

UGANDA ADS SELLER'S MANUAL

Module 3: Treatment that the ADS can Initiate

Sessions 6–10



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ACRONYMS

ACT	artemisinin-based combination therapy
ADDO	accredited drug dispensing outlets
ADS	Accredited Drug Shop
AIDS	acquired immunodeficiency syndrome
AL	artemether-lumefantrine
ANC	antenatal care
Bp	blood pressure
DADI	District Assistant Drug Inspector
DHO	District Health Officer
FEFO	first expiry, first out
FIFO	first in, first out
FP	family planning
GIT	gastrointestinal track
Hb	haemoglobin
HC	Health centre
HIV	human immunodeficiency virus
iCCM	integrated community case management
IMCI	Integrated Management of Childhood Illness
IM	intramuscular
IV	intravenous
Kg	kilogram

LAM lactation amenorrhoea method

LC Local Council

Mg milligram

MOH Ministry of Health

MSH Management Sciences for Health

NDA National Drug Authority

ORS oral rehydration solution

PNFP private not for profit

PSU Pharmaceutical Society of Uganda

RDT rapid diagnostic test

SDSI Sustainable Drug Seller Initiative

UCG Uganda clinical guidelines

UTI urinary tract infection

WHO World Health Organization

MODULE 3: TREATMENT THAT CAN BE INITIATED AT THE ADS

SESSION SIX: SKIN DISEASES IN ADULTS

The most common skin diseases that present among adults include:

- ✚ Athlete's foot
- ✚ Body ringworm
- ✚ Acne (pimples)
- ✚ Herpes zoster
- ✚ Boils

ATHLETE'S FOOT

Athlete's foot is a fungal infection that affects the toe webs (feet).

It is more common in men who wear closed shoes all the time.

The fourth and fifth toes are the most commonly affected.

Athlete's foot usually begins with sweating and smelly feet, which progresses into itching and peeling of the toe webs.

How do you get athlete's foot?

- ✚ Athlete's foot is transmitted from person to person through contact with the infected area.
- ✚ Sharing contaminated stockings.

Signs and symptoms

- ✚ Itching between the toes
- ✚ Smelling of the feet
- ✚ Peeling of the skin between toe webs
- ✚ Pain on walking
- ✚ Skin between toes becomes white



Picture: Athlete's foot

General measures

- ✚ Advise the client to dry their feet after every bathing.
- ✚ Encourage people to use dry cotton stockings.
- ✚ Advise clients with smelly feet to apply antifungal powders to the feet.
- ✚ Advise the client to wear open shoes during his free time.

Drug treatment

Clotrimazole cream applied to the affected area after drying twice daily for 4 weeks.

Or

Whitfield's ointment applied to the affected area after drying twice daily for 4 weeks.

Guidelines for referral

- ✚ Clients who fail to respond to treatment after 4 weeks.
- ✚ Clients with diabetes or HIV infection.
- ✚ Clients who have developed wounds in the affected area.

BODY RINGWORM

Body ringworm is a highly contagious skin infection caused by fungi.

It affects the chest, back, arms and breast, around the waist and buttocks.

It is common among men who do not bathe or wash their clothes regularly.

Majority of clients with body ringworm self-diagnose.

How do you get body ringworm?

Body ringworm may be transmitted through:

- ✚ Body to body contact with the infected person.
- ✚ Sharing contaminated clothes, e.g., shirts.

Signs and symptoms

- ✚ Round shaped skin patches
- ✚ Itchy skin rash
- ✚ Scaling of the skin
- ✚ Patches slowly grow bigger



Picture: Ringworm

General measures

- ✚ Advise clients to improve their personal hygiene.
- ✚ Advise clients to avoid sharing clothes.
- ✚ Advise clients to wash and iron their clothes before wearing.
- ✚ Advise clients to use the medicine as recommended to avoid the disease from coming back.

Drug treatment

Whitfield's ointment applied twice daily for 4 weeks.

Or

Clotrimazole cream applied twice daily for 4 weeks.

Note: The doctor may recommend griseofluvin 500 mg once daily after eating a fatty meal for 4 weeks.

Guidelines for referral

- ✚ Refer all clients who fail to respond to the treatment.
- ✚ Clients with widespread body ringworm.
- ✚ Body ringworm associated with itching of the body.

PIMPLES (ACNE)

Acne is a common skin disease among young people between the ages of 14 and 19 years (teenagers).

It usually affects the face, back, shoulders and chest.

The majority of the people with pimples have an oily skin.

Excessive secretion of oil blocks the pores of the skin leading to the formation of pimples.

Risk factors for pimples

Pimples are common among:

- ✚ Pregnant mothers and girls during their menstruation period.
- ✚ People who bleach their faces using steroids, such as Mediven, Diprosone, etc.
- ✚ Women who use contraceptive pills.
- ✚ Young people between 14 and 19 years with overly active sweat glands.
- ✚ People with an oily skin.

Signs and symptoms

Lesions can be found on the face, chest, shoulders and back.



Picture: Person with acne

Adapted from *Common Skin Diseases in Africa: An Illustrated Guide*: by Colette Van

General measures

- ✚ Educate the client about acne and its chronicity.
- ✚ Gentle washing of the face at least 3 times a day.
- ✚ The client should be advised against squeezing and picking acne lesions.
- ✚ Inform the client that the treatment may start working after 6 to 8 weeks.
- ✚ Advise the client to use cleansers to remove excess oil, e.g., Clear and Smooth.
- ✚ Clients with an oily skin should avoid using cosmetics.
- ✚ Advise clients to avoid bleaching their faces with steroids.
- ✚ Encourage the client to use acne soap to wash his/her face.

Drug treatment

Seproderm ointment applied twice daily after washing the face with warm water and for 3 months.

Guidelines for referral

- ✚ Clients who fail to respond to treatment after 3 months of continuous application.
- ✚ Clients with widespread pimples on the shoulders and the back.
- ✚ Pregnant women with pimples.
- ✚ Clients who present with nodules (abscesses) on the face.

HERPES ZOSTER

Herpes zoster is a viral infection of the skin.

It is common among people living with HIV and AIDS.

Herpes zoster only affects people who suffered from chicken pox during their childhood.

How do you get herpes zoster?

Herpes zoster occurs when the virus that causes chicken pox becomes activated due to lowering of the immune system of the client.

Signs and symptoms

- ✚ Burning sensation
- ✚ Itching of the skin
- ✚ Red localized skin blisters following a particular pattern
- ✚ Fever and chills
- ✚ Pain in the affected area
- ✚ Headache
- ✚ General body weakness (malaise)



Herpes zoster

General measures

- ✚ Keep the affected area clean.
- ✚ Clean the affected area with hydrogen peroxide solution or chlorhexidine.
- ✚ Reassure the client that the pain will subside.
- ✚ Advise the client to test for HIV.
- ✚ **REFER all cases of herpes zoster.**

Drug treatment

Calamine lotion: Apply 3 times daily for 7 days.

Plus

Paracetamol 1g 3 times daily for 3-5 days.

BOILS

These are common in children and adults. A boil is also referred to as a skin abscess. A boil is a localized bacterial infection deep in the skin. A boil generally starts as a reddened, tender area. Over time, the area becomes firm and hard and tender. Eventually, the centre of the abscess softens and becomes filled with infection-fighting white blood cells that the body sends from the bloodstream to eradicate the infection. This collection of white blood cells, bacteria, and proteins is known as pus. Finally, the pus "forms a head," which can be surgically opened or spontaneously drain out through the surface of the skin.

Clinical features

One or more acute tender, painful swelling at the site of infection. The site of the boil may feel hot, lymph node may be inflamed and sometimes there may be fever.

Management

- The primary treatment for most boils is heat application, usually with hot soaks or hot packs. Heat application increases the circulation to the area and allows the body to better fight off the infection. Advise client to apply hot soaks.
- **NOTE: Do not incise the boil as this may spread the infection to other areas. Refer immediately clients with accompanied fever and generalised lymph node inflammation.**
- Give pain killers, such as paracetamol, to relieve pain and refer for further management.

SESSION SEVEN: MANAGEMENT OF FEVER, PAIN AND INFLAMMATION

FEVER

Introduction

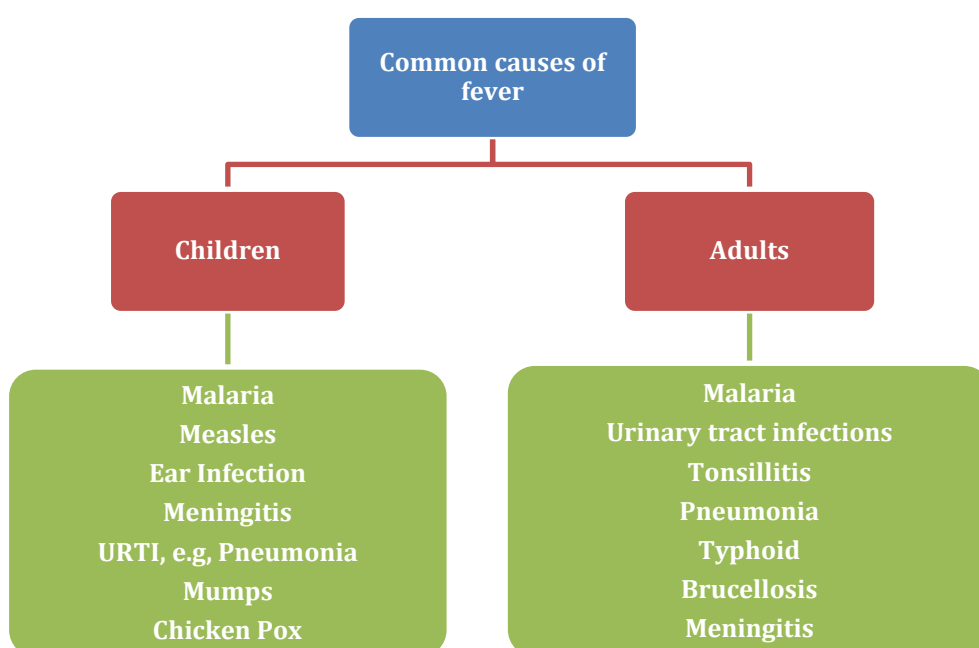
Fever is the elevation of body temperature above normal ($>37.5^{\circ}\text{C}$).

It is measured using a thermometer and the results are recorded in degrees centigrade ($^{\circ}\text{C}$).

Common causes of fever

Causes of fever include the following:

- Bacterial infections: tonsillitis, inflammation of the middle ear, bronchitis, pneumonia, tetanus, urinary tract infection (UTI), wounds, gastrointestinal infections
- Viral infections: colds, flu, measles, mumps, chicken pox, AIDS
- Medications
- Illicit drugs
- Heat illnesses
- In children 2 months to 5 years, the most common causes include: malaria, measles, ear infection, and upper respiratory tract infection (URTI)



Client assessment

Questions to ask	Remarks
<p>1. How old is the child?</p> <p>Or</p> <p>How old are you?</p>	<ul style="list-style-type: none"> ✓ Use the iCCM Job Aid to assess and treat fever in a child younger than 5 years. ✓ The common causes of fever differ in both adults and children. ✓ Age guides the dose of the medicine to be given to the client.
<p>2. When did the fever start?</p>	<ul style="list-style-type: none"> ✓ Acute fever may suggest malaria, measles, or any other acute infections. ✓ Fever lasting more than 3 weeks may suggest typhoid, HIV infection, or brucellosis.
<p>3. Do you have a headache?</p>	<ul style="list-style-type: none"> ✓ Headache is common with malaria and meningitis. ✓ Headache with neck stiffness is common in meningitis and clients should be referred immediately.
<p>4. Do you have a running nose or cough?</p>	<ul style="list-style-type: none"> ✓ Running nose is associated with flu. ✓ Cough is common in pneumonia.
<p>5. Do you have pain on urination?</p>	<ul style="list-style-type: none"> ✓ Pain on urination is associated with urinary tract infections.
<p>6. Do you have lower abdominal pain?</p>	<ul style="list-style-type: none"> ✓ Fever with lower abdominal pain is common with pelvic inflammatory disease in adults. ✓ Refer the client immediately to the health centre.
<p>7. Is there tender swelling behind the ear?</p>	<ul style="list-style-type: none"> ✓ Sign of an ear infection.

Questions to ask	Remarks
8. What treatment has been given so far?	<ul style="list-style-type: none"> ✓ Helps to know the choice of medicine to be given. ✓ Can guide on referral.
<p>If the client is a child:</p> <ul style="list-style-type: none"> • Clouding of cornea • Deep extensive mouth ulcers • Pus draining from eye • Mouth ulcers 	<ul style="list-style-type: none"> ✓ Signs of measles <p>REFER a child suspected of having measles right away.</p>

Warning

- ✚ Do not give antimalarials to any client with fever before confirming the presence of malaria parasites in blood.

Signs and symptoms of fever

Signs and symptoms of fever may be obvious or subtle; the younger the child, the less obvious the symptoms.

Infants

- ✚ Irritable
- ✚ Hard to please
- ✚ Tired
- ✚ Quiet
- ✚ Feel warm or hot
- ✚ Not feed normally
- ✚ Cry
- ✚ Breathe rapidly
- ✚ Exhibit changes in sleeping or eating habits

- ✚ Elevated body temperature on the thermometer

Adults and older children may:

- ✚ Feel hotter or colder than others in the room who feel comfortable
- ✚ Body aches
- ✚ Headache
- ✚ Have difficulty sleeping or sleeping more
- ✚ Poor appetite
- ✚ The body basically shivers and has chills when the fever is rising especially rapidly, and sweats when the fever is dropping or breaking.
- ✚ In children 2 months to 5 years the symptoms help to determine the cause of the fever.

Management

The three goals of care for a client with fever are:

1. Reduce the temperature.
2. Prevent dehydration, particularly if the client is a child.
3. Monitor for serious or life-threatening illness.

Goal 1: Control (lower) the temperature

Paracetamol, aspirin, diclofenac, and ibuprofen are used to reduce temperature.

See the dosage and frequency instructions listed below or those printed on the label.

Remember to continue to give the medication over at least 24 hours or the fever will usually return. If fever persists, refer for further management.

- ✚ Do not use aspirin to treat fever in children, especially for fever in chicken pox. Aspirin has been linked to liver failure in some children. Ibuprofen use has also been questioned in clients with chickenpox. Use paracetamol in these cases.

When to refer a child older than 5 or an adult for further medical care

You should refer if any of the following are present with fever:

- ✚ You are unable to control the fever.
- ✚ You suspect child may become dehydrated from vomiting, diarrhoea, or not drinking (sunken eyes, dry diapers, tented skin, unarousable, etc.).
- ✚ Client is getting worse or new symptoms have developed despite the treatment given.
- ✚ You suspect the child is dehydrated.
- ✚ If the client has convulsions.
- ✚ The child has a purple or red rash.
- ✚ A change in consciousness occurs or client is hallucinating.
- ✚ The child's breathing is shallow, rapid, or difficult.
- ✚ Client has complex medical problems or takes prescription medications on a chronic basis (medications ordered for more than two weeks' duration).

When to refer a child of 2 months to 5 years

- ✚ If a child is possibly dehydrated from vomiting, diarrhoea, or not drinking. (Dehydration is seen from the presence of sunken eyes, dry diapers, tented skin, and the child is unable to be aroused.)
- ✚ If a child has a purple or red rash.
- ✚ If a child with malaria has a stiff neck.
- ✚ If a child with measles has deep mouth ulcers or clouding of cornea and tender swelling behind the ear in ear infection. These indicate severe disease.
- ✚ If a child is getting worse or new symptoms have developed despite the treatment given.
- ✚ If a child's breathing is shallow, rapid, or difficult.

Dosing regimen for commonly used medicines in management of fever

PARACETAMOL

Presentation:

✚ 500 mg tablets

✚ 120 mg/5 mL syrup

Indication:

✚ Light to moderate pain

✚ Light to moderate fever

✚ Alternative to aspirin

Paracetamol

Adult	500 – 1000 mg	3 times daily for 3 days
6-12 years	500 mg (20 ml)	3 times daily for 3 days
2-5 years	250 mg (10 ml)	3 times daily for 3 days
3 mos.-1 year	125 mg (5 ml)	3 times daily for 3 days

Precautions

✚ Avoid giving to clients with liver-kidney diseases

✚ Avoid giving to alcohol addicts

Side effects

✚ Rare

Vital information for the client

✚ Store the medicine away from the reach of children.

✚ If pain persists, seek medical advice.

IBUPROFEN

Presentation:

Tablets 200 mg

Syrup 100 mg/5 mL

Indications:

Pain and inflammation in rheumatic disease.

Dysmenorrhoea (painful menstruation, often involving abdominal cramps).





Fever and pain in children.

Ibuprofen




Age	Dose	Dosage
Adult	200 – 400 mg	3 – 4 times daily with food for 3 days
6-12 years	200 mg (10 ml)	3 – 4 times daily with food for 3 days
3-7 years	100 mg (5 ml)	3 – 4 times daily with food for 3 days
1-2 years	50 mg (2.5 ml)	3 – 4 times daily with food for 3 days

Precautions/contraindications

History of:

-  Gastrointestinal diseases
-  Hepatic and renal impairment
-  Gastrointestinal ulceration or bleeding
-  History of hypersensitivity to aspirin

Side effects

-  Gastrointestinal discomfort
-  Nausea
-  Diarrhoea

- Occasionally gastrointestinal bleeding and ulceration (from long-term use)

Vital information for the client

Do not use any other nonsteroidal anti-inflammatory drugs (NSAID) while taking this medication; keep away from children.

DICLOFENAC

Presentation:

Tablets 25 mg; 50 mg; 100 mg

Indication:

Severe pain and inflammation in rheumatic disease, other musculoskeletal disorders, acute gout, and postoperative pain.

Diclofenac

Age	Dose	Dosage
Adult	200 – 400 mg	3 – 4 times daily with food for 3 days

Precautions

See under previous NSAIDs above.

Side effects

As for other NSAIDs.

Vital information for the client

As for Ibuprofen, take with food or after meal with plenty of water.

NOTE: People older than 75 years are at more risk of significant stomach problems, such as ulcers, from NSAIDs, especially if they have had previous ulcers. Elderly individuals also typically have higher risk factors for heart attack and stroke.

Supportive management

Advise parent or guardian not to overdress children:

- ✦ Overdressing prevents the body from cooling.
- ✦ The most practical solution is to dress the child in a single layer of clothing.

Advise the parent to sponge bath the child in warm water as this helps reduce the fever.

- ✦ Such a bath is usually not needed but may more quickly reduce the fever.
- ✦ Put the child in a few inches of warm water, and use a sponge or washcloth to wet the skin of the body and arms and legs.
- ✦ The water itself does not cool the child. The evaporation of the water off the skin does, so do not cover the child with wet towels (which would prevent evaporation).

Goal 2: Keep the client from becoming dehydrated.

Humans lose extra water from the skin and lungs during a fever.

- ✦ Encourage the client to drink clear fluids, such as non-carbonated drinks without caffeine or juice (not water). Water does not contain the necessary electrolytes and glucose. Other clear fluids, such as ORS, are available in medicine outlets.
- ✦ Tea should not be given because it, like any caffeine-containing product, causes you to lose water through urination and may contribute to dehydration.
- ✦ The client should urinate light-coloured urine at least every four hours if well hydrated.

Goal 3: Monitor the client for signs of serious or life-threatening illness.

If you have managed to control (lower) the client's temperature and helped the client avoid dehydration and the client is still ill-appearing, a more serious problem may exist. Therefore, REFER the client for more specialized care.

VERY IMPORTANT: Sometimes the cause of fever may not clearly manifest, making it difficult in the medicine outlet to establish the cause. In such a case, the client must be referred for further management.

Prevention

Prevention of illnesses that cause fever revolves around personal and household hygiene. Advise clients and their caregivers to use these strategies to prevent the spread of viruses and bacteria:

- ✚ Wash your hands with soap and water.
- ✚ Cover your mouth and nose when sneezing and coughing.
- ✚ Handle food with clean hands.
- ✚ Properly immunize your child.
- ✚ Eat a healthy diet including fruits and vegetables.
- ✚ Get enough sleep.

PAIN AND INFLAMMATION

What is inflammation?

Inflammation is a basic way in which the body reacts to infection, irritation, or other injury. The key features of inflammation are redness, warmth, swelling, and pain.

What is pain?

Pain is an unpleasant sensation. Pain can be sharp or dull, burning or numbing, minor or major, acute or chronic. It can be a minor inconvenience or completely disabling.

How is pain diagnosed?

There is no way to tell how much pain a person has. No test, device, or instrument can measure the intensity of pain. In most cases, care providers find that the best aid to diagnose pain is the client's own description of the type, duration, and location (e.g., headache, backache, etc.) of pain. Defining pain as sharp or dull, constant or intermittent, burning or aching may give the best clues to the cause of pain. These descriptions are part of what is called the pain history, taken by the health worker during the assessment of a client with pain.

Causes of pain

- ✚ Arthritic conditions characterized by joint pain in the legs and arms.
- ✚ Back pain caused by nerve damage, degeneration, and rupture of discs of the backbone.
- ✚ Sports injuries and other trauma, such as sprains, strains, bruises, dislocation and fractures, are always accompanied by pain.
- ✚ The pain from a burn is usually agonizing. Sometimes healed clients have chronic pain at the burn site.
- ✚ Headaches may be acute or chronic. Chronic headaches include migraines, cluster and tension headaches arising from stress or an underlying disease.
- ✚ Muscle pain can range from an aching muscle, spasm, or strain to severe spasticity that accompanies paralysis.
- ✚ Neuropathic pain results from injury to nerves in any part of the body. It is normally described as a hot, burning sensation.

How do you treat pain and inflammation?

The goal of pain and inflammation management is to improve function, so that individuals can go to work, attend school, or participate in other day-to-day activities. And because in most cases the major concern of clients with pain and inflammation is the pain associated with the inflammation, **management focuses more on the pain.**

Clients and their care providers have a number of options for the treatment of pain and inflammation; some are more effective than others. Sometimes, relaxation and not thinking about the pain or inflammation may provide relief.

All pain medications relieve inflammation. The effects of pain medication are different for different people. Also, the tolerance of pain varies greatly from one person to another. For this reason, one medication will not be right for everyone with the same injury. The right pain medication depends on the person experiencing the pain, not on the condition that is causing the pain. The following medicines can be used in the management of pain:

- ✚ Paracetamol
- ✚ Ibuprofen
- ✚ Diclofenac

Dosing regimens for commonly used pain relieving medicines

Medicines used in relieving pain are similar to those used in management of fever. Refer to the section on “**Dosing regimen for commonly used medicines in management of fever**” above.

Supportive management

- ✚ Resting/sleeping can be a helpful addition to medication.
- ✚ Exercise reduces stress, which usually contributes to pain.
- ✚ Counselling

SESSION EIGHT: MANAGEMENT OF MALARIA

MALARIA

Malaria is an acute disease associated with fever. It is caused by plasmodia parasites and is spread by the female anopheles mosquito.

Malaria presents with fever that is intermittent; it comes and goes many times. The body temperature may be normal during a clinic visit. A typical malaria attack has three phases:

- The cold stage is when the client feels cold and shivers.
- The hot stage is when the client feels hot.
- The sweating stage is associated with profuse sweating and relief of symptoms.

How do you get malaria?

- ✚ Bite of an infected female anopheles mosquito (most common).
- ✚ Transfusion of infected blood (rare).
- ✚ Transmission from infected mother to the unborn baby (congenital malaria); rare.

Groups vulnerable to malaria

Malaria can affect any person, but the following groups of people are at a high risk of getting severe malaria.

- ✚ Children under 5 years
- ✚ Pregnant women
- ✚ People living with HIV and AIDS
- ✚ Travelers from areas with little or no malaria transmission
- ✚ Clients with sickle cell anaemia

Classification of malaria

Malaria can be classified as follows:

- ✚ Uncomplicated malaria
- ✚ Severe malaria

Uncomplicated malaria

Uncomplicated malaria is malaria that presents with mild symptoms.

Signs and symptoms of uncomplicated malaria

- ✚ Fever or history of fever
- ✚ Loss of appetite
- ✚ Weakness
- ✚ Nausea/vomiting
- ✚ Headache
- ✚ Joint pains
- ✚ Muscle ache

Signs and symptoms of severe malaria

Severe malaria is malaria that presents with any of the danger signs listed below.

The following are recognised as danger signs of severe illness and clients should be referred immediately for further care if identified:

- ✚ Convulsions or fits within the last two days or at present
- ✚ Not able to drink or breastfeed
- ✚ Vomiting everything
- ✚ Altered mental state (lethargy, drowsiness, unconsciousness, or confusion)
- ✚ Extreme weakness (unable to stand or sit without support)
- ✚ Severe respiratory distress or difficult breathing
- ✚ Severe anaemia (severe pallor of palms and mucous membranes)
- ✚ Severe dehydration (sunken eyes, coated tongue, lethargy, inability to drink)
- ✚ Lethargy
- ✚ Loss of consciousness

How to assess for severe anaemia

- ✚ Look at the tongue, the conjunctivae, and the palms.
- ✚ Are these parts very pale?

If so, there is severe anaemia!

How to assess for dehydration

- ✚ Is the mouth dry?
- ✚ Are the eyes sunken?
- ✚ Pinch the skin (of the abdomen in children or forehead in adults) between your thumb and index finger and then suddenly let go. Does the skin go back very slowly or does it stay in tented?

If the answer to one or more of the questions above is yes, then there is dehydration!

How is malaria diagnosed?

Malaria is suspected from the above signs and symptoms but only confirmed using Rapid Diagnostic Tests (RDT) at the ADS.

- ✚ Observe for malaria signs and symptoms above, and possibly other causes of similar symptoms.
- ✚ Determine if severe (i.e., there are, or have been, any danger signs that necessitate referral).
- ✚ Ask the client or caretaker:
 - When did the illness begin?
 - How did it begin?
 - Have any medicines been taken, especially antimalarials?
- ✚ If medicines have been taken, establish type, dose, and duration of treatment.
- ✚ Perform an RDT test to rule out malaria.

Management of malaria

For proper treatment of malaria, it is important to take a good history. Only then will you be able to manage your client adequately. Also check for danger signs that require immediate

action. Checking for danger signs is particularly important in those most at risk of severe malaria, that is, children aged less than 5 years, non-immune adults, and pregnant women.

Treatment

Artemisinin-based combination therapy (ACT) is recommended for uncomplicated malaria.

ACTs are given in dispersible tablet form for a period of 3 days.

ACTs should not be given to pregnant women in the first 3 months of pregnancy.

ACTs should not be given to children younger than 4 months or weighing less than 5 kg.

ACTs registered in Uganda

ACTs	Brand Names
Artemether/Lumefantrine	Coartem Lumartem Artefan Co-Artesian Co-malartem
Artesunate/Amodiaquine	Falcimon ASAQ Amonate

Treatment of uncomplicated malaria




First-line treatment

Artemether/Lumefantrine

Or

Artesunate/Amodiaquine

Artemether +Lumefantrine (Coartem)

-  Coartem should be given with a fatty meal, such as milk, fried sauce, chapatti, etc.
-  Coartem is not recommended for pregnant mothers in the first trimester (first 3 months of pregnancy).
-  Not recommended for children below 4 months or less than 5 kg.

- ✚ Encourage clients to take the medicine as recommended.

Dosing Information for ACTs

Look at the medicine leaflet to determine the dosage to give to the client.

Pregnant women & infants

Pregnant women and children below 2 months of age are not managed at the ADS and should be referred immediately to a health facility.

Children between 2 and 4 months – ***First-line treatment***

Syrup: Quinine

Dose: 10mg/kg every after 8 hours for 7 days

Guidelines for referral

- ✚ Clients vomiting everything.
- ✚ Children who are unable to breast feed.
- ✚ Children who present with convulsions.
- ✚ *Treat the child to prevent low blood sugar.*
- ✚ *Give one dose of paracetamol for high temperature (above 38.5 C).*
- ✚ Clients who are extremely weak.
- ✚ Adult clients who are confused.
- ✚ Clients with severe anaemia.
- ✚ Pregnant mothers with malaria.

Note: Give the client one dose of rectal artesunate, if available, before you refer.

Management of fever

In all cases, manage the fever as follows:

- ✚ Tepid sponging with lukewarm water.
- ✚ Use of antipyretics for 3 days, e.g., paracetamol or ibuprofen.
- ✚ Children with temperature equal to or above 38.5⁰ C should receive the first dose of paracetamol while at the ADS,
- ✚ In children, advise the mother to return in 2 days for follow up if fever persists.
- ✚ If fever is present every day for 7 days, refer for further assessment.

Paracetamol








Age	Dose	Dosage
Adult	500 – 1000 mg	3 times daily for 3 days
6-12 years	500 mg (20 ml)	3 times daily for 3 days
2-5 years	250 mg (10 ml)	3 times daily for 3 days
3 mos.-1 year	125 mg (5 ml)	3 times daily for 3 days

Or

Ibuprofen

Age	Dose	Dosage
Adult	200 – 400 mg	3 – 4 times daily with food for 3 days
6-12 years	200 mg (10 ml)	3 – 4 times daily with food for 3 days
3-7 years	100 mg (5 ml)	3 – 4 times daily with food for 3 days
1-2 years	50 mg (2.5 ml)	3 – 4 times daily with food for 3 days

Prevention of malaria

-  Sleep under a treated mosquito net.
-  Remove stagnant water around the house.
-  Clear the bushes around the house.
-  Encourage pregnant mothers to go for antenatal care.
-  Use of indoor residual insecticide spraying.
-  Close windows and doors early in the evening.
-  Early detection and treatment of malaria.

SESSION NINE: THE USE OF RAPID DIAGNOSTIC TESTS IN MALARIA DIAGNOSIS

About Rapid Diagnostic Tests (RDTs) for Malaria

- ✚ WHO and the Malaria Control Program (Ministry of Health) recommend that all suspected cases of malaria be confirmed by demonstrating the presence of parasites in the blood.
- ✚ In a drug shop setting, this can be done with the use of rapid diagnostic tests (RDT).
- ✚ An RDT is accurate, simple to perform, and doesn't require a microscope.
- ✚ The following algorithm outlines the important steps to follow when diagnosing malaria by using malaria RDTs, as well as the measures to take following the results.

Preparing to use the RDT

The ADS seller performing the RDT must be systematic and pay attention to having the following materials:

- ✓ Washable surface
- ✓ Work space for test kit components
- ✓ Sharps box available
- ✓ Non-sharps waste bin available
- ✓ Register
- ✓ Pen or pencil
- ✓ Clock or timer

The ADS seller must also have the following supplies:

- ✓ RDT cassettes
- ✓ Disposable gloves
- ✓ Buffer drops
- ✓ Alcohol swab
- ✓ Blood lancet
- ✓ Blood transfer device: capillary tube
- ✓ Waste containers (sharps disposal and infectious waste container)
- ✓ Marker (ball pen or pencil)

Performing the RDT

Step 1: Check expiry date and batch or lot number on test packet.

- Expired RDTs may give faulty results.
- Discard expired RDT and use a non-expired kit.

Step 2: Open the plastic wrapping on the RDT package. Inside you will find the test cassette. Remove the contents and assess the desiccant.

- Discard if RDT package or desiccant is damaged or has changed colour.
- Open RDT package only when ready to use.



a. Test



b. Capillary tube



c. Desiccant sachet

Extra tips for step 2:

- Each test cassette is packaged with a desiccant sachet, which keeps the RDT dry until the packet is opened.

- The desiccant sachet in the RDT packets should be BLUE. If it has turned WHITE or CLUMPED, this means that the cassette has been damaged and should not be used.
- Once the packet is opened, the desiccant sachet serves no purpose and should be discarded.
 - It may be harmful if swallowed, so it should be kept away from children.

Step 3: Label RDT cassette with the client's name, client number, and date.



Extra tips for step 3:

- There will probably be times when you have more than one client waiting to be tested.
- You won't be able to wait to read each client's result before testing the next one.
- If you are testing several people one after another, you will need to have their names written on their cassettes, so that you don't run the risk of mixing up one person's results with those of another.
- Even when you have only one client to test, it is good practice to write his or her name on the cassette so that you develop the habit of doing it and don't forget to do it when you are busy and have more than one client.

Step 4: Verify your checklist of supplies and put on your new, disposable gloves.



Step 5: Prepare the client's finger.

- First, massage the fingertip.
- Open alcohol swab & swab client's 4th finger.



- Clean the finger with the pad. Allow the finger to dry before pricking. Do not blow or wipe finger dry.
- Discard swab in non-sharps container.

Step 6: Open lancet & prick finger (one hard prick at the side of fleshy part of finger).



Extra tips for step 6:

- When pricking the client's finger, squeeze the tip of the finger with your own fingers and prick the side of the fleshy part.

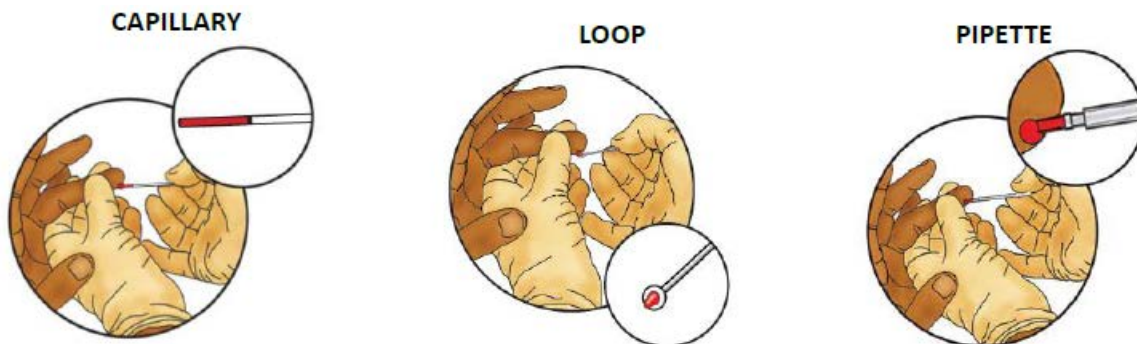
- This is less painful than pricking in the middle or at the tip.
- Prick hard enough so that a drop of blood quickly appears on the skin.

Step 7: Immediately discard lancet in the sharps box to avoid accidental pricks.



Step 8: Collect blood with the collection device following manufacturer's instructions. Put a clean swab or cotton on the client's finger and ask the client to apply pressure.

- Respect quantity of blood to be collected for the particular brand of RDT you are using.
- Possible blood transfer devices you may see:



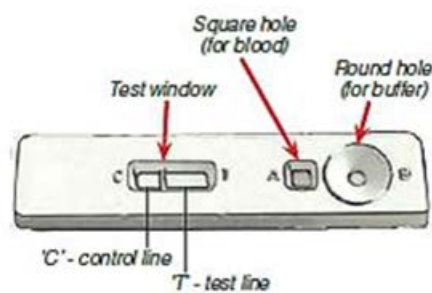
Important information for Step 8:

- Blood transfer devices will vary depending on which brand of test you are using. Be sure to read the instructions from the test box for each test you are using.
- Ensure a good-sized drop of blood is on the finger before collecting.

- Collect exactly the amount of blood as indicated on the blood transfer device.
- Do not lift the tip of the device, as this will allow air bubbles to enter.

Step 9: Use the blood transfer device to transfer the blood into the square hole marked A.

- Again, it is important to refer to the manufacturer instructions to determine how to use the blood transfer device.
- The job aids are a good guide but you should also read the product insert in the box.



Extra tips for step 9:

- Hold the RDT flat on the table top with one hand.
- With your other hand, carefully use the blood transfer device to transfer the blood sample to the sample hole.
- It is important to work quickly enough that the blood does not clot, but carefully so that all of the blood is absorbed into the pad.
- If most of the blood is accidentally wiped on the plastic edges of the well, the test will not work correctly.

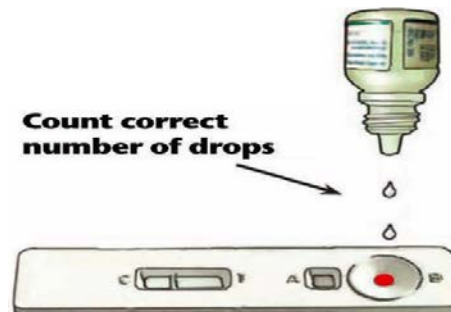
Step 10: Immediately discard collection device in sharps box.

Step 11: Hold buffer and drop buffer in the appropriate hole. Follow manufacturer's instructions.

ParaHIT – Pf device: Four (4) drops of buffer solution into the round hole marked B

Paracheck Pf rapid test: Two (2) drops of buffer into the round hole marked B

First Response Malaria Ag HRP2 test: Two (2) drops of assay diluent into the large round hole



Carestart Pf HRP test: Two (2) drops of assay diluent into the large round hole

Step 12: Remove the gloves and dispose in an infectious waste container. Record the time you completed the test and the time when the test should be read.

Step 13: Wait 20 minutes after adding buffer for test to finish working before reading results.

Important notes for Step 13:

- **The time to wait before reading results may vary from one brand of test to another.**
- Be sure to read the product insert to note the manufacturer's instructions, although 20 minutes is generally safe for most tests.

Step 14: Read the test results.

- Note: Do not read the test sooner than specified by the manufacturer.

- Generally, wait 20 minutes after adding the buffer. Any earlier and the test will not have finished working and you may get false results.
- Do not wait longer than 30 minutes to read the results.

Step 15: Record the test results in your client registry.

Summary of All 15 Steps

Step 1:	Check the expiry date on the test packet.
Step 2:	Open the plastic wrapping on the RDT package and remove the contents.
Step 3:	Write the client's name on the cassette along with his or her client number and the date.
Step 4:	Put on the gloves.
Step 5:	Prepare the client's finger.
Step 6:	Open the lancet. Prick the client's finger to get a drop of blood.
Step 7:	Discard the lancet in the sharps box immediately after pricking the finger.
Step 8:	Use the blood transfer device to collect the drop of blood.
Step 9:	Transfer the blood into the square hole marked A.
Step 10:	Immediately discard the blood transfer device in the sharps disposal bin or infectious waste container.
Step 11:	Take the bottle of buffer solution (assay diluent) and squeeze the correct number of drops into the round hole marked B.
Step 12:	Record the time. Remove the gloves and dispose in an infectious waste container.
Step 13:	Wait 20 minutes after adding buffer for test to finish working before reading results.
Step 14:	Read the test results.
Step 15:	Record the test results in your client registry.

Safety precautions

It is important to recall the safety precautions.

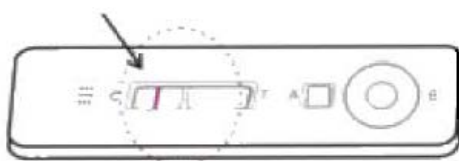
- ✚ Wash hands before and after procedure.
- ✚ Use sharps and non-sharps waste disposal containers.
- ✚ Use new disposable materials (lancets, gloves, blood collection devices, etc.) for each client.
- ✚ Ensure proper waste disposal (incineration or disinfection before disposal) of contaminated materials.
- ✚ Appropriately decontaminate work surfaces after spills and after work.
- ✚ Remember that used materials should be discarded appropriately.
- ✚ Remember to take off gloves after adding buffer and prior to recording the time on the device.

How to Discard of Waste

Sharps container	Infectious	Non-infectious
Lancets	Pipettes	Envelopes
Capillary tubes	Loops	Desiccant
	Swabs	
	Gloves	
	Testing devices	

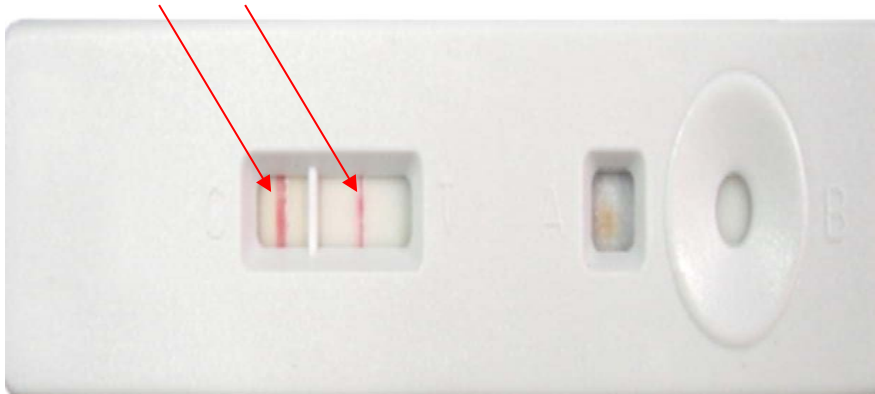
Reading the RDT results

- ✚ Do not move the cassette from its flat surface.
- ✚ View the window section of the cassette for pink-purple band(s).

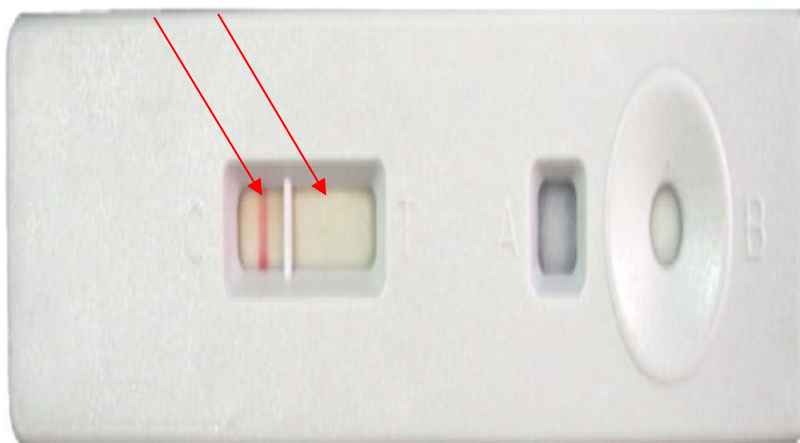


✚ For the test to be valid, the control line must be present.

✚ **POSITIVE:** If two red-coloured lines (the test and control lines) appear in the window section of the cassette, this means that malaria parasites are in the blood.

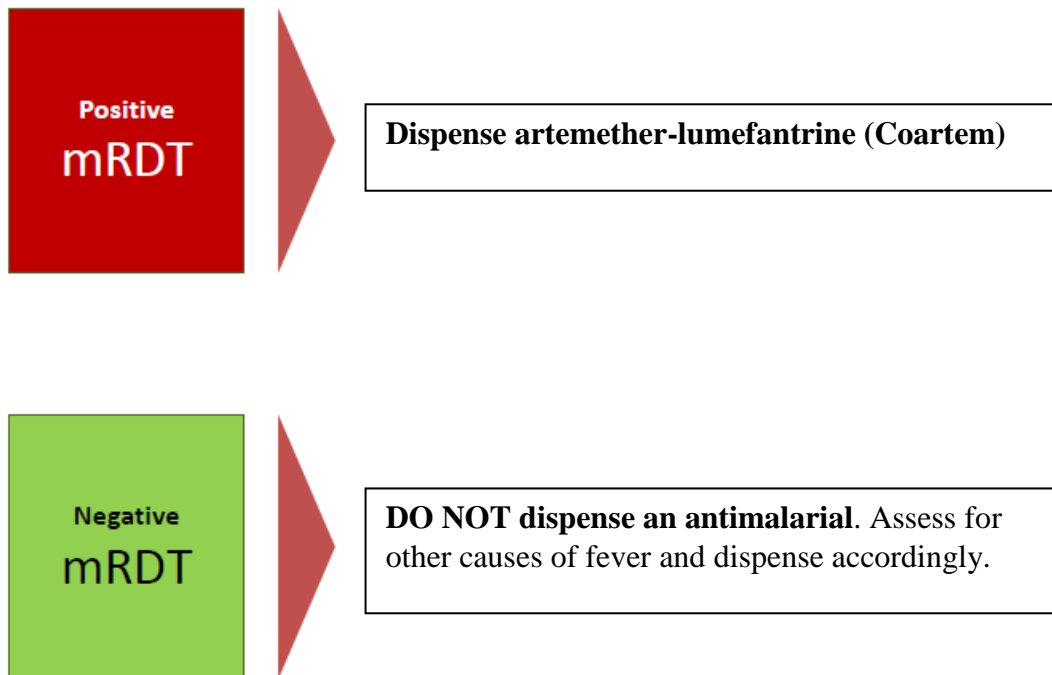


✚ **NEGATIVE:** If only one red line (the control line) appears in the window section of the cassette, this means there are no malaria parasites in the blood.



✚ **INVALID:** If the control line fails to appear, repeat the test with a new RDT. The reagents may be expired or the procedure was incorrectly done.

TREAT APPROPRIATELY!

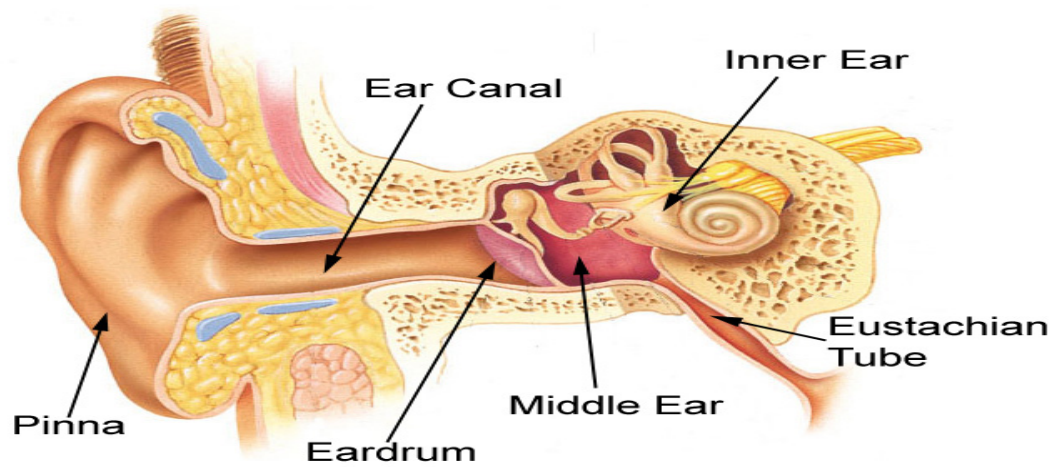


Keep in mind

- ✚ Store all RDTs at room temperature (4-40°C).
- ✚ Follow instructions carefully.
- ✚ Do not open the foil until ready to test.
- ✚ Properly dispose of the cassette and all waste.

SESSION TEN: DISEASES AFFECTING THE EAR

Structure of the ear



PUS DISCHARGE FROM THE EAR

This is the oozing of pus from the ear.

It is more common among children than adults.

Common causes include:

- ✚ Inflammation of the middle ear
- ✚ Inflammation of the outer ear

Client Assessment: Diagnosis

Question to ask	Reason for asking
1. Is there pus discharge from the ear?	✓ Helps identify inflammation/infection in the ear.
2. Does the discharge come from the inner or outer part of the ear?	<ul style="list-style-type: none"> ✓ Discharge from <i>inside</i> the ear is a sign of middle ear infection. ✓ Discharge from the <i>outer part</i> of the ear is a sign of outer ear infection. The client probably has sores there as well.
3. What colour is the pus discharge?	<ul style="list-style-type: none"> ✓ A yellow pus discharge in inflammation of the external ear is due to bacterial infection. ✓ A white or black discharge in inflammation of the external ear is due to fungal infection.
4. Is there itching of the ear?	<ul style="list-style-type: none"> ✓ Infection of the middle ear does not cause itching. ✓ Infection of the outer ear tends to cause itching on the external part of the ear.
5. How long has pus discharge been present?	<ul style="list-style-type: none"> ✓ Helps to know whether inflammation of the ear is acute or chronic. ✓ Helps to choose the medicine and duration of treatment. ✓ Any case of pus discharge that has lasted for more than 2 weeks or that comes and goes must be referred.
6. What treatment has been given so far?	<ul style="list-style-type: none"> ✓ Helps to know which treatment to give next. ✓ It can guide on whether to refer the client.

Client assessment: Conclusions

If ...	Then ...
Pus discharge comes from <u>inside</u> the ear and there is <u>no itching</u> ...	✓ It is a MIDDLE ear infection/inflammation,
Pus discharge comes from the <u>outer part</u> of the ear and there is <u>itching</u> ...	✓ It is an OUTER ear infection/inflammation,
In an <u>outer ear infection</u> , the pus is <u>yellow</u> ...	✓ It is due to a BACTERIAL infection,
In an <u>outer ear infection</u> , the pus is <u>white or black</u> ...	✓ It is due to FUNGAL infection,

INFLAMMATION/INFECTION OF THE MIDDLE EAR

Inflammation of the middle ear is caused by a bacterial or viral infection of the middle ear.

It is common in children and, if not properly treated, may result in loss of hearing.

Signs and symptoms

- ✚ Pain in the ear
- ✚ Pulling or rubbing of the ear with crying
- ✚ Nausea and vomiting
- ✚ Red bulging eardrum
- ✚ Fever
- ✚ Diarrhoea
- ✚ Difficulty sleeping
- ✚ Pus discharge from the ear

General measures

- ✚ Encourage the client to drink lots of fluid.
- ✚ Continue feeding the child.
- ✚ If there's pus discharge, daily wicking/ cleaning of the ear with cotton swab to prevent re-infection.

Drug treatment

1. Give antibiotics

Amoxicillin – Children

AGE	DOSE	DOSAGE
6-12 years	250 mg	8 hourly for 10 days
1-5 years	125 mg	8 hourly for 10 days
< 1 year	62.5 mg	8 hourly for 10 days

2. Give pain killers to reduce fever and pain

Paracetamol - Children

AGE	DOSE	DOSAGE
6-12 years	250 mg	3 times daily for 3 days
1-5 years	120 mg	3 times daily for 3 days
3 months -1 year	60 mg	3 times daily for 3 days

OR

Ibuprofen - Children

AGE	DOSE	DOSAGE
6-12 years	200 mg	3 times daily with food for 3 days
1-5 years	100 mg (1/2 tablet)	3 times daily with food for 3 days

Guidelines for referral

- ✚ Clients who fail to respond to the treatment.
- ✚ Children below 1 year.
- ✚ Clients with immunosuppression, e.g., HIV infection.
- ✚ Clients with chronic pus discharge from the ear.

INFLAMMATION/INFECTION OF THE OUTER EAR

Inflammation of the outer ear is a localized infection of the external ear canal.

It may be due to bacteria, fungi, or viruses.

It is most common among children.

Signs and symptoms

- ✚ Pain and swelling of the ear lobe
- ✚ Skin rash and itching
- ✚ Sores
- ✚ Pus discharge

Picture: Child with inflammation of the outer ear



General measures

- ✚ Clean the affected ear canal with clean water or normal saline.
- ✚ Cut the finger nails short to prevent traumatizing the area during scratching.

Drug management

Paracetamol - Children

AGE	DOSE	DOSAGE
6-12 years	250 mg	3 times daily for 3 days
1-5 years	120 mg	3 times daily for 3 days
3 months-1 year	60 mg	3 times daily for 3 days

Note: Refer the client to the health centre III or IV for management.