommendations. These differences are problems. Some examples of feeding problems are listed below.

EXAMPLES OF FEEDING PROBLEMS

CHILD'S ACTUAL FEEDING	RECOMMENDED FEEDING
A 3-month-old is given sugar water as well as breast milk.	A 3-month-old should be given only breast milk and no another food or fluid.
A 2-year-old fed only 3 times each day.	A 2-year-old should receive 2 extra feedings between meals, as well as 3 meals a day.
An 8-month-old is still exclusively breastfed.	A breastfed 8-month-old should also be given adequate servings of a nutritious complementary food 3 times a day.

In addition to differences from the feeding recommendations, some other problems may become apparent from the mother's answers. Other common feeding problems are:

Difficulty breastfeeding
The mother may mention that breastfeeding is uncomfortable for her, or that her child seems to have difficulty breastfeeding. If so, you will need to assess breastfeeding as described on the YOUNG INFANT chart. You may find that infant's positoning and attachment could be improved.

Use of feeding bottle
Feeding bottles should not be used. They are often dirty, and germs easily grow in them. Fluids tend to be left in them and soon become spoiled or sour. The child may drink the spoiled fluid and become ill. Also, sucking on a bottle may interfere with the child's desire to breastfeed.

Lack of active feeding
Young children often need to be encouraged and assisted to eat. This is especially true if a child has very low weight. If a young child is left to feed himself, or if he has to compete with siblings for food, he may not get enough to eat. By asking, "Who feeds the child and how?" you should be able to find out if the child is actively being encouraged to eat.

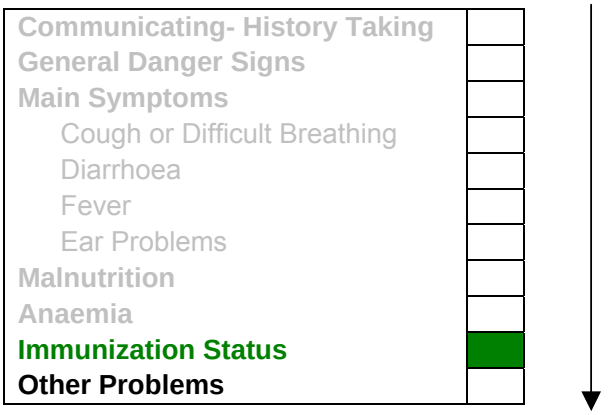
Not feeding well during illness

The child may be eating much less, or eating different foods during illness. Children often lose their appetite during illness. However, they should still be encouraged to eat the types of food recommended for their age, as often as recommended, even if they do not eat much. They should be offered their favorite nutritious foods, if possible, to encourage eating.

EXAMPLE: PART OF THE CASE RECORDING FORM FOR A 4-MONTH-OLD CHILD WITH THE CLASSIFICATION NO ANAEMIA AND NOT VERY LOW WEIGHT.

ASSESS (Circle all signs present)	**CLASSIFY**
ASSESS CHILD'S FEEDING **if child has ANAEMIA OR VERY LOW WEIGHT or is less than 2 years old.** Do you breastfeed your child? Yes ✓ No__ If Yes, how many times in 24 hours? 5 times. Do you breastfeed during the night? Yes ✓ No__ Does the child take any other food or fluids? Yes ✓ No__ If Yes, what food or fluids? Cow's milk How many times per day? 3 times. What do you use to feed the child? Feeding bottle How large are servings? 100 ml Does the child receive his own serving? ___ Who feeds the child and how? _____ During this illness, has the child's feeding changed? Yes __ No ✓ If Yes, how?	Feeding Problems: Not breastfed often enough Giving Cow's milk Using feeding bottle

3.2.6 CHECKING IMMUNIZATION, VITAMIN A AND FOLIC ACID SUPPLEMENTATION STATUS



The immunization status of ***every sick child*** brought to a health facility should be checked. Illness is not a contraindication to immunization. In practice, sick children may be even more in need of protection provided by immunization than well children. A vaccine's ability to protect is not diminished in sick children.

As a rule, there are only four common situations that are contraindications to immunization of sick children:

Children who are ***being referred*** urgently to the hospital should not be immunized. There is no medical contraindication, but if the child dies, the vaccine may be incorrectly blamed for the death.

Live vaccines (BCG, measles, polio) should not be given to children with immunodeficiency diseases, or to children who are immunosuppressed due to malignant disease, therapy with immunosuppressive agents or irradiation. However, all the vaccines, including BCG and yellow fever, can be given to children who have, or are suspected of having, HIV infection but are not yet symptomatic.

DPT2/ DPT3 should not be given to children who have had convulsions or shock within three days of a previous dose of DPT. DT can be administered instead of DPT.

Illness is not a contraindication to immunization. A vaccine's ability to protect is not diminished in sick children.

DPT should not be given to children with recurrent convulsions or another active neurological disease of the central nervous system. DT can be administered instead of DPT.

***B*CG,** if not given at birth, can be given in the next visit

After checking immunization status, determine if the child needs vitamin A supplementation and/or prophylactic iron folic acid supplementation.

Example: Immunization status section of the case recording form.

CASE: *Salim is 4 months old. He has no general danger signs. He is classified as diarrhoea with NO DHYDRATION. His immunization record shows that he has received BCG, OPV0, OPV1, OPV2, DPT1, and DPT2 and HEP-B 1 and HEP-B 2 .*

MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Child's Name: *Salim* Age: *4 months* Weight: *5.5* kg Temperature: *36* C

ASK: What are the child's problems? *Cough* Initial Visit? ✓ Follow-up Visit?__

ASSESS (Circle all signs present) **CLASSIFY**

CHECK THE CHILD'S IMMUNIZATION STATUS Circle immunizations needed today

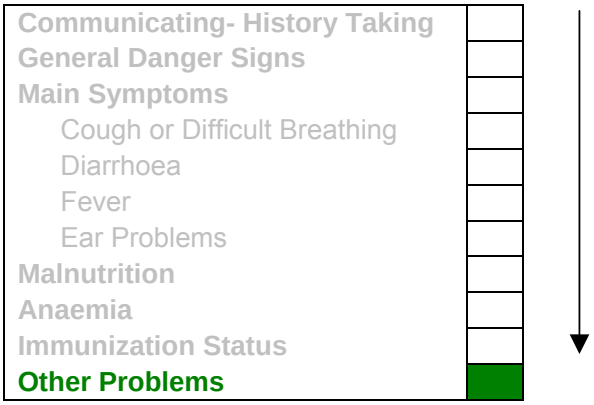
✓ BCG	✓ DPT 1	✓ DPT 2	DPT 3		DPT(Booster)	DT
✓ OPV 0	✓ OPV 1	✓ OPV 2	OPV 3	Measles	OPV	
	HEP-B 1	HEP-B 2	HEP-B 3			

Return for next immunization on:

Measles at 9 months age

(Date)

3.2.7 ASSESSING OTHER PROBLEMS



The IMNCI clinical guidelines focus on five main symptoms. In addition, the assessment steps within each main symptom take into account several other common problems. For example, conditions such as meningitis, sepsis, tuberculosis, conjunctivitis, and different causes of fever such as ear infection and sore throat are routinely assessed within the IMNCI case management process. If the guidelines are correctly applied, children with these conditions will receive presumptive treatment or urgent referral.

Nevertheless, health care providers still need to consider other causes of severe or acute illness. It is important to address the child's other complaints and to ask questions about the caretaker's health (usually, the mother's).

3.3 TREATMENT PROCEDURES FOR SICK CHILDREN

IMNCI classifications are not necessarily specific diagnoses, but they indicate what *action* needs to be taken. In the IMNCI guidelines, all classifications are colour coded: pink calls for hospital referral or admission, yellow for initiation of treatment, and green means that the child can be sent home with careful advice on when to return. After completion of the assessment and classification procedure, the next step is to identify treatment.

3.3.1 REFERRAL OF CHILDREN AGE 2 MONTHS UP TO 5 YEARS

All infants and children with a severe classification (pink) are referred to a hospital as soon as assessment is completed and necessary pre-referral treatment is administered. Conditions requiring urgent referral are listed in Figure 4.

> **Note:** If a child only has severe dehydration and no other severe classification, and IV infusion is available in the outpatient clinic, an attempt should be made to rehydrate the sick child.

Successful referral of severely ill children to the hospital depends on effective counselling of the caretaker. If s/he does not accept referral, available options (to treat the child by repeated clinic or home visits) should be considered. If the caretaker accepts referral, s/he should be given a short, clear referral note, and should get information on what to do during referral transport, particularly if the hospital is distant.

Urgent Pre-referral Treatments for Children Age 2 Months Up To 5 Years (see Figure 4)

Appropriate antibiotic
Quinine (for severe malaria)
Vitamin A
Prevention of hypoglycemia with breastmilk or sugar water
Oral antimalarial
Paracetamol for high fever (38.5°C or above) or pain
Tetracycline eye ointment (if clouding of the cornea or pus draining from eye)
ORS solution so that the mother can give frequent sips on the way to the hospital

Note: The first four treatments above are urgent because they can prevent serious consequences such as progression of bacterial meningitis or cerebral malaria, corneal rupture due to lack of vitamin A, or brain damage from low blood sugar. The other listed treatments are also important to prevent worsening of the illness.

Non-urgent treatments, e.g., wicking a draining ear or providing oral iron treatment, should be deferred to avoid delaying referral or confusing the caretaker.

If a child does not need ***urgent*** referral, check to see if the child needs ***non-urgent referral*** for further assessment; for example, for a cough that has lasted more than 30 days, or for fever that has lasted five days or more. These referrals are not as urgent, and other necessary treatments may be done before transporting for referral.

URGENT PRE-REFERRAL TREATMENTS FOR THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS	
CLASSIFICATION	**TREATMENT**
	For all children before referral: Prevent low blood sugar by giving breastmilk or sugar water.
DANGER SIGN- CONVULSIONS	If the child is convulsing, give diazepam (10 mg/2 ml solution) in dose 0.2 mg per kg (0.05 ml/kg) IV or rectally; if convulsions continue after 10 minutes, give a second dose of diazepam.
SEVERE PNEUMONIA OR VERY SEVERE DISEASE	Give first dose of IV or intramuscular chloramphenicol (40 mg/kg). Options for an intramuscular antibiotic for pre-referral use include ampicillin plus gentamicin combination, OR ceftriaxone.
VERY SEVERE FEBRILE DISEASE	Give one dose of paracetamol for high fever (38.5°C or above). Give first dose of intramuscular quinine for severe malaria unless no malaria risk. Give first dose of an appropriate antibiotic.
SEVERE COMPLICATED MEASLES	Give first dose of appropriate antibiotic. Give vitamin A. If there is clouding of the cornea or pus draining from the eye, apply tetracycline eye ointment.
SEVERE DEHYDRATION	**WHO Treatment Plan C** If there is no other severe classification, IV fluids should be given in the outpatient clinic according to WHO Treatment Plan C (see page 17 of the chartbooklet)**.** Give 100 ml/kg IV fluids. Ringer's lactate solution is the preferred commercially available solution. Normal saline does not correct acidosis or replace potassium losses, but can be used. Plain glucose or dextrose solutions are not acceptable for the treatment of severe dehydration. If IV infusion is not possible, urgent referral to the hospital for IV treatment is recommended. When referral takes more than 30 minutes, fluids should be given by nasogastric tube. If none of these are possible and the child can drink, ORS must be given by mouth.

URGENT PRE-REFERRAL TREATMENTS FOR THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS	
	Note: In areas where cholera cannot be excluded, children more than 2 years old with severe dehydration should be given a single dose of doxycyline.
SEVERE PERSISTENT DIARRHOEA	If there is no other severe classification, treat dehydration before referral using WHO Treatment Plan B for some dehydration and Plan C for severe dehydration. Then refer to hospital.
MASTOIDITIS	Give first dose of intramuscular chloramphenicol (40 mg/kg). Options for an intramuscular antibiotic for pre-referral use include ampicillin plus gentamicin combination OR ceftriaxone. Give first dose of paracetamol for pain.
SEVERE MALNUTRITION	Give first dose of vitamin A.

3.3.2 TREATMENT IN OUTPATIENT CLINICS

The treatment associated with each non-referral classification (***yellow and green***) is clearly spelled out in the IMNCI guidelines chart booklet. Treatment uses a minimum of affordable essential drugs.

3.3.2.1 ORAL DRUGS

Always start with a first-line drug. These are usually less expensive, more readily available and easier to administer. Give a second-line drug (which are usually more expensive and more difficult to obtain) only if a first-line drug is not available, or if the child's illness does not respond to the first-line drug. The health care provider also needs to teach the mother or caretaker how to give oral drugs at home.

Oral antibiotics. The IMNCI chart shows *how many days* and *how many times* each day to give the antibiotic. Most antibiotics should be given for five days. Only cholera cases receive antibiotics for three days. The number of times to give the antibiotic each day varies (two, three or four times per day). Determine the correct dose of antibiotic based on the child's weight. If the child's weight is not available, use the child's age. Always check if the same antibiotic can be used for treatment of different classifications a child may have. For example, the same antibiotic could be used to treat both *pneumonia* and *acute ear infection.*

Oral antimalarials. Chloroquine and sulfadoxine-pyrimethamine are the first-line and second-line drugs recommended by the National Anti-Malaria Program in India. Treatment regimes depend on whether the child is from high or low malaria risk area.

In high malaria risk areas, chloroquine is given for three days with a single dose of primaquin (to children older than one year) on the first day. This is the complete treatment of *P. falciparum* malaria. If the blood smear is found to be *P.vivax* positive, the child (older than one year) should be given primaquin for 5 days.

In low malaria risk areas, presumptive treatment is chloroquine for one day. If the smear is positive for *P. falciparum,* the child should be given chloroquine for one more day and if older than one year, a single dose of primaquin. If the blood smear is found to be *P.vivax* positive, the child should be given chloroquine for one more day and if older than one year, primaquin for 5 days.

Paracetamol. If a child has a high fever, give one dose of paracetamol in the clinic. If the child has ear pain, give the mother enough paracetamol for one day, that is, four doses. Tell her to give one dose every six hours or until the ear pain is gone.

Iron. A child with *anaemia* needs iron. Give syrup to the child under 12 months of age. If the child is 12 months or older, give iron tablets. Give the mother enough iron for 14 days. Tell her to give her child one dose daily for those 14 days. Ask her to return for more iron in 14 days. Also tell her that the iron may make the child's stools black.

Note: If a child with some pallor is receiving the antimalarial sulfadoxine-pyrimethamine, do not give iron/folate tablets until a follow-up visit in two weeks. The iron/folate may interfere with the action of the sulfadoxine-pyrimethamine that contains antifolate drugs. If an iron syrup does not contain folate, a child can be given an iron syrup with sulfadoxine-pyrimethamine.

Vitamin A. Vitamin A is given to a child with *measles* or *severe malnutrition*. Vitamin A helps resist the measles virus infection in the eye as well as in the layer of cells that line the lung, gut, mouth and throat. It may also help the immune system to prevent other infections. Vitamin A is available in capsule and syrup form. Use the child's age to determine the dose, and give two doses. Give the first dose to the child in the clinic. Give the second dose to the mother to give her child the next day at home. Every dose of Vitamin A should be recorded because of danger of an overdose.

Safe remedy for cough and cold. There is no evidence that commercial cough and cold remedies are any more effective than simple home remedies in relieving a cough or soothing a sore throat. Suppression of a cough is not desirable because cough is a physiological reflex to eliminate lower respiratory tract secretion. Breastmilk alone is a good soothing remedy.

3.3.2.2 TREATMENT OF LOCAL INFECTIONS

If the child, age 2 months up to 5 years, has a local infection, the mother or caretaker should be taught how to treat the infection at home.

Instructions may be given about how to:

- Treat eye infection with tetracycline eye ointment;
- Dry the ear by wicking to treat ear infection;
- Treat mouth ulcers with gentian violet;
- Soothe the throat and relieve the cough with a safe remedy.

Eye Treatment for Children Being Referred

If the child will be referred, and the child needs treatment with tetracycline eye ointment, clean the eye gently. Pull down the lower lid. Squirt the first dose of tetracycline eye ointment onto the lower eyelid. The dose is about the size of a grain of rice.

TREATMENT IN THE OUTPATIENT HEALTH FACILITY OF THE SICK CHILD FROM AGE 2 MONTHS UP TO 5 YEARS

CLASSIFICATION	TREATMENT
PNEUMONIA	Give appropriate antibiotic for five days. The treatment of non-severe pneumonia can utilise a five-day course of either oral cotrimoxazole or amoxicillin. These two oral antibiotics are usually effective treatment for *Streptococcus pneumoniae* and *Haemophilus influenzae*. Both antibiotics are relatively inexpensive, widely available, and are on the essential drug list of the Ministry of Health. [The advantages of cotrimoxazole are that it is used twice a day, is affordable and compliance is good. It has been shown that with a twice-daily dosing, compliance levels can reach 75 percent or higher. Amoxicillin is almost twice as expensive as cotrimoxazole and standard dosages are usually given three times a day. The compliance with three-times-a-day dosing is about 60 percent or less.] Soothe the throat and relieve the cough with a safe remedy.
NO PNEUMONIA – COUGH OR COLD	Soothe the throat and relieve the cough with a safe remedy.

TREATMENT IN THE OUTPATIENT HEALTH FACILITY OF THE SICK CHILD FROM AGE 2 MONTHS UP TO 5 YEARS

SOME DEHYDRATION

WHO Treatment Plan B

Give initial treatment with ORS over a period of four hours. The approximate amount of ORS required (in ml) can be calculated by multiplying the child's weight (in kg) times 75; during these four hours, the mother slowly gives the recommended amount of ORS by spoonfuls or sips. Note: If the child is breast-fed, breast-feeding should continue.

After four hours, the child is reassessed and reclassified for dehydration, and feeding should begin; resuming feeding early is important to provide required amounts of potassium and glucose. When there are no signs of dehydration, the child is put on Plan A. If there is still some dehydration, Plan B should be repeated. If the child now has severe dehydration, the child should be put on Plan C.

NO DEHYDRATION

WHO Treatment Plan A

Plan A focuses on the three rules of home treatment: give extra fluids, continue feeding, and advise the caretaker when to return to the doctor (if the child develops blood in the stool, drinks poorly, becomes sicker, or is not better in three days).

Fluids should be given as soon as diarrhoea starts; the child should take as much as s/he wants. Correct home therapy can prevent dehydration in many cases. ORS may be used at home to prevent dehydration. However, other fluids that are commonly available in the home may be less costly, more convenient and almost as effective. Most fluids that a child normally takes can also be used for home therapy especially when given with food.

Recommended home fluid should be:

Safe when given in large volumes. Very sweet tea, soft drinks, and sweetened fruit drinks *should be avoided.* These are often hyperosmolar owing to their high sugar content (less than 300 mOsm/L). They can cause osmotic diarrhoea, worsening dehydration and hypenatremia. Also to be avoided are fluids with purgative action and stimulants (e.g., coffee, some medicinal teas or infusions).

Easy to prepare. The recipe should be familiar and its preparation should not require much effort or time. The required ingredients and measuring utensils should be readily available and inexpensive.

Acceptable. The fluid should be one that the mother is willing to give freely to a child with diarrhoea and that the child will readily accept.

Effective. Fluids that are safe are also effective. Most effective are fluids that contain carbohydrates and protein and some salt. However, nearly the same result is obtained when fluids are given freely along with weaning foods that contain salt.

TREATMENT IN THE OUTPATIENT HEALTH FACILITY OF THE SICK CHILD FROM AGE 2 MONTHS UP TO 5 YEARS	
PERSISTENT DIARRHOEA	Encourage the mother to continue breastfeeding. If yoghurt is available, give it in place of any animal milk usually taken by the child; yoghurt contains less lactose and is better tolerated. If animal milk must be given, limit it to 50 ml/kg per day; greater amounts may aggravate the diarrhoea. If milk is given, mix it with the child's cereal and do not dilute the milk. At least half of the child's energy intake should come from foods other than milk or milk products. Foods that are hyperosmolar (these are usually foods or drinks made very sweet by the addition of sucrose, such as soft drinks or commercial fruit drinks) should be avoided. They can worsen diarrhoea. Food needs to be given in frequent, small meals, at least six times a day. All children with persistent diarrhoea should receive supplementary multivitamins and minerals (copper, iron, magnesium, zinc) each day for two weeks.
DYSENTERY	The four key elements of dysentery treatment are: Antibiotics Fluids Feeding Follow-up Selection of an antibiotic is based on sensitivity patterns of strains of *Shigella* isolated in the area (nalidixic acid is the drug of choice in many areas). Recommended duration of treatment is five days. If after two days (during follow-up) there is no improvement, the antibiotic should be stopped and a different one used.
MALARIA	Give oral antimalarial drugs according to the malaria risk in the area. In high malaria risk areas, chloroquine for three days with a single dose of primaquin (to children older than one year) on the first day to all children. If the blood smear is *P.vivax* positive, the child (older than one year) should be additionally given primaquin for 5 days. In low malaria risk areas, presumptive treatment is chloroquine for one day. If the smear is positive for *P. falciparum,* the child should be given chloroquine for one more day and if older than one year, a single dose of primaquin. If the blood smear is found to be *P.vivax* positive, the child should be given chloroquine for one more day and if older than one year, primaquin for 5 days.
FEVER – MALARIA UNLIKELY **POSSIBLE BACTERIAL INFECTION** **UNCOMPLICATED FEVER**	Give one dose of paracetamol for high fever (38.5˚C or above). Treat other obvious causes of fever.

TREATMENT IN THE OUTPATIENT HEALTH FACILITY OF THE SICK CHILD FROM AGE 2 MONTHS UP TO 5 YEARS	
MEASLES WITH EYE OR MOUTH COMPLICATIONS	Give first dose of Vitamin A. If clouding of cornea or pus draining from the eye, apply tetracycline eye ointment. If mouth ulcers, treat with gentian violet.
MEASLES CURRENTLY (OR WITHIN THE LAST 3 MONTHS)	Give first dose of Vitamin A.
ACUTE EAR INFECTION	Give appropriate antibiotic for five days. Give one dose of paracetamol for pain. Dry the ear by wicking.
CHRONIC EAR INFECTION	Dry the ear by wicking.
VERY LOW WEIGHT	Assess the child's feeding and counsel the mother accordingly on feeding.
NOT VERY LOW WEIGHT	If the child is less than 2 years old, assess the child's feeding and counsel the mother accordingly on feeding.
ANAEMIA	Give iron folic acid therapy for 14 days. Assess the child's feeding and counsel the mother accordingly on feeding.
NO ANAEMIA AND NOT LOW WEIGHT	Give prophylactic iron folic acid if child 12 months or older.

3.3.2.3. COUNSELLING A MOTHER OR CARETAKER

A child who is seen at the clinic needs to continue treatment, feeding and fluids at home. The child's mother or caretaker also needs to recognize when the child is not improving, or is becoming sicker. The success of home treatment depends on how well the mother or caretaker knows how to give treatment, understands its importance and knows when to return to a health care provider.

The steps to good communication were listed earlier. Some advice is simple; other advice requires teaching the mother or caretaker **how to do a task**. When you teach a mother how to treat a child, use three basic teaching steps: give information; show an example; let her practice.

When teaching the mother or caretaker: (1) use words that s/he understands; (2) use teaching aids that are familiar; (3) give feedback when s/he practices, praise what was done well and make corrections; (4) allow more practice, if needed; and (5) encourage the mother or caretaker to ask questions and then answer all questions. Finally, it is important to check the mother's or caretaker's understanding.

The content of the actual advice will depend on the child's condition and classifications. Below are essential elements that should be considered when counselling a mother or caretaker:

Advise to continue feeding and increase fluids during illness;
Teach how to give oral drugs or to treat local infection;
Counsel to solve feeding problems (if any);
Advise when to return.

Advise to continue feeding and increase fluids: The IMNCI guidelines give feeding recommendations for different age groups. These feeding recommendations are appropriate both when the child is sick and when the child is healthy. During illness, children's appetites and thirst may be decreased. However, mothers and caretakers should be counselled to increase fluids and to offer the types of food recommended for the child's age, as often as recommended, even though a child may take small amounts at each feeding. After illness, good feeding helps make up for weight loss and helps prevent malnutrition. When the child is well, good feeding helps prevent future illness.

Teach how to give oral drugs or to treat local infection at home: Simple steps should be followed when teaching a mother or caretaker how to give oral drugs or treat local infections. These steps include: (1) determine the appropriate drugs and dosage for the child's age or weight; (2) tell the mother or caretaker what the treatment is and why it should be given; (3) demonstrate how to measure a dose; (4) describe the treatment steps; (5) watch the mother or caretaker practise measuring a dose; (6) ask the mother or caretaker to give the dose to the child; (7) explain carefully how, and how often, to do the treatment at home; (8) explain that ***All*** oral drug tablets or syrups must be used to finish the course of treatment, even if the child gets better; (9) check the mother's or caretaker's understanding.

Counsel to solve feeding problems (if any): Based on the type of problems identified, it is important to give correct advice about the nutrition of the young child both during and after illness. Sound advice that promotes breastfeeding, improved weaning practices with locally appropriate energy- and nutrient-rich foods, and giving nutritious snacks to children 2 years or older, can counter the adverse effect infections have on nutritional status. Specific and appropriate complementary foods should be recommended and the frequency of feeding by age should be explained clearly. Encourage exclusive breastfeeding up to six months; discourage use of feeding bottles for children of any age; and provide guidance on how to solve important problems with breastfeeding. The latter includes assessing the adequacy of attachment and suckling. Specific feeding recommendations should be provided for children with persistent diarrhoea. Feeding counselling relevant to identified feeding problems is described in the IMNCI national feeding recommendations.

Advise when to return: Every mother or caretaker who is taking a sick child home needs to be advised about when to return to a health facility. The health care provider should (a) teach signs that mean to return immediately for further care; (b) advise when to return for a follow-up visit; and (c) schedule the next well-child or immunization visit.

The table below lists the specific times to advise a mother or caretaker to return to a health facility.

A) IMMEDIATELY	
Advise to return immediately if the child has any of these signs.	
Any sick child	Not able to drink or drink or breastfeed Becomes sicker Develops a fever
If child has no PNEUMONIA: COUGH OR COLD, also return if:	Fast breathing Difficult breathing
If child has diarrhoea, also return if:	Blood in stool Drinking poorly

B) FOR FOLLOW-UP VISIT	
If the child has:	Return for follow-up not later than:
PNEUMONIA DYSENTERY MALARIA, if fever persists FEVER MALARIA UNLIKELY , if fever persists MEASLES WITH EYE OR MOUTH COMPLICATIONS	2 days
DIARRHOEA, if not improving PERSISTENT DIARRHOEA ACUTE EAR INFECTION	5 days

CHRONIC EAR INFECTION FEEDING PROBLEM ANY OTHER ILLNESS, if not improving	
ANAEMIA	14 days
VERY LOW WEIGHT FOR AGE	30 days

C) NEXT WELL-CHILD VISIT

Advise when to return for the next immunization according to immunization schedule.

3.3.2.4. FOLLOW-UP CARE

Some sick children will need to return for follow-up care. At a follow-up visit, see if the child is improving on the drug or other treatment that was prescribed. Some children may not respond to a particular antibiotic or antimalarial, and may need to try a second-line drug. Children with persistent diarrhoea also need follow-up to be sure that the diarrhoea has stopped. Children with fever or eye infection need to be seen if they are not improving. Follow-up is especially important for children with a feeding problem to ensure they are being fed adequately and are gaining weight.

When a child comes for follow-up of an illness, ask the mother or caretaker if the child has developed any ***new*** problems. If she answers yes, the child requires a full assessment: check for general danger signs and assess all the main symptoms and the child's nutritional status.

If the child ***does not have a new*** problem, use the IMNCI follow-up instructions for each specific problem:

Assess the child according to the instructions;
Use the information about the child's signs to select the appropriate treatment;
Give the treatment.

Note: If a child who comes for follow-up has several problems and is getting worse, or returns repeatedly with chronic problems that do not respond to treatment, the child should be referred to a hospital.

The IMNCI charts contain detailed instructions on how to conduct follow-up visits for different diseases. Follow-up visits are recommended for **sick children classified as having**:

Pneumonia
Diarrhoea
Dysentery
Malaria, if fever persists
Fever – Malaria Unlikely, if fever persists

Measles with eye or mouth complications
Persistent diarrhoea
Ear infection
Feeding problem
Anaemia
Very low weight for age

CHAPTER 4

PRINCIPLES OF MANAGEMENT OF SICK CHILDREN IN A SMALL HOSPITAL

Severely sick children who are referred to a hospital should be further assessed using the expertise and diagnostic capabilities of the hospital setting. However, the first step in assessing children referred to a hospital should be triage — the process of rapid screening to decide in which of the following groups a sick child belongs:

Those with emergency signs who require immediate emergency treatment: obstructed breathing, severe respiratory distress, central cyanosis, signs of shock, coma, convulsions, or signs of severe dehydration.

Those with priority signs who should be given priority while waiting in the queue so they can be assessed and treated without delay: visible severe wasting, oedema of both feet, severe palmar pallor, any sick young infant (less than 2 months), lethargy, continual irritability and restlessness, major burns, any respiratory distress, or urgent referral note from another health facility.

Non-urgent cases that have neither emergency nor priority signs.

Then according to identified priority order, sick children must be examined fully so that no important sign will be missed. The following laboratory investigations need to be available at the small hospital in order to manage sick children:

Haemoglobin or packed cell volume (PCV)
Blood smear for malaria
Blood glucose
Microscopy of CSF and urine
Blood grouping and cross-matching

In addition, for sick young infants (under 1 week old), the laboratory investigation for blood bilirubin should be available. Other investigations (such as chest X-ray and stool microscopy) are not considered essential, but could help in complicated cases.

When a child with a severe (pink) classification is admitted to a hospital, a list of possible diagnoses should be drawn up. Remember, a sick child often has more than one diagnosis or clinical problem requiring treatment. The diagnoses in the table on the next page should be considered first for each category.

An appropriate treatment is given to sick children based on the results of the diagnostic procedures and according to the national clinical guidelines. More detailed information about management of children at the first-level referral hospitals are in the manual ***MANAGEMENT OF THE CHILD WITH A SERIOUS INFECTION OR SEVERE MALNUTRITION: GUIDELINES FOR CARE AT***

THE FIRST REFERRAL LEVEL IN DEVELOPING COUNTRIES. In addition to describing the most essential treatment procedures, this document outlines the main principles of monitoring the child's progress. The key aspects in monitoring the progress of a sick child are:

Devising a monitoring plan. The frequency will depend on the nature and severity of the child's clinical condition.

Using a standard chart to record essential information such as correct administration of the treatment, expected progress, possible adverse effects of the treatment, complications that may arise, possible alternative diagnosis.

Bringing these problems to the attention of senior staff and, if necessary, changing the treatment accordingly.

Possible diagnoses of children referred to hospital with four main symptoms

MAIN SYMPTOMS AND POSSIBLE DIAGNOSES			
Unconsciousness, Lethargy or Convulsions	**Cough or Difficult Breathing**	**Diarrhoea**	**Fever**
Meningitis Cerebral malaria (only in children exposed to *P. falciparum* transmission, often seasonal) Febrile convulsions (not likely to be cause of unconsciousness) Hypoglycaemia (always seek the cause) Head injury Poisoning Shock (can cause lethargy or unconsciousness, but is unlikely to cause convulsions) Acute glomerulonephritis with encephalopathy Diabetic ketoacidosis The following are possible diagnoses of **young infants** referred to the hospital with lethargy: Birth asphyxia, hypoxic ischaemic encephalopathy, birth trauma Intracranial haemorrhage Haemolytic disease of the	Pneumonia Malaria Severe anaemia Cardiac failure Congenital heart disease Tuberculosis Pertussis, foreign body Empyema Pneumothorax Pneumocystis pneumonia Asthma	Acute watery diarrhoea Cholera Dysentery Persistent diarrhoea Diarrhoea with severe malnutrition Intussusception	Malaria Septicaemia Typhoid Urinary tract infection HIV infection Meningitis Otitis media Osteomyelitis Septic arthritis Skin and soft tissue infection Pneumonia Viral infections Throat abscess Sinusitis Measles Meningococcal infection Dengue haemorrhagic fever

MAIN SYMPTOMS AND POSSIBLE DIAGNOSES			
Unconsciousness, Lethargy or Convulsions	**Cough or Difficult Breathing**	**Diarrhoea**	**Fever**
newborn, kernicterus Neonatal tetanus Meningitis Sepsis			