

Study Unit 5

Integrated Management of Childhood Illness (IMCI)

Integrated Management of Childhood Illness Module

- Definition of IMCI
- Strategies
- Implementation of IMCI
- Intervention models
- Assessing and classification of child diseases

Study Unit Duration

This Study Session requires 4 hours of formal study time. You may spend an additional 2-3 hours for revision

Introduction

This chapters covers, Background of IMCI, Definition, strategies, intervention models and assessment of different diseases in children, diagnosis, treatment and prevention measures.

Learning Outcomes of Study Unit 5

After you complete the study unit, you would be able to:

- 5.1 Define IMCI and explain why it is better than other management Strategies.
- 5.2 Explain IMCI intervention models and the steps taken during the diagnosis of children and tell how to communicate with a caregiver and get important information for IMCI

5.1 Background

Globally, 5.2 million children under five die each year from illnesses that may be prevented or treated in 2019 (UNICEF, 2021,). Acute respiratory infections, malaria, Diarrhoea, measles, and malnutrition are all Integrated Management of Childhood Illness (IMCI) targets. Antibiotics, antimalarials, and oral rehydration therapy might have avoided many of these deaths. This paper looks at how community health workers (CHWs) or their equivalents can help unwell kids get antibiotics (WHO, 1997).

According to a 2013 UNICEF study, the worldwide under-five mortality rate has dropped by 47% since 1990, yet 216 million children perished in the next 23 years. Pneumonia, diarrhea, malaria, and avoidable newborn causes (including NP) still cause significant deaths (UNICEF, 2013).

Globally, the under-five mortality rate fell from 93 per 1,000 live births in 1990 to 38 in 2019. Pneumonia, diarrhea, and malaria killed an estimated 2.2 million children under five years in 2012, consider a third of all deaths in this region (UNICEF, 2013).

IMCI reduces children's mortality in impoverished nations. However, little is known about how health personnel in Sub-Saharan Africa follow government recommendations. Millions of parents take their children to hospitals, clinics, pharmacies, physicians, and traditional healers every day. The research found that many unwell children are not appropriately examined or treated, and their parents are misinformed (Krüger, C.1, Heinzl-Gutenbrunner, M.2 & Ali, M (2017)).

5.1.1 Definition

What is IMCI?

IMCI is a complete approach to child health that emphasizes the complete kid's well-being. IMCI's objective is to prevent mortality, disease, and impairment in children under the age of 5 and to enhance their growth and development. IMCI is comprised of both preventative and curative components that are conducted by families, communities, and health care providers (WHO,2005).

5.1.2 The approach includes three main components:

1. Improving healthcare workers' case management skills
2. Enhancing broader healthcare systems
3. Promoting health habits in the home and the community.

The IMCI method enhances correct diagnosis of childhood diseases in outpatient settings, assures proper integrated treatment of all major illnesses, strengthens caregiver counselling, and expedites the referral of critically ill children in health institutions. It supports appropriate care-seeking habits, improved nutrition, preventative care, and the proper execution of prescribed treatment in the home environment.

5.1.3 Why is IMCI superior to single-condition methods?

Infants sent to the developing world for medical care frequently have many diagnoses, making a single diagnosis hard. IMCI is a comprehensive method that considers a multitude of issues that place children at significant risk. It assures comprehensive treatment of major pediatric ailments, emphasizing disease prevention through vaccination and improved nutrition (WHO, 2005).

5.1.4 How is IMCI applied?

The process of introducing and implementing the IMCI strategy in a country is a staged one that involves close collaboration with current health programs and services. It entails strong cooperation with local governments and ministries of health to prepare and adapt the approach's principles to local situations. The primary steps are as follows:

1. Implementing a comprehensive approach to child health and development as part of the country's health strategy.
2. Customizing regular IMCI clinical recommendations to the country's needs, accessible pharmaceuticals, legislation, and the indigenous cuisine and language spoken by the population.
3. Improving treatment in community clinics by educating health professionals in innovative techniques for examining and treating children and effective parent counseling.
4. Enabling enhanced care by guaranteeing an adequate supply of appropriate low-cost medications and essential equipment.
5. Strengthening hospital treatment for children who are too ill to be seen in an outpatient clinic.
6. Establishing community-based support systems for illness prevention, assisting families in caring for sick children, and transporting children to clinics or hospitals as needed.
7. IMCI has been implemented in more than 75 countries worldwide.

5.2 Intervention models

CHW initiatives that treat pediatric illness in the community may be defined by the following characteristics: antimicrobial usage, referral system type, antimicrobial kind, and systematic methods to identify unwell children. Table 5.1 summarizes the seven categories of programs evaluated and discusses them in further detail below.

History taking and Physical examination of the child

- The History and Physical Exam, commonly referred to as the "H&P," serves as the beginning point for the patient's "narrative" regarding why they sought or are now getting medical treatment.
- Conducting a history and physical examination on children is not the same as it is for adults and presents a distinct set of obstacles. Symptoms are often reported by a parent or guardian, who may be unable to adequately relay and explain the child's worries to

the examiner. To bridge the gaps, you must possess strong communication skills and the ability to establish relationships with both children and their families. Additionally, you must pay special attention to pediatric-specific growth and developmental concerns and be aware that many diseases appear differently in children than in adults.

- Based on an available medical record, the following essential components of history must be verified:
- history of the existing disease
- Prenatal, birth, and postnatal history; •
- previous medical and surgical history;
- growth and development; medicines, allergies, vaccines, family history; and • social history and system evaluation.

5.2.1 Step 1. The initial step is to establish contact with the caregiver/Guardian.

- Greeting and ask the reason for coming
- Ask child age
- Ask history sign and symptom in detail including the duration and onset of
- Ask or new or follow up
- CHECK FOR GENERAL DANGER SIGNS such as
 - Unable to drink or breastfeed
 - Vomits everything
 - Convulsions
 - Lethargic or unconscious
- ASSESS MAIN SYMPTOMS
 - Cough or difficult breathing
 - Fever
 - Malnutrition and anemia
 - Check immunizations
 - Diarrhoea

- Ear problems
- HIV status
- Others

General danger signs

The session's purpose is for you to be able to: • Determine on pre-referral therapies for children who exhibit a danger sign or another condition that requires referral to a health facility.

- Utilize the Sick Kid Recording Form to assist in making treatment options for the child who will be referred.
- Assist with referrals and compose a referral letter.
- Maintain contact with the youngster at home

General danger signs

IMCI community practitioners employ general risk indications to detect sick children and refer them to the hospital immediately. When a child is being evaluated at IMCI, we ask the first question regarding general danger signals.

A general risk indicator is that the infant cannot drink or breastfeed, vomits everything, has convulsions with this disease, or is sluggish or unconscious. It's impossible for children who can't drink or who are vomiting to take any medication or keep hydrated. There are three types of hazard signs:

Pre-referral therapy should be identified, and an immediate referral should be made. A warning sign can be deemed an urgent referral if it indicates the following danger:

1. Vomits everything, has convulsions and is lethargic or unconscious. Unable to drink or breastfeed.
2. An unrequired referral that a community health worker can address can be identified and treated by a community health worker so that a caregiver can get counselling for subsequent follow-up and care. ORS C can be prepared and administered at home by wiping then use a towel or sponge dipped in warm

water to cool their skin a febrile child, hand hygiene practice, breastfeeding,

A story: Ali is in a terrible state of health. Two days of fever and an enlarged chest have him bedridden. The MUAC strap shows a red reading for him. Ali is still able to consume alcoholic beverages, but he has no desire to consume food. The community health professional tells Ali that he has to get to the hospital as soon as possible. She informs him that Ali is in critical condition. He need medical attention that can only be provided by a hospital. Mrs. Fetuma consents to the idea of taking Ali with her. The community health worker begins treatment before they go. She assists Mrs. Fetuma in administering amoxicillin to her son's chest in drawing (severe pneumonia) and an oral antimalarial AL to her son's fever for the first time. It's her way of explaining that Ali will continue to receive therapy at the hospital. She recommends that Mrs. Fetuma continue to provide breast milk and other fluids to the baby while they're traveling to the hospital. In order to keep Ali from overheating, she requests that she drape a light blanket over him. The community health professional is fully aware that she must do all in her power to assist with the referral in any way possible. Ali has to get to the hospital as soon as possible.

using a bed net, and treating water. If a child has a fever or dehydration, it can be treated with antipyretics, vitamins, ointments, anthelmintics, or oral rehydration salts (ORS).

Home remedies for febrile children include wiping their skin with a washcloth or sponge dipped in room-temperature water, hand hygiene, nursing, and utilizing a bed-net.

CASE STUDY 1

According to a recommendation note, the community health worker has sent Ali to the medical institution to treat him. She helps Mrs. Fetuma and her kid obtain a ride to the medical institution by walking with them to the highway. Mrs. Fetuma wonders aloud as they go, "Will Ali have to go to the hospital?" Mrs. Fetuma: This is something the community health worker denies

knowing. The health facility's nurse will make the final call on how best to care for Ali. Even if Ali is admitted to the hospital, the community health worker promises to locate neighbors to assist the family until Ali is discharged from the facility. Mrs. Fetuma does not need to be concerned about her home life.

- What did the health worker in the community do to assist Ali in getting care at the hospital?
 - What actions did the community health worker use to persuade Mrs. Fetuma to allow Ali to accompany her to the medical facility?
 - What was the first course of action Ali took?
 - As soon as Ali arrived at the healthcare institution, the community health worker did everything she could to help him obtain care as quickly as possible.

In some cases, taking the youngster immediately to the hospital is the best option. Talk to the facilitator about whether or not you should ever take the kid to the hospital on your own.

5.2.2 Step 2. Begin treatment

A child in critical condition needs immediate initiation of therapy. To begin pre-referral treatment, you'll need to wait until after your kid has arrived at the medical institution. When a youngster has a warning indication like diarrhea, a fever, or quick breathing, you'll start treating them immediately. In addition, you'll begin to treating a youngster with chest indrawing, which is a potentially dangerous symptom.

Note:

Pre-referral therapy does not include taking a zinc supplement. No, you don't have to provide it prior to referring someone to us. Pre-referral treatment may or may not serve the same purpose as the kid being referred.(WHO, 2005)

A similar therapy is given to those referred and those who will be prescribed the medication. When the kid receives the first dosage of the drug, the medication will begin to assist the youngster

in getting to the hospital. Pre-referral therapies include ORS, oral antimalarial AL, artesunate suppository, and amoxicillin.

For instance, a youngster who has had a cough for at least 14 days qualifies.

Is there a therapy for the cough before a referral is made? There is no pre-referral therapy for a cough, despite what some people believe. However, if the youngster also has diarrhea, you will begin a therapy before referring them. What is your Diarrhoea pre-referral treatment? This child has diarrhea and will be treated with ORS regardless of the cause for referral.

A quick diagnostic test for malaria will not be performed if a kid has a fever and a danger sign and is referred; instead, you will administer an antimalarial medication before referral: It's impossible to administer an oral medication to a feverish infant who is convulsing, unusually drowsy or unconscious, unable to drink or feed, or vomiting everything. Rectal artesunate suppository is administered. This youngster is very ill and needs medical attention right away. Rectal artesunate therapy will begin aiding the youngster even before he arrives at the medical centre. How much pre-referral treatment should I get? Request that the caregiver implant the suppository and then insert it as shown in Figure 5.1, using their assistance.



Figure 5.1 How to prepare a child for suppository and how to insert it

Source: https://www.who.int/maternal_child_adolescent/documents/9789241548045-2.pdf .

Remember:

Children who cannot drink should not be given oral medications. Don't give an oral medication to a feverish youngster who is convulsing, unusually drowsy, comatose, unable to drink or eat anything, or who is vomiting everything. Immediately take the youngster to a health center and provide the rectal artesunate suppository.

Revision Questions

Sara is 6 months old and has had a cough for 4 days with chest indrawing.

What is the justification for referring this child (the red flag)?

Ali is a four-year-old boy. He has a red MUAC strap reading and has had diarrhea for 6 days.

What prompted you to recommend this youngster (a danger indication or another issue)?

Note: Please discuss the risk indicator with the training facilitator and resolve it.

5.2.3 Step 3. Assessing and classifying a sick child aged 2 months to 59 months

Classification of a sick child is subjective and is determined by the type of symptom and its duration. Describes how to assess and classify unwell children, emphasizing the importance of disease indicators in determining suitable therapy. Care must be needed to find out about the child's difficulties and to examine the youngster for general danger signals.

Then inquire about the following four primary symptoms:

- Cough or breathing difficulty, • Diarrhea, • Fever, and • Ear trouble.

A youngster who exhibits one or more of the above-mentioned primary symptoms may be suffering from a severe disease. When the primary symptom is present, additional questions can be asked to assist in classifying the ailment. Check for malnutrition and anaemia in the youngster. Additionally, verify the child's vaccination status and analyze any additional concerns raised by the mother.

5.2.4 Step 4. Assessing, classifying, and treating a child with cough and breathing or acute respiratory infection

Pneumonia Epidemiology in children

Pneumonia is a lung infection. When a healthy individual breathes, tiny air sacs called alveoli fill the lungs. Pneumonia causes pus and fluid to clog the alveoli, making breathing difficult and limiting oxygen intake. Pneumonia is an illness that inflames the lungs' air sacs. Coughing up fluid or pus from swollen air sacs may be the result., fever, chills, and trouble breathing. Pneumonia is caused by bacteria, viruses, and fungus. Pneumonia can be minor or life-threatening. It affects newborns and young children, the elderly, and persons with health issues or compromised immune systems. Pneumonia is main of cause of infant mortality globally (WHO, report). It is the leading infectious disease killer of children. Illness. Pneumonia kills most poor people in low- and middle-income nations. Paediatric pneumonitis is particularly common in South Asia and Sub-Saharan Africa. Pneumonia kills more children under five than HIV/AIDS, diarrhea, and malaria combined. Half of all pneumonia fatalities in children under five occur in Sub-Saharan Africa.

In Horn of Africa Pneumonia has one of the highest rates, affecting an estimated 3,370,000 children yearly, contributing to 18% of all causes of mortality for over 40,000 children under five (5). In 2015, there were 14,561 pneumonia-related child deaths in Somalia, accounting for 24% of all child deaths. pneumonia causes 20% of child deaths in SUDAN. In 2018, Pneumonia caused 20 deaths per 1000 live births in children under five. Krüger, C.1, Heinzl-Gutenbrunner, M.2 & Ali, M (2017)).

Symptoms

Pneumonia symptoms vary based on the germ producing the illness, age, and overall health. Mild signs and symptoms resemble a cold or flu, but linger longer.

Signs and symptoms of Pneumonia may include:

- Chest pain when you breathe or cough
- Cough, which may produce phlegm
- Fatigue
- Fever, sweating and shaking chills
- Nausea, vomiting, or Diarrhoea
- Shortness of breath

Note:

Infected newborns and babies may not display symptoms. Or vomit, have a fever and cough, be restless, weary, and unable to eat.

Causes

A wide variety of bacteria can cause Pneumonia. Breathing air has a high concentration of bacteria and viruses, which are the most prevalent pathogens. In most cases, our body's immune system can keep these viruses from invading us through the respiratory system. Even if you are healthy in general, these bacteria might nevertheless overwhelm your immune system from time

to time. Bronchitis can be characterized as either acute or chronic depending on the type of bacteria that caused it and where you received the illness.

a) Community-acquired Pneumonia

Pneumonia obtained in the community is the most prevalent kind. Outside of hospitals or other health care institutions, it happens. It is possible that it is caused by:

Bacteria. This form of Pneumonia can develop spontaneously or as a result of a cold or the flu. It may infect only one lobe of the lung, which is referred to as lobar Pneumonia.

- Organisms that resemble bacteria. Pneumonia can also be caused by *Mycoplasma pneumoniae*. It is often associated with less symptoms than other forms of Pneumonia. Walking Pneumonia is a colloquial term for this type of Pneumonia, which is often not severe enough to necessitate bed rest.

- Fungi. This form of Pneumonia is more prevalent in persons who have chronic health issues or compromised immune systems, as well as in people who have inhaled massive amounts of the organisms. It is caused by fungus that can be found in soil or bird droppings and varies by geographic region.

- Viruses, such as COVID-19 Pneumonia can be caused by several of the viruses that cause colds and the flu. Viruses are the leading cause of Pneumonia in children under the age of five. Pneumonia caused by a virus is often mild. However, in certain instances, it can become rather dangerous. Coronavirus 2019 (COVID-19) may cause severe Pneumonia.

b) Hospital-acquired Pneumonia

Pneumonia can also be contracted during a hospital stay for another sickness. Pneumonia obtained in a hospital setting can be dangerous due to the germs that cause it to be more resistant to medications, and those who contract it are already ill. Individuals using breathing machines (ventilators), frequently used in intensive care units, are at an increased risk of contracting this kind of Pneumonia.

c) Health care-acquired pneumonia

Pneumonia obtained in a health care setting is a bacterial illness that affects residents of long-term care institutions and those who get care in outpatient clinics, including renal dialysis

centres. As with hospital-acquired Pneumonia, healthcare-acquired Pneumonia can be caused by antibiotic-resistant bacteria.

d) Aspiration pneumonia

Aspiration pneumonia develops when food, liquid, vomit, or saliva is inhaled into the lungs. Aspiration is more common if something disrupts your usual gag response, such as a brain damage or swallowing issue, or if you drink or use drugs excessively.

Risk factors

Pneumonia may strike anybody at any time. However, the two age groups most at risk are: • Children aged two years or younger

- Individuals 65 years of age or older

Additional risk factors include the following:

- Hospitalization. Pneumonia is more likely to occur if you are in a hospital intensive care unit, especially if you are on a ventilator (a ventilator).
- Chronic illness. Pneumonia risk increases if you have any of the following conditions: asthma, chronic obstructive pulmonary disease (COPD), or heart disease.
- Smoking.
- Immune system that is weakened or inhibited. Individuals living with HIV/AIDS, those who have undergone organ transplantation, and those who take chemotherapy or long-term steroids are at risk.

Complications

Even with therapy, some patients with Pneumonia, particularly those in high-risk populations, may develop complications, including: (bacteremia). Bacteria that enter the circulation through the lungs can spread to other organs, resulting in organ failure.

- Breathing difficulties. If you have severe Pneumonia or persistent underlying lung illnesses, you may have trouble breathing inadequate oxygen. While your lung recovers, you may need to be hospitalized and use a breathing machine (ventilator).
- Excessive buildup of fluid around the lungs, Pneumonia may accumulate fluid between the thin layers of tissue that border the lungs and chest cavity (pleura). If the fluid gets contaminated, it may need to be drained via a chest tube or surgically removed.
- Abscess of the lung. When pus develops in a hollow in the lung, this is called an abscess. Antibiotics are typically used to treat an abscess. Occasionally, surgery or drainage via an abscess with a long needle or tube is required to remove the pus.
- Abstain from smoking

Prevention

To help avoid Pneumonia, take the following steps:

Vaccinate yourself. Immunizations are offered to protect against some strains of Pneumonia and influenza.

- Ensure that children receive vaccinations. Different pneumonia vaccination is recommended for infants under the age of two and for A higher risk group for pneumococcal disease includes youngsters between the ages of two and five.
- Maintain proper hygiene. Hands should be washed often or sanitized with an alcohol-based hand sanitizer to prevent respiratory infections that can lead to Pneumonia.
- Maintain a healthy immune system. ensure you're getting sleep and exercising on a regular basis.and maintain a balanced diet.

Diagnoses

- Conducting a physical examination, including listening to the lungs using a stethoscope for abnormal bubbling or crackling sounds indicative of Pneumonia. If you suspect Pneumonia, the following tests may be recommended:
- **Blood tests.**

- **Chest X-ray.**
- **Pulse oximetry.**
- **Sputum test.**
- **CT scan.**
- **Pleural fluid culture.**
- **Treatment**
- Pneumonia treatment focuses on eradicating the illness and preventing consequences. Individuals who have contracted Pneumonia in the community may typically be treated at home with medicines. Treatment options vary according to the kind and severity of Pneumonia, the patient's age, and overall health. Among the alternatives are the following:
 - **Antibiotics. These medications are used to treat Pneumonia caused by bacteria.**
 - **Anti-cough medication. This medication may be used to alleviate coughing and allow you to rest.**
 - **Antipyretics/pain relievers. may use them to treat fever and pain as required. Among them are aspirin, ibuprofen (Advil, Motrin IB, and others), and acetaminophen (Tylenol, others).**

Table 5. 1: Summary sign classification and treatment of Phenomena

Is the youngster congested or coughing?						
If yes, ask for how long	look lesson and feel and make a child a clam	Classify cough or difficult breathing		Sign	Classify as	Treatment
	Count breathe in one minute Look for chest indrawing Look and listen for steroid	If a child is 2 months up to 12 months	Fast breathing is 50 breath per minute	Any general danger sign, chest indrawing steroid in the child must in clam	Severe Pneumonia or other very severe diseases	Give per referral treatment and refer urgently to a health facility or clinic/hospital
		If a child is 12 months up to 60 months	Fast breathing is 50 breath per minute	Fast breathing	Phenomena	Give appropriate antibiotics for five days. A safe medication to alleviate cough and soothe the throat Remind your mother when you plan to visit her

						next immediately follow un in 2 days
				No sign of Pneumonia or very serve diseases	No Pneumonia: cough or cold	If cough more than 30 days refer for assessment Advise mother when to return immediately follow un in 5 days if not improving

Source: (WHO, 2005)

Source;<https://apps.who.int/iris/bitstream/handle/10665/42939/9241546441.pdf;jsessionid=5092644CD8A8A425E7635F30733BA107?sequence=1>.

5.2.5 Step 5. Assessing, classifying, and treating a child with watery and bloody Diarrhea.

Learning Outcomes for Study Session

- Define and accurately utilize the term diarrhoea
- Capable of comprehending the epidemiology of Diarrhoea and the signs and symptoms that indicate a diagnosis.
- Examine a youngster who presents with Diarrhoea.
- Identify the infection that is causing Diarrhoea in a kid Diarrhea should be treated immediately.
- Provide follow-up care for a youngster suffering from Diarrhoea.

Diarrhoea diseases Epidemiology

Having diarrhea means passing three or more loose or watery stools each day or more frequently than usual. Diarrhoea is considered the second leading cause of death for children under years. It is preventable as well as curable. Worldwide, an estimated 1.7 billion new diarrheal infections and 525 000 deaths from diarrhea occurred in children. A large majority of diarrhoeal illness may be averted by providing clean drinking water and maintaining proper sanitation and hygiene. Diarrhea can persist many days and deplete the body of essential fluids and minerals. Historically, severe dehydration and fluid loss were the primary causes of mortality from Diarrhoea for most individuals. Other reasons, such as septic bacterial infections, are now anticipated to account for increasing fatalities related to Diarrhoea.

The 31 studies' findings indicated that the combined prevalence of diarrhea among under-five children in Ethiopia was 22%. (95 per cent CI: 19, 25 per cent). According to the 2016 Ethiopia Demographic and Health Survey, diarrhea was prevalent at 12%. In 2012, the frequency of diarrheal illness among children under the age of five reached 19% in Somalia (WHO, 2012). South Sudan is among the one with world's highest rates of diarrhoea. Diarrhea is a common gastrointestinal problem that is characterized by loose, watery, and maybe more frequent stool movements.

Symptoms

S/S with Diarrhoea may include:

- Loose, watery stools

- Abdominal cramps
- Abdominal pain
- Fever
- Blood in the stool
- Mucus in the stool
- Bloating
- Nausea

Note:

If Diarrhoea persists beyond a few days and the child becomes dehydrated, severe abdominal or rectal pain, bloody or black stools, and a fever above 102 F (39 C) urgent action should be taken.

Diagnosis

Review the medications taken, conduct a physical exam, and may order tests to determine what's causing your Diarrhoea. Possible tests include:

- **Blood test**
- **Stool test.**
- **Flexible sigmoidoscopy or colonoscopy.**

Treatment

Usually, without therapy, diarrhea clears up within a few days on its own.

Diarrhoea caused by bacteria or parasites can be treated with antibiotics. Antibiotics will not relieve Diarrhoea caused by a virus.

Treatment to replace fluids

Fluid and salt replacement is highly recommended.

However, while water is a decent fluid replacement, it is devoid of salts and electrolytes such as sodium and potassium, which the body needs to operate appropriately. Drink potassium-rich fruit juices or consume sodium-rich soups to keep electrolyte levels balanced. However, some fruit liquids, such as apple juice, might exacerbate diarrhea.

5.2.6 Step 6. Assess and classify Diarrhoea

If you have Diarrhoea, you'll need to know how to recognize and analyze the different types. It might be loose or watery, bloody in the stool, or even mucousy if you have Diarrhoea. It commonly causes the kid to get dehydrated, which can result in both malnutrition and even death. Further down the page, you'll discover more about the differences between acute and chronic cholera and dysentery symptoms. Shigella bacterium is the most prevalent source of dysentery (amoebic dysentery is not common in young children)

Both watery diarrhea and dysentery can affect a youngster at the same time. Diarrhoea can cause to dehydration, which can be fatal in children. There are three or more loose or watery stools every day while you have diarrhea. diarrhea that continues for at least 14 days (in a young infant this would be classified as severe persistent Diarrhoea). Dysentery is characterized by blood in the stool and mucus in the stool.

a) Does the child have Diarrhoea?

If the mother says no, bring up the child's temperature as the next primary symptom. You don't have to keep an eye out for other signs of Diarrhoea in the youngster. If the mother says yes or had previously stated that Diarrhoea was the cause for her visit to the community health centre, make a note of her response. After that, look for indications of dehydration, diarrhea that won't go away, and dysentery in the youngster.

You need to assess the following:

- The length of time that the youngster has been experiencing diarrhea.

If the feces contains blood, the youngster is likely suffering from dysentery.

Dehydration signs and symptoms

ASK: How long has the youngster experienced Diarrhoea for the child? Give your mum some space to think about answering your inquiry. She might want some additional time to recollect how many days have passed accurately.

Inquire as to whether or if there is any blood in the stool.

The mother should be questioned about whether or not she has observed any blood in the faeces during this round of diarrhea.

b) Next, you need to check the child for signs of dehydration.

- When a child becomes dehydrated, he or she becomes restless and angry, and eventually comatose.
- • The eyes may seem sunken as the child's body loses fluids.
- • The skin returns slowly or very slowly after being squeezed.
- To determine the severity of a child's dehydration, check for and feel for the following symptoms.
- DON'T FORGET to check on the child's health in general Check to check if the youngster is groggy or unresponsive. Is the youngster just agitated and restless?
- The youngster was sluggish or unconscious when you looked for general danger symptoms. If the youngster appears slow or unresponsive, this is a warning indication. Remember to categorize and document the child's Diarrhoea using this general warning indication. When a youngster is restless and irritable, or every time he is handled, the symptom restless and irritable is present. Nursing calms a newborn or kid; nevertheless, when breastfeeding ceases, the infant or child becomes agitated and irritable once more.
- On the other hand, many youngsters are agitated simply because they are in a safe but strange environment. These youngsters are usually amenable to comfort and calming measures. Restless and irritated isn't an indication they have.
- **LOOK for sunken eyes.**

A dehydrated child's eyes may seem sunken. Determine whether or not you believe the eyes are sun kissed in. As a second step, inquire if the mother feels that her child's eyes are particularly striking. If she thinks the child's eyes are sunk, you'll know for sure. You should note that in a an

extremely emaciated youngster with sunken eyes, even if not dehydrated. Sunken eyes are less accurate in clearly wasted children, but they should still define dehydration.

LIQUIDATE THE CHILD Is the youngster unable to or unable to drink? Or is the youngster thirsty?

Ask the mother to give the youngster some water. Keep an eye on him. When offered a drink, a kid cannot suck or swallow it. A youngster that is drowsy or unconscious may be unable to drink. A youngster drinks badly if they are weak and needs assistance. He may only be able to swallow if given liquid. If a youngster is clearly thirsty, they show signs of drinking enthusiastically. When you provide water to the youngster, watch for a cup or spoon reach. If the youngster is dissatisfied because he wants more water, remove it. If the youngster just drinks to be encouraged and then refuses to drink more, he does not have the indicator "drinking enthusiastically, thirsty".

c) PINCH the abdomen's skin. Is it really slowly, taking more than two seconds, or slowly?

Ask the mother to lay the infant flat on his back, arms at his sides (not over his head), and legs straight. Or have the mother hold the infant flat on her lap. Find the midpoint between the umbilicus and the side of the child's abdomen. Usage of the thumb and first finger Using your fingertips will create discomfort. Place your hand so that when you squeeze the skin, it lines up and down the child's body, not across it. Pick up all layers of skin and tissue. Pinch for a second, then release. If the skin remains up when you release it, determine that the skin pinch returns slowly.

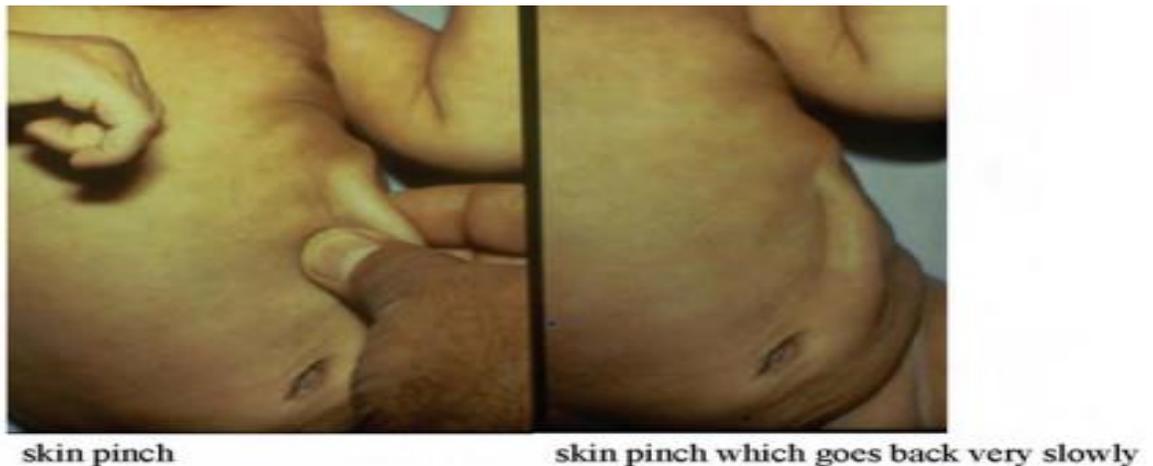
When you release the skin, watch for a skin pinch:

- Slowly (more than two seconds)
- Immediately

How to conduct the skin pinch test and what happens to the child's skin when it doesn't return promptly. The skin pinch test is not always a reliable indicator of dehydration since a malnourished child's skin may return slowly even if not dehydrated. Even if a youngster is

dehydrated, the skin may return in an overweight or edematous child. Though less accurate in these children, skin pinch should still be used to identify dehydration.

Figure 5.2 the skin pinch test and what the child's skin looks like when the skin pinch does not go back immediately



Source: WHO IMCI guideline Somalia

Treatment for dehydration

There are three ways to manage dehydration and diarrhoea in children: Plan C treats children with severe dehydration, Plan B treats children with mild dehydration, and Plan D treats children with diarrhea but no dehydration. First, we'll look at treating extreme dehydration using Plan C.

Severe dehydration

Dehydrated children require fluid supplementation. A severely dehydrated youngster requires fluids soon. Plan C: Treat Severe Dehydration Quickly is shown in Figure 5.3. In addition to any training you may have gotten for delivering IV fluids to adults, giving IV fluids to a tiny kid requires additional instruction.

Class activities

Treatment of extreme dehydration Examine Box XX and write notes in your Study Diary in response to the following questions.

a. When should you rush a youngster to the hospital?

Then what if there is no IV line or you are not qualified to implant one?

b. How often would you rehydrate the child

C Justify your answer.

Some dehydration

Even though some dehydration is not as harmful as 'severe dehydration,' treating a kid with 'some dehydration' is still necessary to prevent worsening things. If Plan A fails, there is always Plan B: how to treat a child who has become dehydrated.

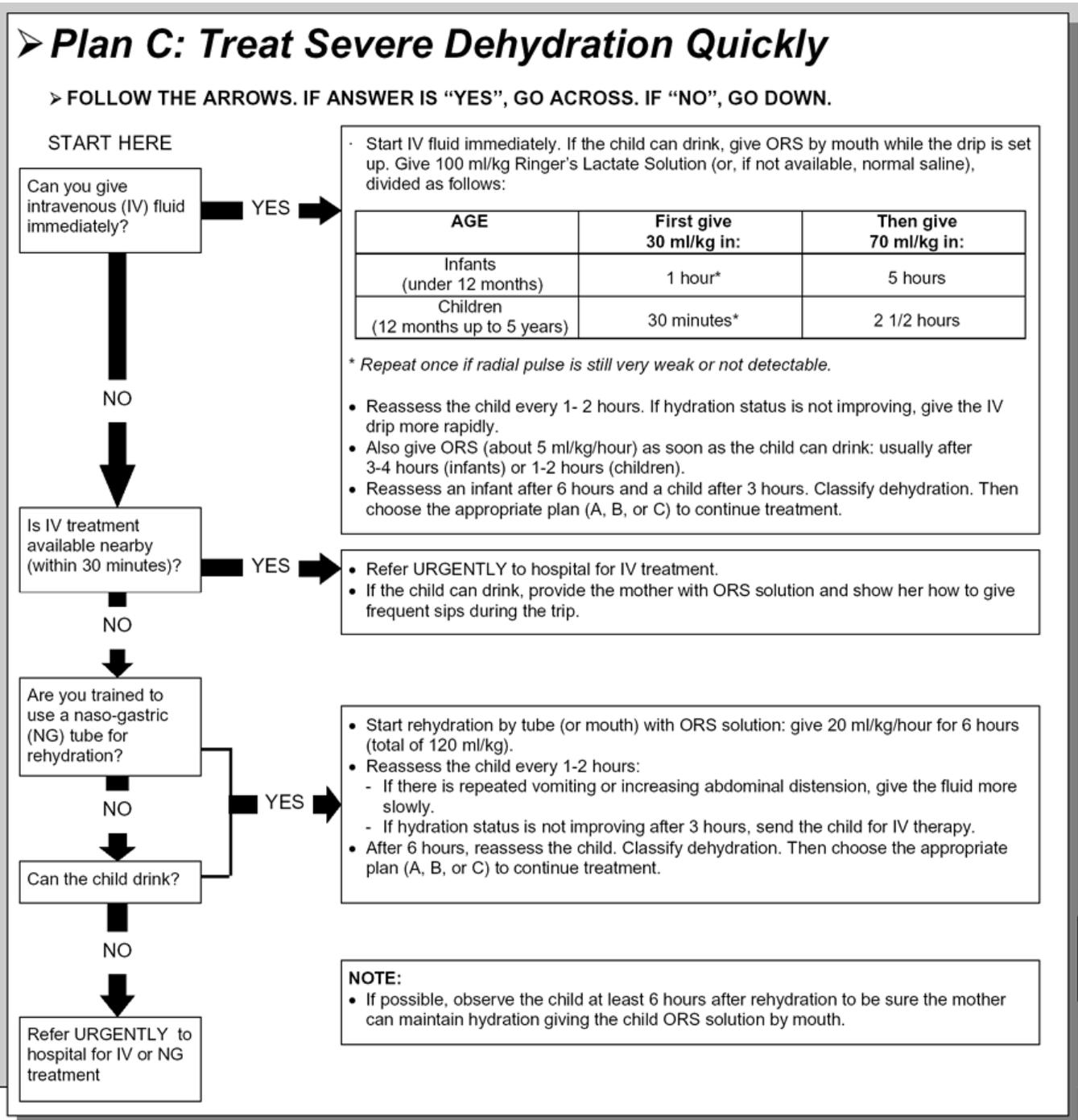


Figure 5.3: Plan C: Steps for treating severe dehydration (WHO, 2005)

Table 5.2 Plan B: Treatment of a child with some dehydration

Give in clinic suggested volume of ORS over 4-hour period				
ESTIMATE THE AMOUNT OF ORS TO BE GIVEN DURING THE FIRST FOUR HOURS				
Age	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
Weight in kg	< 6 kg	6–10 kg	10-12KG	12–19 kg
ORS in ml	200–400	400–700	700–900	900-1400
Use the child's age only if you are unsure about the child's weight. Calculate the approximate amount of ORS necessary (in ml) by multiplying the child's weight (in kg) by 75. If the child requests more ORS than what is provided, provide additional ORS. Give 100–200 ml clean water throughout his period to infants under 6 months who are not breastfed. EXAMPLE HOW TO GIVE OR SOLUTION TO THE MOTHER. · Small sips from a cup or a cup and spoon (one spoon every 1–2 minutes) · Wait 10 minutes if the kid vomits. Then proceed more slowly. Continue nursing as long as the kid desires.				
AFTER 4 HOURS:				
<ul style="list-style-type: none"> ✚ Reassess the child and categorize him or her as dehydrated. Continue therapy with the most suited plan. Begin the child's feeding at the clinic. 				
<p>IF THE MOTHER IS REQUIRED TO LEAVE BEFORE TREATMENT IS COMPLETED: Demonstrate to her how to make ORS solution at home. Demonstrate to her how much ORS to administer to complete the four-hour therapy at home. Provide her with a enough number of ORS packets to ensure full rehydration. Additionally, as indicated in Plan A, give her a carton of ten packets of ORS. Explanation of the Four Home Treatment Rules; These are:</p> <ul style="list-style-type: none"> • Give Extra Fluids • Give Zinc Supplements • Continue Feeding • When to Return 				

Treatment for No dehydration

Even if a child has diarrhea and is not considered to be dehydrated, he or she still requires more fluids to avoid dehydration. Plan A Table 5 outlines the methods to treat a kid who does not have dehydration. Assert the four home treatment rules to the mother.

Table 5.3 Plan A: Treatment for a child with Diarrhoea but no dehydration

<p>Give Extra Fluids, Give Zinc Supplements, Continue Feeding, When to Return</p> <ul style="list-style-type: none"> ✚ Supplement the kid's fluid intake with as much as the youngster will tolerate: ✚ Increase fluid intake, administer zinc supplements, continue feeding, and choose when to return Increase fluid intake (as much as the youngster will tolerate): <ul style="list-style-type: none"> • Inform the mother: • To breastfeed regularly and for an extended period of time at each feed. • If the kid is solely breastfed, supplement breastmilk with ORS. • If the infant is not nursed exclusively, administer one or more of the following: ORS solution, food-based fluids (such as soup, rice water, or yoghurt drinks), or clean water. It is especially critical to provide ORS at home if the kid has received Plan B or Plan C treatment during this visit. • The youngster is not permitted to return to the clinic if the diarrhoea worsens. • Teach the mother how to properly mix and administer ORS. • Distribute two sachets of ORS to the mother for usage at home. • Demonstrate to the mother how much additional fluid to provide in addition to her normal fluid. 	
0- 2 years	50- 100 ml after each loose stool
2 05 years	100-200 ml after each loose stool
<p>Tell the mother to:</p> <ul style="list-style-type: none"> ✚ Small sips from a cup should be given often. Wait 10 minutes if the kid vomits. Then proceed more slowly. Continue to provide more fluids until the diarrhoea subsides. <p>Give zinc supplements:</p>	

- ✚ Inform the mother of the amount of zinc to give: Approximately six months 1/2 pill daily for ten days six months or longer 1 pill daily for ten days
- ✚ Demonstrate to the mother how to administer zinc supplements. • Dissolve a tablet in a little quantity of expressed breastmilk, ORS, or clean water in a cup for infants; • Tablets can be chewed or dissolved in a small amount of clean water in a cup for older children
Continue to feed Inform her of her return date.

Classify persistent Diarrhoea

The type of Diarrhoea a kid is suffering from must be determined once the child has been categorized as dehydrated. Persistent Diarrhoea is a medical term that refers to a youngster who has experienced diarrhea for 14 days or more. Persistent Diarrhoea is divided into three categories based on how dehydrated the youngster is. Diarrhoea of great severity and dysentery due to chronic diarrhea

Table 5.4 classifications of persistent Diarrhoea

Classification	Action
Severe persistent Diarrhoea	Treat dehydration before referrers unless a child has other severe classification. Referrer to health center/hospital
Persistent Diarrhoea	Advise mother feeding on child Persistent Diarrhoea and follow up in 5 days
Dysentery	Referred to the health center

Severe persistent Diarrhoea

A children's condition should be classified as severe persistent Diarrhoea if the child has suffered diarrhea for 14 days or more and has also had some or severe dehydration..

Treatment

Dehydrated children who have had diarrhea for 14 days or longer should be sent to the hospital. To find out what's causing the diarrhea, doctors may need to run tests on samples of the patient's feces in the lab.

Treating dehydration can be challenging if a kid has severe diarrhea, and hospitals are considerably better equipped to handle such cases. Because of this, you should send these children to a specialist and administer a therapeutic amount of vitamin A to them before they leave your care facility.

Persistent Diarrhoea

Persistent Diarrhoea is defined as 14 days or more of diarrhea without evidence of dehydration in a child. Treatment The most crucial treatment for a child suffering from recurrent diarrhoea is special nutrition. As you can see, it's critical to administer the correct dosage of vitamin A to the youngster. In addition, zinc supplements should be provided to patients.

Table 5.5 Treatment for persistent and severe persistent Diarrhoea.

<p>Give vitamin A</p> <p>For MEASLES, MEASLES with EYE/MOUTH complications and PERSISTENT DIARRHOEA</p> <p>give three doses.</p> <ul style="list-style-type: none">  Give the first dose in the clinic.  Give two doses in the clinic on days 2 and 15
<p>For a child with SEVERE MALNUTRITION, SEVERE COMPLICATED MEASLES, or SEVERE PERSISTENT DIARRHOEA give one dose in the clinic and then refer. .</p>

✚ For a routine Vitamin A supplementation for children, six months up to five years give one dose in the clinic if the child has not received a dose within the last six months.

Age	VITAMIN A CAPSULES		
	200,000 IU	100,000 IU	50,000 IU
Up to 6 months		½ capsule	1 capsule
6 months up to 12 months	½ capsule	1 capsule	2 capsules
12 months up to 5 year	1 capsule	2 capsules	4 capsules

Follow-up care for persistent Diarrhoea

To make sure that rehydration/hydration is maintained and that Diarrhoea has ended, children with Diarrhoea will require follow-up treatment once they have been diagnosed.

After five days, you should provide follow-up care: Ask whether the diarrhoea has subsided.

- How many times a day does the youngster pass loose stools?

Treatment:

If the diarrhea hasn't stopped and the kid is still passing three or more loose stools per day, perform a complete reassessment of the child, administer any necessary therapy, and transfer the child to a hospital for further evaluation. Diarrhoea (less than three loose stools per day) should be halted and the mother should continue feeding the child according to age-appropriate guidelines.

Treatment for dysentery

Dysentery is the most likely diagnosis for a youngster who has diarrhea with blood in their stool. Treatment You should provide cotrimoxazole to the kid if they are dehydrated, as described previously in this research session.

According to the child's weight (or age), antibiotics are listed in Table 5.6, along with the appropriate dosage.

Table 5.6 Correct dosage according to the weight (or age) of the child.

Treatment for dysentery: give two times daily for 5 days. Age (weight in kg) Adult tablets Paediatric tablets Syrup in ml 2 months up to 12 months ½ 2 5 12 months up to 5 years 1 3 7.5			
Age (weight)	Adult tablets	Paediatric tablets	Syrup in ml
2 months up to 12 months	½	2	5
12 months up to 5 years	1	3	7.5

Follow-up care for dysentery

Two days after the initial appointment, you must give follow-up care for a kid who has been diagnosed with dysentery. The questions you'll want to bring up at your follow-up care appointment, as well as the therapy you should get. The youngster should be sent to the hospital if their symptoms remain constant or worsen.

Follow-up care for dysentery

After two days, provide the following follow-up care: Ask: Is there a decrease in the number of stools? How much less blood do you pass in your feces? Is the fever going down? What has changed in terms of your experience with discomfort in the abdomen? Is the youngster consuming more calories now? Look for signs of diarrhoea in the youngster. (Assist yourself using the Assess and Classify chart.)

Treatment:

- ✚ Treat dehydration if it is present in the child. Refer to a hospital if symptoms such as frequent bowel movements, blood in the stools, high fever, stomach pain, or trouble eating persist or worsen. The child is eating better and there is less fever and stomach pain, so

continue providing the same antibiotic until the bottle is empty. Teach your child's mother how important it is for him/her to finish the antibiotics

Does the child have Diarrhoea	look and feel	Classify by	Sign	Classify	Treatment
If yes, ask for how long	<ul style="list-style-type: none"> • Look at the child general health condition • Is the child? <ul style="list-style-type: none"> ○ Lethargic or unconscious? ○ Restless and irritable? • Look for the sunken eyes • Offer the child fluid <ul style="list-style-type: none"> ○ is the child not able to drink or drinking poorly 	Dehydration	Two of the following things: <ul style="list-style-type: none"> • Lethargic or unconscious • Restless and irritable • sunken eyes • Is the youngster unable to drink or is he or she drinking in an unhealthy manner? 	Severe dehydration	If the child has no severe dehydration classification gives fluid. If a child has other severe classification urgently referred to health facilities giving frequent sip of ORS on the way Advise mother to continue to breastfeed advise mother when return immediately

WHO,

	<p>drinking eagerly or thirsty?</p> <ul style="list-style-type: none"> • Pinch the skin of the child's <ul style="list-style-type: none"> ○ The child abdomen does it go back very slowly (longer than 2 seconds) ○ slowly 		<ul style="list-style-type: none"> • The child abdomen does it go back very slowly 		<p>follow up if 5 days if not improving</p> <p>If the child 2 years or older and there is cholera in your catchment give an antibiotic for cholera</p>
			<p>Two of the following things:</p> <ul style="list-style-type: none"> • Lethargic or unconscious • Restless and irritable • sunken eyes • drinking eagerly or thirsty • The child abdomen does it go back slowly 	<p>Some dehydration</p>	<p>If the child has some dehydration give him fluid and food.</p> <p>If a child has other severe classification urgently referred to health facilities giving frequent sip of ORS on the way</p> <p>Advise mother to continue to breastfeed advise mother when return immediately follow up if 5 days if not improving</p>

			Not enough sign to classify a some or severe dehydration	No dehydration	If the child has no dehydration give him fluid and food to treat Diarrhoea at home. advise mother when return immediately follow up in 5 days if not improving
	look and feel	Sign	Classify	Treatment	

Table 5.7 Summary of Diarrhoea sign classification, treatment and follow up

<p>If yes, ask for how long</p> <ul style="list-style-type: none"> • Look at the child general health condition • Is the child? <ul style="list-style-type: none"> ○ Lethargic or unconscious? ○ Restless and irritable? • Look for the sun-ken eye. • Offer the kid fluids; is the child unable to drink or is he or she drinking poorly? Is the youngster drinking enthusiastically or is he or she thirsty? • Pinch the skin of the child's <ul style="list-style-type: none"> ○ The child abdomen does 	<p>Diarrhoea</p>	<p>If Diarrhoea for 14 days or more</p>	<p>Dehydration present</p>	<p>Severe persistent Diarrhoea</p>	<p>Treat dehydration before referrers unless a child has other severe classification. Referrer to health center/hospital</p>
			<p>No dehydration</p>	<p>Persistent Diarrhoea</p>	<p>Advise mother feeding on child Persistent Diarrhoea and follow up in 5 days</p>

	it go back very slowly (longer than 2 seconds) ○ slowly		If blood in the stool	Dysentery		Treat
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5.2.7 Step 7. Assessing classifying and treating a child with acute respiratory tract infection

Febrile convulsions epidemiology

Febrile seizures occur when a child's body temperature rises, usually as a result of an illness. In children, it's by far the most frequent neurological condition. According to statistics, one in every twenty-five children will go through at least one FS episode while growing up. Children with normal development and no previous history of neurologic problems are susceptible. Sometimes, a youngster will be completely unresponsive, tremble violently, and move their limbs on the other side of the body. The first day of a child's fever is when most FSs occur. When your kid suffers a febrile seizure, it can be terrifying since the few minutes it lasts appear to last forever. Fortunately, most of the time, they're not harmful and don't point to something more serious. The best thing you can do is keep your child secure and console them after a febrile seizure. As the name suggests, seizures occur when a kid has a very high temperature of 39 to 40 degree Cel. This is going to be a rapid-fire fever. Seizures are more likely to occur if the body's temperature changes rapidly. They are more common among unwell children. The most prevalent age range for febrile seizures is between 12 and 18 months. Simple febrile seizures and complicated febrile seizures are the two forms of febrile seizures. Seizures caused by a complex febrile condition might linger for days or weeks.

A. Simple febrile seizures. Short-term memory loss can last anywhere from a few seconds to many minutes. They don't return within 24 hours and don't affect only one portion of the body when they occur in simple febrile seizures alone

Symptoms of simple febrile seizure are:

- loss of consciousness
- twitching limbs or convulsions (usually in a rhythmic pattern)
- confusion or tiredness after the seizure
- no arm or leg weakness

B. Complex febrile seizures. Symptoms of this type include: lasting more than 15 minutes, recurring within 24 hours, or affecting just one side of your child's body. Over the course of 30 minutes, many seizures may occur.

Symptoms of complex febrile seizure are:

loss of consciousness • twitching or convulsing limbs • transient weakness, generally in one arm or leg

- **Recurrent febrile seizures:** When a simple or complex febrile seizure occurs repeatedly, it's considered a recurrent febrile seizure.

Symptoms of recurrent febrile seizures include:

- temperature
- The next seizure often happens within a year of the initial seizure.
- Fever temperature may not be as high as the first febrile seizure.
- The child has fevers frequently.

Cause and Risk factor for febrile seizure

Frequent febrile seizures are the result of an elevated body temperature. A febrile seizure might occur even if you have a low-grade fever. Febrile seizures can have a variety of underlying causes. Fever, epilepsy, hypoglycemia, hypocalcemia, head injury, poisoning, and medication misuse are the most common related conditions with FS, however, the exact aetiology is still unclear. Frequent viral infections are to blame for febrile seizures, but bacterial infections are also to blame. Febrile seizures appear to be most often linked to influenza and the virus that causes roseola (which is usually accompanied by high fevers).. Krüger, C.1, Heinzl-Gutenbrunner, M.2 & Ali, M (2017))

.Risk factors for febrile seizure

A person is more likely to have a febrile seizure if:

They are young. There is a greater chance of febrile seizures occurring between the ages of 12 and 18 months in children who are 6 months to 5 years old.

The family of one's ancestors. Seizures are more common in children who have a fever because of heredity. Researchers have also discovered several genes that increase one's risk of having febrile seizures.

Complications

he majority of febrile seizures are short-lived. Frequent febrile seizures are not indicative of a more serious underlying condition in children. They can cause brain damage, intellectual

incapacity, and learning problems. Seizures that are induced rather than epileptic are referred to as febrile seizures. Recurrent unprovoked seizures due to aberrant brain electrical impulses characterize epilepsy.

Treatment

A febrile seizure doesn't require any medicine for the vast majority of youngsters. While febrile seizures seldom have long-term consequences, most of them end on their own within a few minutes once they begin. Seizures caused by the flu are called febrile seizures. Lie your youngster down on his or her back on a non-slip surface. Set a stopwatch to the seizure's duration and begin timing it. Make sure you're near by to keep an eye on your youngster and provide emotional support. Make sure your youngster doesn't have access to any hard or pointy things while you're away. Adjust clothing that is too tight or constricting. Don't put your youngster in any kind of restriction or make any sort of interference with their mobility. Do not give your youngster anything to eat or drink.

At the community level, cool them off by wiping them down with a towel or sponge dampened with room temperature water.

you refer to the hospital if they have a more serious infection that requires treatment. Only a brief stay in the hospital is necessary. There may be an emergency if the seizure lasts more than five minutes or is followed by symptoms such as vomiting, a stiff neck, or difficulty breathing. After examining their condition, the doctor or nurse practitioner may be able to prescribe medicine. Identifying, assessing, and treating ear disorders. Analyzing and treating an anemic youngster. A sick child's follow-up and referral are provided. Krüger, C.1, Heinzl-Gutenbrunner, M.2 & Ali, M (2017)).

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