Use of Artemisinin-based combination therapies and rapid diagnostics tests for home-based management of fever in Uganda

Rapid Diagnostic Test (RDT) arm

Reference Manual

for Drug Shop Vendors (DSV)

ACT CONSORTIUM

ACT Consortium project
in Mukono District, Uganda

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Workshop structure and approach

Welcome to the training course on "Fever case management with RDTs." This manual brings you through the process of teaching DSVs how to manage fever and illness using RDTs. This training guide has been designed specifically as a capacity building tool.

The workshop has two main objectives:

- To equip participants with knowledge and skills for using RDTs in the management of fever cases in the community
- To prepare DSVs for handling fever and severe illness in the community

The workshop will be conducted over a period of 4 days divided into morning and afternoon sessions. There will be short breaks in the morning and afternoon and a lunch break of 1 hour. At the beginning and end of each training day, 10-15 minutes should be spent summarising the topics covered and allowing time for questions. Each training session should involve no more than 21 participants.

Training facilitators will include the two study coordinators, laboratory trainer and officer in charge from the parish health facility in which the training is taking place. In addition, Local Chairmen (LC) from the relevant villages should be briefed during training preparations before DSVs undertake the course. LCs should also be invited to attend the last day of the training during discussions about the role of the DSV and the certification. The purpose of including LCs in the final session is to ensure that both they, and the DSVs are aware of their roles and expectations.

The purpose of this training is to strengthen the skills of the DSVs based on their own experiences and challenges. This requires special skills from the trainers to listen and understand the needs of different participants and to be flexible to respond to these needs. The approach taken in this manual encourages participation of DSVs. When adults learn, they do so through applying new information to their own experience and through practicing new skills themselves. DSVs should be encouraged to contribute throughout the training.

In order to encourage participation DSVs should be seated in a circle or open square formation (see figure below) rather than in rows behind desks. Sitting in a U-shape, or circle allows participants to hear and see each other more clearly.

Figure 1: ***Taken from*** **Haaland et al (2008)**

The training is arranged into Sessions each with specific 'Learning Blocks'. Within each learning block it is important that the trainer facilitates 'Activities', such as role-plays, practicals, discussions or scenarios. For each session there is a set of laminated images that can be fixed to the wall or a flip chart and used as a reference during presentations or to generate discussions. Participants will each receive copies of these, on which they can write their own notes, as well as flowcharts, referral forms and treatment recording forms. Flowcharts and treatment recording forms need to be referred to at the start and end of each learning block to reinforce how these tools can be used by the DSVs when they receive clients.

Participants should be provided with the flowchart and treatment recording form as well as training stationary (notebook, pen and pencil in manila envelope) at the start of the training. Other materials such as "danger signs" job aids and referral forms can be distributed during the sessions when these forms are being introduced.

All flipcharts should be prepared before the training course and hung at the start of each session. In addition, the session should be indicated to DSVs on the training timetable so they can understand the progress of the training.

Facilitators for the course, the laboratory technician and local health facility clinical officer should be alerted and briefed before the training course is undertaken. This training manual should be provided to each facilitator at least 1 week before the training course so that they can understand their role in the training. Ensure that all facilitators understand that they must adhere to the training manual in order for all training sessions to be as similar as possible. Spend some time with the facilitators the day before the training course to talk with them about the materials they will be using. Explain how the training team will work together and what points are important to emphasise.

Throughout this manual there are notes for you, the trainer.

- An overview of training topics is given in grey at the beginning of each learning block.
- We encourage you to ask participants to share their experiences. When we suggest that you to ask them a question, we have used this symbol .
- Information to be explained by trainers to participants are marked with . Use this information as a guide for your explanations. It is not necessary to read it verbatim.
- Potential discussion points are marked with **.**
- indicates when materials should be disseminated to participants.

Materials to be given to participants at the start of the training:

- Notebook of paper
- Pens
- Copies of learning materials (handouts of the laminated images)
- Learning activity handouts
- Laminated jobaids
- Copies of treatment and referral forms

Session 1: Introduction - The new role of DSVs

Learning block 1.1. Get to know each other and the programme

Notes to trainer: In this session you will;

- Introduce malaria case management using ACTs and RDTs in Uganda
- Give a training overview and explain the training approach
- Ask participants to set out the training ground rules
- Ask participants and facilitators to learn about and introduce each other

You will need the following handouts for participants:

- Training timetable
- Treatment decision flowcharts
- Treatment recording sheets

Ensure that the training hall is prepared before participants arrive by:

- *Arranging seats in a circular position and ensuring enough for each participant*
- *Arranging training materials (markers, flipcharts, stationary and training materials) are ready in one corner of the training room*
- *Hanging the flipchart with "Artemisinin-based combination therapies and Rapid Diagnostic Tests for malaria treatment in fever case management in Uganda" on the wall.*

Welcome participants to the training and take a few minutes to introduce yourself (trainer), giving your name, institution and your role in the programme and training.

- Ask your colleagues to introduce themselves in the same way: the health facility nurse and parish supervisor as well as any other individuals involved in the training.

Explain The purpose of this training is because the Ministry of Health are introducing the use of malaria testing to improve malaria diagnosis and treatment in drug shops. However, before we get to the training, let us introduce ourselves – use the Icebreaker.

Ice-breaker

Invite the participants to suggest different things they would like to know about a person if they were to meet them for the first time. Designate participants (and facilitators/trainers) into pairs and allow ten minutes for each pair to get to know each other. After the time has lapsed the facilitator should begin by introducing her/his partner in a set time (60-90 seconds – use matches!) under the titles discussed previously.

After the introductions, thank everyone for their involvement and explain it was to help everyone feel comfortable together so that we could participate as fully as possible in the training over the coming days

Thank DSVs for their enthusiasm and participation

Explain We now need to set out the ground rules for the training course and designate people who will enforce the rules! *Write all rules which the participants suggest on the flipchart and ask for suggestions on who to enforce e.g. Chairperson, secretary, time keeper and prayer leader.*

Set out approach to training and ground rules.

Ask and discuss

- If we want to share experiences, what is important for this group to do? Let's make some ground rules
- Write up their suggested rules on a flip chart. Prompt to include the following:
- Confidentiality – if someone shares an experience or story, we will not repeat it outside of this room
- There is no right or wrong answer when talking about our experiences
- We will respect each other; we will support each other to learn

Ask participants

What are your expectations from this training workshop?

Note all responses on a flipchart which should remain on the wall throughout the training

Explain that the workshop has two objectives (present flipchart with objectives):

- To equip participants with knowledge and skills for the management of fever cases in the community
- To prepare DSVs for handling fever and severe illness in the community

Ask participants to note the training objectives compared to their expectations

Explain we will now talk about your roles as DSVs in the treatment of malaria and other fevers. First of all, we would like to tell you that it is important for you to share your experiences and thoughts with us throughout the training. We value them, and they will help us to help you.

Explain Malaria is the most common disease in Uganda. It does not only lead to illness and death but also has long term consequences on client development such as low birth weight, chronic anaemia, reduced growth, and in some cases severe neurological complications. Health unit records indicate that malaria accounts for 25-40% of outpatient attendances.

Ask participants

Can anyone tell the group what the medicine pack was called when community health workers used to be involved in providing Home-Based Management of Fever?

Answer: Homapak

Does anyone know what medicines were in homapak?

Answer: Sulfadoxine-Pyrimethamine and Chloroquine

Has anyone heard about a change in recommended treatment? What is the name of the new medicine that is recommended by the government?
Answer: Coartem

Explain

- Coartem, a combination medicine of Artemether and Lumefantrine, is a new and very effective medicine for malaria. It kills all parasites in the body, as long as it is taken properly.

- We will be talking about how to give Coartem to children and adults later.

- There is also new test for malaria, called the Rapid Diagnostic Test (RDT). We are working with the Ministry of Health to see if this new test will be useful in drug shops.

- The way we will see how useful the RDTs are, is by giving the tests to registered drug shops in some areas of the district and seeing how they get on compared with drug shops in other areas of the district who will not be using RDTs.

- The drug shop vendors (DSV) who are given the tests will be advised to give treatment for malaria to only those clients who have malaria parasites in their body, according to the result of the quick malaria test.

- We will ask for your experiences with using the new tests and Coartem for every fever. We will ask you to keep a record of all clients and their results so we can see how many of them required treatment. We will also follow up some of the clients to see how they got on with the test and with Coartem.

Ask participants

Any questions or comments so far?

Distribute materials (timetable, treatment decision flowcharts and the treatment recording sheet).

Explain

- In this training, we aim to help you develop skills to carry out RDTs and to strengthen your skills in dealing with children and adults with fever in your community.

- The training follows seven sessions;
  Session 1: Introduction – The new role of Drug Shop Vendors
  Session 2: How and when to use RDTs
  Session 3: Performing and reading an RDT and blood slides

Session 4: How to recognise clients with signs and symptoms of severe illness
Session 5: How to treat clients who are RDT-Positive
Session 6: How to treat clients who are RDT-Negative
Session 7: Keeping tally, storage and monitoring of stocks
Session 8: Recapping the roles of DSVs

- Explain to participants that there will be a post-test at the end of the training.
- Explain to participants that they will be given certificates of satisfactory levels of understanding and skills at the end of the training course

Explain

- We want to help you to learn based on your own experiences. We want to encourage you to share your own experiences, to ask questions and to make suggestions.

Learning Block 1.2. Why are RDTs being introduced in drug shops?

Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.

In this Learning Block you will;
- Discuss why RDTs are being introduced in drug shops

Ask participants

What is your role in the community as a DSV who sells malaria medicines? *Discuss the job of the DSVs and make a note on a flipchart. Encourage participants to discuss how they dealt with clients in the past, and community expectations of them as DSVs. Throughout the training you will refer back to the flipchart to determine how the role of the DSV is changing or being strengthened.*

Explain

- The role of the DSV will be changing in some ways because of the new medicine that will be used, and the new malaria test. In addition, DSVs will be given new drugs to begin clients on treatment for severe malaria before they go to a health facility. Now we will talk about why these changes are happening.

Explain

- Many clients have fever. Fever is a common and important sign of illness. In Uganda, we often assume that a person with fever has malaria. This is the right thing to do if there are no diagnostic tests are available.

- BUT things are changing, and we now recognise that there are many other reasons that people have fever, besides malaria.

Ask participants to arrange themselves in groups of three and ask each group to discuss and note down their thoughts on "What other illnesses can cause fever?"

- *Allow discussion for 2-3 minutes. Participants may identify flu, ear infection, pneumonia, typhoid, infected wounds, diarrhoea etc.*
- *Ask each group to report back two alternative causes of fever, and write these on the flip chart. Participants may identify diseases that you do not think cause malaria but you can still write these on the flip chart.*

Conclude There are many other diseases which can cause fever. Can we agree that not all fever is malaria?

Ask participants

Will clients who have fever caused by other diseases get better if the client is given Coartem? *No they will not because Coartem is a medicine against malaria. If a child or an adult has an illness caused by other things the Coartem will not make them better.*

Explain

- In some private laboratories, pharmacies, public health facility III's and hospitals nurses and doctors use microscopes and slides to examine our blood for malaria. Using a microscope allows them to see the malaria parasite which causes the disease and to count the number of malaria parasites in the blood.

- Now there is a new test that is also being used called – RDTs - which provide an accurate diagnosis for malaria, we can use these tests to check if the client has malaria or needs to go for examination and treatment for another cause of the fever.

- During this study, you will use RDTs to test clients for malaria, but will also collect blood on slides so that we can count the number of parasites present.

Ask participants

Have you seen RDTs used before? What are they like? *Participants may respond that they have seen RDTs used. Encourage them to share their experiences of RDTs, what they look like? What is different in the test compared to slides?*

Pass around a sample Rapid Diagnostic Test and blood slide (without blood). Explain to participants that these are the equipment that you will be using, in this training we will explain how and when to use them.

What do you think the advantages and disadvantages of using the RDTs in the community to check for malaria parasites? *Participants may suggest RDTs will: help to get the right diagnosis for the client, help to get the right treatment for the client and help to improve the service we give to clients. They may also identify challenges with RDTs, such as the lack of other diagnostic tests or difficulties for referral of clients. Add all of these ideas to the original flip chart page and explain that during this training we will help you to cope with challenges which may arise from the introduction of RDTs.*

Explain that as DSVs for this study you will test clients for malaria using RDTs, but will also take blood slides for later examination.

- The reason for taking both is so that you can provide clients and caregivers with a test result quickly, while the client is with you, so that you can give appropriate advice and treatment.

- The RDTs is as good as the slide in detecting malaria parasite; the parasite cannot hide from the RDT.

- However, a blood slide will give us more information about the parasite, like how many parasites are in the client's blood.

- You will also take a blood slide so that we can count the number of parasites in a clients blood later on after you have given treatment.

What do you think the advantages of RDTs are compared to microscope slides?
E*ncourage participants to think about the advantages and disadvantages of both slides and RDTs. Write these on a flipchart in different colours. Below are some of the responses which participants might give.*

Some of the advantages of RDTs are:

1) *They are easy to do*
2) *They do not require a microscope and different reagents or chemicals to treat the blood slide*
3) *We can get a result quickly (within 20 minutes)*

Advantages of blood slides are:

1) *They let us count the number of parasites in the blood*
2) *They are cheaper than RDTs*

Laboratory technician, explain:

- **Malaria risk is different in different parts of Uganda.** For example, in the mountain areas of Kabale, only 4/10 of children with fever had malaria parasites. In comparison, in Apac, 9/10 of young children with fever had malaria parasites.

Ask participants

Can you suggest why malaria levels are different in these different areas?
Because of the numbers of mosquitoes, because of the amount of standing water, because of the different weather, because of different temperature, because of the altitude (mountain areas have fewer mosquitoes and fewer malaria parasites).

Are there places in your area where there are higher numbers of malaria cases? *Let DSVs discuss their home villages and whether they think there are differences in the number of malaria cases in different parts of the village. Encourage participants to think about numbers of mosquito nets, spraying or coils that are used by different village members*

Ask participants

Can you think of any problems if we give malaria treatment when someone does not have malaria?

Explain

- Giving Coartem to an adult or child who does not have malaria may stop or delay them in seeking treatment from a health centre, and delay them in receiving the correct medicine for their illness. This could result in the client or client becoming more sick or even dying.

- There is a problem with treating all fever as malaria because this wastes medicine
- It can increase medicine stock-outs.

🗣 ***Summarise*:** In this training, we will talk about how to identify which client to test, how to do the test, which clients to give antimalarial medicines to, and what to do with clients who do not have malaria parasites. We will also increase your knowledge about how to identify clients who are in need of specialist treatment at the health facility and how to refer those clients. When we have finished with the course we hope you will feel confident to test and treat clients with fever so that more of them will recover more quickly.

Session 2: How to receive clients, confirm fever and start recording

🗣 **Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.**

Learning Objectives

By the end of this session, you should be able to:

1) Receive sick clients (including children and their guardians) in a way that makes them feel comfortable
2) Know important questions to ask when taking a history from a client with fever
3) Begin to record client information

Learning Block 2.1. Measuring fever

During this Learning Block you will;

- Begin using the flowchart and treatment recording form with participants
- Explain steps needed to measure fever
- Demonstrate to participants how to use a thermometer
- Ask participants to discuss ways of asking clients or a mother or caregiver about fever signs in their child

You will need the following materials

- Treatment recording forms
- Thermometers

🗣 **Explain** We will now talk more about the symptoms of malaria. However, we first want to discuss some of the tools the DSVs will have when they are treating clients with fever. The first ones we will talk about are the job aid flow chart and the treatment recording form.

Refer participants their flowcharts and treatment recording forms.

🗣 **Explain**

- Participants will begin to use the flowcharts to help decide how to diagnose and treat clients
- The flowchart is a set of instructions about what to do when a client comes to you with fever
- The treatment recording form also needs to be completed for each client. We will refer to the treatment recording form throughout the training.

Ask participants to look at their flow charts and treatment recording forms

Explain to participants that the flowchart is intended to help you to remember what to do and when to give treatment as well as when to refer clients

- Read through the treatment flowchart with the participants, asking one individual at a time to read a different part.
- Begin at the top of the flowchart and read through the RDT positive arm first, and then the RDT negative arm.
- After reading through the flow chart, explain to participants that we will cover each aspect of the flow chart during the training.
- After the training participants will be provided with the flow charts in order to help them perform their roles in their village.

Tell DSVs that they should consult the list during break to get their DSV ID numbers. Explain that they need to take a note of their numbers and write them in their notebooks

Explain

- We will now talk about malaria and how you will begin to assess whether a client who comes to you has the disease.

Ask participants

What are the symptoms of malaria? *Answers: fever, chills, headache, joint pains and vomiting*

What is the most common symptom of malaria? *Answer: Fever*

How does malaria cause these symptoms, particularly fever? *Participants may talk about mosquitoes and parasites. Encourage a short discussion; even if you do not agree with their responses, it is helpful to hear the group's experiences.*

Explain

- Mosquitoes carry malaria parasites: mosquitoes can pick up malaria parasites when they bite someone who has malaria parasites in the body. The mosquitoes can then give malaria to someone else when they bite them, injecting the parasites into their body.

- Malaria symptoms are caused by having malaria parasites in the body.

Explain

- We will now talk more about the symptoms of malaria. As we discussed before, one of the most common symptoms that clients report is fever. Fever is an important signal that there is something wrong in the body.

Ask participants

What are some of the terms that are used to describe fever?

Answer: omusujja, omushwija and *omutsusa*.

Explain

- It is the responsibility of the DSV to determine whether the client actually has fever by carefully asking questions of the client or caregiver, and examining the client.

Refer participants to the flowchart and explain that we are beginning at the point when someone comes to the DSV and reports that their client has fever. If a client has fever, you should test with an RDT.

Ask participants

How can we check whether a client has fever?

Answer: Feel the client's body, use a thermometer

Explain

- All clients with malaria will have fever. If a client has not had fever, but is ill in another way (e.g. stomach ache or skin rash) they do not have malaria.
- When we are about to take a client's temperature it is necessary to explain what we are doing. Likewise, if the client is a child it is necessary to explain to the child's caregiver what you are doing at each stage.
- The reason we are taking the clients temperature is to confirm that the client has fever at the time they visit you. However, it is also important to ask about the history of fever in the client.

Demonstrate: ask for a volunteer to play the role of the mother of a child who has been brought to you with a report of fever, then talk through what you are doing whilst you demonstrate:

- With an electronic thermometer, you can measure the child's temperature.
- Sit the child on the mother or caregiver's lap. Speak gently to encourage the child to be calm and to sit still. You may need to reassure the child that the thermometer does not hurt.
- Place the thermometer against the skin under their armpit, and lower their arm to hold the thermometer in place. It is important the thermometer is placed very close to the skin.
- It will take a few minutes for the thermometer to measure the child's temperature. You will be able to tell when the thermometer is ready when you hear the beeping of the alarm, or the numbers have stopped flashing.
- You can now remove the thermometer and read the result.

Explain

- The person has fever if the result on the thermometer is above 37.0°C. The client's temperature will need to be written on the treatment recording form.

- If the temperature is below 37.0°C you still need to ask the client (or a child's mother or caregiver) about the any fever the client had prior to visiting you.

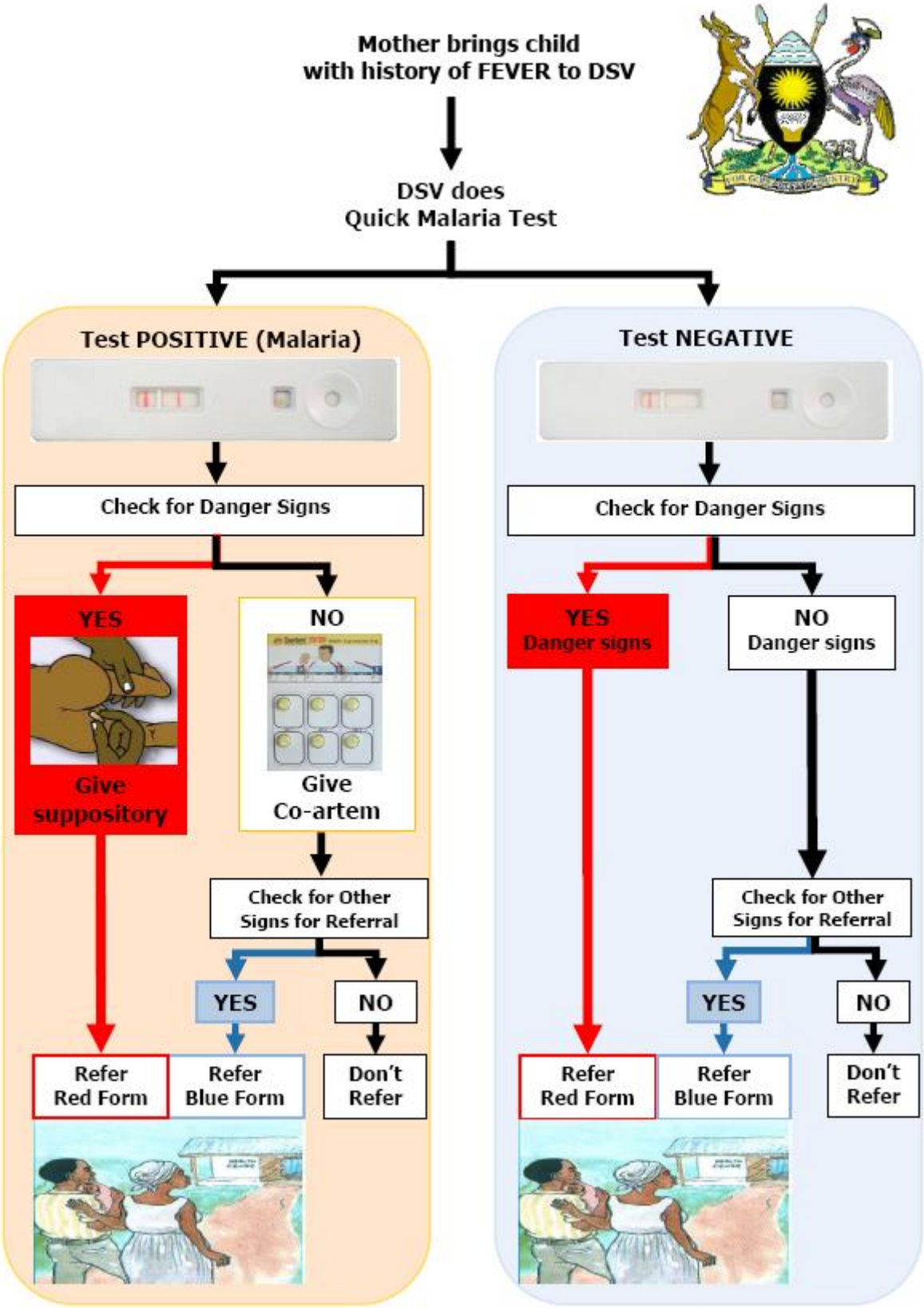
- You should ask the following questions:
  - When did the fever start? Did the fever start that day, the previous day or before that? This is an important piece of information you will need to note down on the treatment recording form
  - How long has the fever lasted?

- If the temperature is below 37.0 °C when you measure it, but the client or mother of a client reports fever in the last three days you must do an RDT test for malaria.

- If the temperature is below 37.0 °C and the client or caregiver of a client does not describe body hotness or fever **in the last three days** then the client does not have fever and it is not necessary to do a malaria test or to give malaria treatment.

Practice

Now ask the participants to practice this on each other – get into groups of three: one DSV, one client and one observer. See if they can remember all of the steps in taking the temperature and asking the questions.
If there is time, participants can each play the DSV role. Some participants may choose to play the part of adult client, others may choose to play the part of a mother bringing a child with fever to the drug shop for treatment.


Mother brings child
with history of FEVER to DSV
DSV does
Quick Malaria Test
Test POSITIVE (Malaria)
Check for Danger Signs
YES
Give
suppository
NO
Give
Co-artem
Check for Other
Signs for Referral
YES
NO
Refer
Red Form
Refer
Blue Form
Don't
Refer
Test NEGATIVE
Check for Danger Signs
YES
Danger signs
NO
Danger signs
Check for Other
Signs for Referral
YES
NO
Refer
Red Form
Refer
Blue Form
Don't
Refer

Refer participants to the flowchart. Explain that without FEVER, there is no need to do a malaria test. This client can be managed in the same way as one with a negative RDT result. ALSO, refer the participants to the treatment recording form - they must record when the client had fever.

Explain

- We should also ask about any prior treatment:
  - What has been done to treat this illness before coming here today?
  - What other medications have been taken?
  - If medications were taken, how many tablets were given, and what was the date that the first dose was taken?

Ask participants

Why do we need to know about prior treatments?

Answer: If a client has been treated for malaria elsewhere and is still ill, this may mean they have another illness. It is necessary to record any treatments.

Explain

If a client has a temperature above 37.0°C or has had hot body or fever in the previous few days then they need to be tested with an RDT to check for malaria or treated for malaria.

Refer participants to the flowchart. Ask them to check the action if a client has fever – what will we do next? Explain that in the next session we will show them how to use the RDT. What do we do if the clients do not have fever?

Summarise

In this session we discussed fever and the usefulness of this symptom in determining whether to test a client with an RDT. We discussed important questions and physical examination findings in clients with fever.

Any time you are deciding whether a client's fever is caused by malaria, or by another illness, you can perform an RDT. Together with the information you get from the history and physical examination, the RDT result will help you to provide the best treatment for the client.

Ask participants to re-read the treatment decision flowchart and treatment recording forms to ensure they understand how those tools will help the DSVs decide how to treat and advise clients or their caregivers.

Session 3: Performing and reading an RDT and blood slides

Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.

Learning objectives

By the end of this session, participants should be able to:

1) Describe an RDT and how it works
2) Perform an RDT correctly and safely
3) Read an RDT accurately and record the result as positive or negative
4) List some important tips for using RDTs
5) Describe safe handling of blood and sharps

Learning Block 3.1.: Performing and reading an RDT

During this Learning Block you will;

- Use the WHO RDT manual to train participants
- Describe how the RDT works
- Demonstrate and practice the different steps in using an RDT

You will need the following handouts for participants:

WHO guide on the use of RDTs (one-page)

You will need:

Demonstration RDT

Support equipment (Gloves, lancets, alcohol swabs, sharps bin, pipette and buffer)

Explain

- For this session we will talk about taking blood slides and performing Rapid Diagnostic Tests. We will first tell you how blood slides and RDTs are taken. We will then demonstrate how to make blood slides and perform RDTs. Then we will ask you to practice taking a blood slide and performing an RDT on each other. After that we will move to the health facility where we will practice taking blood slides and RDTs on clients.

- Slides and RDTs that you use will be marked with the DSV ID number and the client ID number.

Ask participants – do you remember your DSV ID number? Ask for some participants to tell us their DSV ID number.

Explain

- The DSV ID number is very important. Make sure that you remember it at all times. You need the DSV ID number to complete the treatment recording form, and to assign the client ID number.

- The client ID number is your DSV ID number PLUS a dash '-' PLUS the client number who comes to you

  For example:
  - Your DSV ID number is 111A
  - You start your DSV work. The FIRST client who comes to see you will be record number 1 (refer to treatment recording form).
  - The client ID number will be 111A – 1

- It is important to write clearly on the treatment recording form. As you will see it is important to write clearly on the slide as well.

- It is very important to make the "dash" between the numbers very clear

Practice

Ask DSVs to open their exercise books. Get them to draw **6** slides and RDTs in their exercise books. Ask participants to use their DSV ID numbers to assign client IDs and to write them on the slides with the date. Facilitators should check the exercise books to ensure that DSVs have completed their slides correctly.

Refer to the treatment recording form. Ask participants to look at the sections for "record number", "DSV ID" and "Client ID". Tell participants these are the sections that they will have to complete with their DSV ID number, the client record number and the client ID number.

Practice

Distribute two slides to each participant. Tell them that they are filling in the slide for the very first client they will see. What is the client ID number they should use? What else should they write on the slide?
Now tell participants that they should imagine they are seeing the 21st client. What is the client ID number they should use? What else should they write on the slide?

Explain

- Now that we have explained the DSV ID and client ID number we will move to blood slides and RDTs. Remember you will need to know how to make the client ID number to fill in the treatment recording form and write on the blood slide and RDTs

🗣 **Explain**

- We will now go through the different steps needed to perform an RDT and make a blood slide (trainer to refer to WHO guide on RDTs).

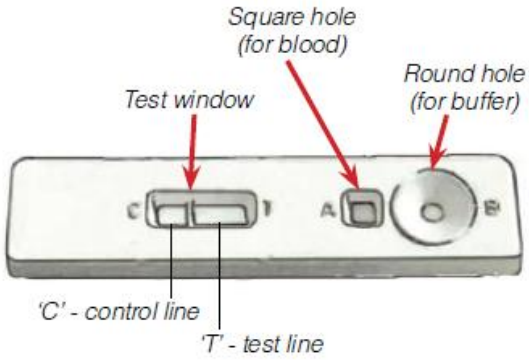
This section is a summary of the WHO training manual on RDTs. This is intended as an overview for you the trainer, or as a reference for supervisors when visiting DSVs once they have begun to use RDTs in their premises

How to use an RDT

🗣 **Explain;**

- An RDT is made of a strip in a case of plastic. The strip is the actual RDT test (pass a sample RDT test around the group so participants can see and handle the RDT).

Figure 2: RDT test



- We apply a drop of blood to the RDT, afterwards we add a special liquid called **buffer**. Buffer carries the blood, along with any parts of the malaria parasite, along the length of the RDT.

- There is a special strip on the RDT which will trap all the malaria parts present in the blood. When there are parts of malaria trapped at the **test line (position T)** it will change colour and make a **red or purple line** appear. This gives a **positive RDT result**.

- If there is no parasite antigen there is nothing to trap and no line will appear. This gives a **negative RDT result**.

- The RDT also contains has a **check** or **control line (position C)** which shows us if the buffer and blood have reached the end of the test strip. The control line tells us whether the RDT has worked correctly. All completed RDTs should show a red or purple control line. If we do not see a control line, this means that the test has not worked properly and the RDT result is **not valid**. In this case, we must repeat the client's test with a new RDT.

- There are different RDTs, the one we will use for this study the First Response rapid test. The first response test which you will use has been shown by the World Health Organisation to be very accurate.

🗁 Performing an RDT

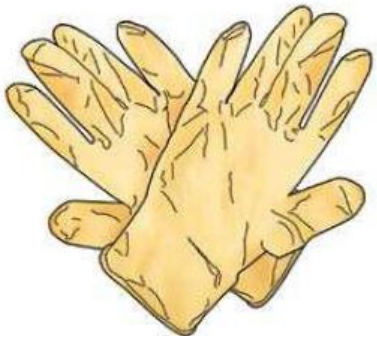
For this part of the session, we will use the RDT picture guide. The picture guide has step-by-step instructions showing how to perform an RDT. The steps are listed here, along with some additional tips for some of the steps:

🗣 Explain

Before you begin, collect:

1) NEW unopened test packet
2) NEW unopened spirit swab (alcohol swab)
3) NEW unopened lancet
4) NEW pair of disposable gloves
5) Bottle of buffer
6) Timer or clock
7) Sharps container

Step 1: Check the expiry date on the test packet



Ask participants: Why is it important to check the expiry date?

Step 2: Put on the gloves. Use new gloves for each client

Ask participants: Why do we need gloves when doing the RDT test?

Step 3: Open the packet and remove: test, loop, and desiccant sachet.

Extra tip for step 3: Each RDT packet contains a "desiccant sachet," which keeps the RDT dry until the packet is opened. The desiccant in our RDT packets should be **blue**. If the desiccant is purple, pink, or white, it means the test packet has been damaged. If the desiccant is not blue, throw away the test and open a new RDT packet.

Step four: Write the client's name on the cassette.

Extra tip for step 4: We will write the client's **name, DSV register number and date** on the cassette. Pencil works best for writing on the RDTs.

Step 5: Open the spirit swab (alcohol swab). Grasp the client's ring finger. Clean the finger with the spirit swab. Allow the finger to dry before pricking.

Extra tip for step 5: After cleaning the client's finger, allow it to air dry. Do not blow on the finger or wipe it – these actions make the finger dirty again.

Step 6: Open the lancet. Prick client's finger to get a drop of blood.

Extra tip 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.

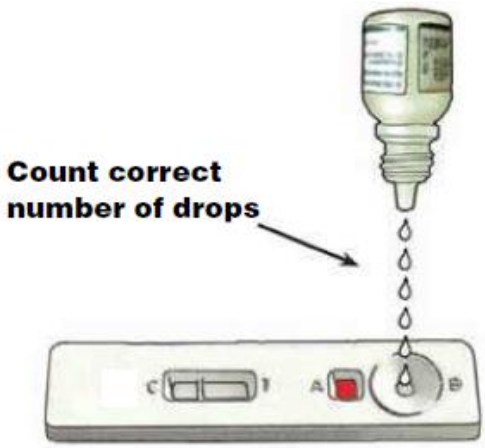
Step 7: Discard the lancet in the sharps box immediately after pricking finger.
Do **not** set down the lancet before discarding it.

Step 8: Use the capillary tub to collect the drop of blood.

Extra tip for step 8: Touch the capillary tube gently to the blood drop on the client's finger. The capillary tube will fill with the correct amount of blood.

Step 9: Place the capillary tube tip on the square hole **position A** and release the blood onto the square

Extra tip for step 9: Hold the RDT flat on the table top with one hand. With your other hand, carefully place the blood drop on the pad at position A. 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 the capillary tube in the sharps box.

Step 11: Put six (6) drops of buffer into the round hole at **position B.**

Extra tip for step 11: Check the time just after you add buffer to an RDT, and write the time on the RDT.

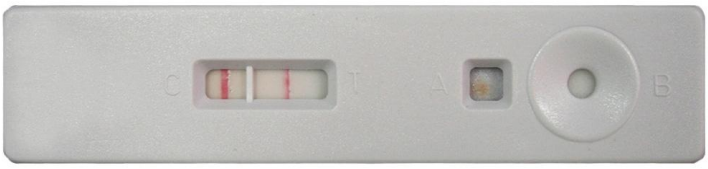
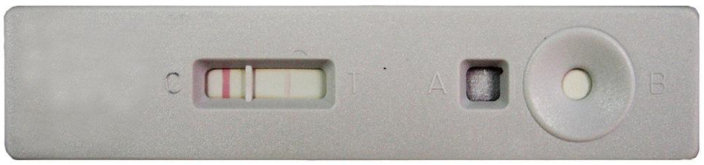
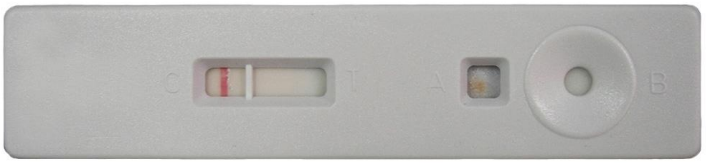
Step 12: Wait **20 minutes** after adding buffer for test to finish working.

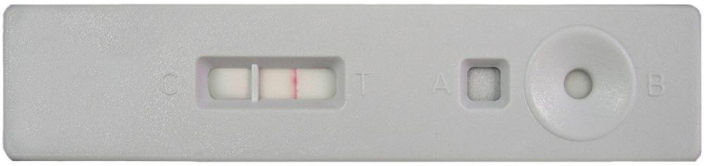
Step 13: Read test results.
Note: Do **not** read the test sooner than **20 minutes** after adding the buffer. The test will not have finished working and you may get false results.

Extra tip for step 13: Before you read the RDT, check the time again to be sure that at least 20 minutes have passed.

Step 14: Deciding whether an RDT is positive or negative
For this part of the session, we will use the RDT picture guide. We shall also use example results in the WHO training photographs and quiz, and actual RDTs.

Point 14 on the RDT picture guide:

The RDT is **POSITIVE** if there are **two** red/purple lines - one line at position C (the check line) and a one line at position T (the test line). The test is **positive** even if the red/purple line at position T is faint.     ➔ This means the client **does** have malaria. You should give malaria medicine to this client.
The RDT is **NEGATIVE** if there is **one** red/purple line at position C (check line) but **NO** red/purple line at position T (test line).  ➔ This means the client does **not** have malaria. You should **not** give malaria medicine to this client. Check for other signs that indicate that referral to a health centre is wise.
The RDT is **FAULTY** if there is **no check line** at position C. This means the test is damaged. Even if there is a line at position T, if there is no line at position C it means the test is damaged.



➔ This means the test has not worked correctly and the results are not valid (false). You must repeat the test using a new RDT before you can decide on treatment.

Refer participants to the flowchart. Ask them to check where on the flowchart the RDT positive and Negative sections are and the actions they will need to take.

Refer participants to the treatment recording form. Immediately after you read the RDT, record the result on the DSV client treatment record form. Use the following symbols, and write clearly:

If the RDT is positive, instruct the DSVs to write:	**RDT pos**
If the RDT is negative, instruct the DSVs to write:	**RDT neg**

Ensure you show participants where to write results on the treatment recording form

If the first test result is invalid, you should repeat with a new RDT. Then record the new test result in the client's record. We shall discuss the importance of each test result in more detail in Sessions 4 and 5.

Remind participants about important aspects of using RDTs

With attention and practice, you will soon be very skilled at preparing and reading RDTs and blood slides. Here are some important points to keep in mind:

- Always **check the expiry date**. An expired RDT may give a false result.

- Do **not** open an RDT packet until you are ready to use it for a client. If a packet has been open for some time before the RDT is used, the RDT may give a false result.

- Do **not** put down the lancet or loop on the table after use. **Put the lancet and loop immediately into the sharps container.** If you put them on the table, you or someone else may accidentally be pricked. Accidental pricks can spread disease.

- Carefully collect the **correct amount of blood** and **place it neatly on the pad at position A**. The RDT may not work properly if you use too little or too much blood, or if the blood is not absorbed into the pad.

- Hold the bottle of buffer vertically over position B and add **exactly 6 drops of buffer**. The RDT may not work properly if you use too little or too much buffer.

- Be sure to wait **20 minutes** after adding buffer, before you read the RDT. Reading the RDT too soon can give a false result.

- Remember to **check for the control line**. If there is no control line, the RDT has not worked properly and the test result is invalid (false).

Learning Block 3.2. Taking a blood slide

During this Learning Block you will;

- Describe and demonstrate the steps in taking a blood slide for malaria

You will need:

Blood slides

Support equipment (Gloves, lancets, alcohol swabs, sharps bin, loop and buffer)

Explain

We will now give a talk and demonstration on how to make blood slides. We will be making thick and thin malaria blood films on the same slide. Slides will be marked with the Client ID and date from the DSV Treatment recording form.

Explain

- For each sample, two thick films should be prepared on the same glass slide, which should be clean; free from scratches and not greasy.

- To make sure that slides are kept clean, always handle them by the edges to avoid fingerprints and grease getting on to them.

- Put on disposable gloves before taking the blood sample. Remember also to dispose of all sharps and bloody waster materials safely in the sharps box.

Explain

You will be taking the blood slide and RDT at the same time. It is important to have all materials ready for both tests.

1) Prepare the blood slide, lancet, cotton wool, sharps box, slide box and RDT so that they are within easy reach for you.

2) Label the blood slide on the frosted end and RDT with the clients ID number, the date and your DSV ID number.

3) To obtain the blood sample (summary from RDT session):
    a. Very young infants (< 3 months old): Wipe the infant's big toe (or heel) with the alcohol swab to remove dirt and grease. Then wipe the area dry with cotton wool.
    b. For older infants keep the clients left palm in an upward position. Clean the middle or ring finger with the alcohol swab to remove dirt and grease. Dry with clean cotton wool.

4) Gently massage the finger or toe to stimulate blood flow.

5) Prepare the lancet by pushing in the yellow tip slightly and then turning it and pulling it out.

6) Place the end of the white part of the lancet on the side of the ball of the finger, toe or heel.

7) Hold the lancet with two fingers underneath the "T" area of the lancet with your thumb placed on the yellow button on top

8) Ensure the hole at the end of the lancet is placed firmly against the part of the finger you are going to prick

9) Press the yellow button **hard** – the lancet should puncture the skin and the client will begin to bleed.

10) Wipe away the first drop of blood with some cotton wool

11) Once a finger prick has been made it is important to work quickly in order to collect enough blood for both the RDT test and the blood slide. Having completed taking blood for the RDT set the RDT in a safe place and ensure you have written the time of the test on the RDT.

12) To obtain blood for the slide, apply gentle pressure to the finger.

13) Hold the glass slide above the finger/toe and touch the glass slide onto the drop of blood. Repeat twice to obtain two drops on the glass slide.

14) Wipe the remaining blood from the finger or toe with dry, clean cotton wool.

15) Place the glass slide on a flat surface, and using the blunt end of the lancet (or the corner of another slide), spread each drop to make two thick films. The thick film should not be left too thick or spread too thin. Spread the drop until looking through the blood film you can just about make out words that are written on a sheet of paper placed under the glass slide. This indicates the film is of correct thickness.

16) Place the blood film to dry, under a cover to protect it from dust and flies, for about 1 hour. Once the film is dry you can place it into the slide box.

Explain

- We would now like you to take some time (about 45 minutes) to practice taking blood slides and RDTs on each other so that you can understand how it feels to prick a finger. After participants have pricked each other they will move to the health facility.
- As each pair finishes, they should replace their equipment to the top of the room and assemble outside to be transported to the health facility.
- Once there are enough participants to fill the vehicle they should go to the health facility and send the car back.

Practice

Now ask the participants to practice this on each other – Ask participants to assemble into pairs and collect the equipment necessary for taking a blood slide and RDTs. They will need space to work, tell participants to spread out in the room and find a good place where they can set out their equipment and get ready to practice making a thick film and to practice how to prick each other.

Participants should firstly practice how to make a thick film using hepinarised blood and the applicator sticks.

After participants have practiced making thick films they should practice pricking each other and make thick blood slides and performing RDTs.

Remind participants that they should mark the blood slides and RDTs they make with the client ID and the date. Pretend for this practice that the thick films you make are for the first client you see, and that the slide you make for your partner is the second client you see.

Instruction to trainers for practical at health facility

Organise participants in the health facility so that they each have one client for whom they will make a blood slide and RDTs. While each participant is making a slide in the laboratory under the supervision of the laboratory expert, the remaining participants should be practicing taking temperatures from clients.

Other trainers should also take this time to go through the treatment recording form with participants as they wait to ensure they understand how they must complete the forms.

Ask the participants (after return from the health facility)

- Are there any questions about how to take a slide or RDTs? Or about your experiences in the laboratory? Or how to assign the client ID?

Explain

- You will have a slide box enough for one hundred slides with you in your village.
- However, you must transport slides and RDTs regularly to the health facility so that they can be stained.
- The best way to transport the slides is to wrap them in tissue/toilet paper. RDTs should be wrapped in paper – this way DSVs should remain with their slide boxes so that they can keep slides safe.

Practice

Set up the table so that there is tissue paper and the slides which DSVs took earlier. Ask each DSV to come up to the table and wrap their slide in the way they should before it is brought to the health facility. Do the same for RDTs and paper.

Session 4: How to recognise clients with signs of severe illness

🗣 **Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.**

Learning objectives

By the end of this session, you should be able to:

1) List danger signs of severe illness
2) Identify clients with severe illness
3) Be able to explain correctly to clients (or caregivers) about referral
4) Demonstrate how to record and complete the treatment and referral forms

Learning Block 3.1: Recognising clients with severe illness

During this Learning Block you will;

- List danger signs of severe illness
- Understand the job aid for "severe illness" – PINK laminated job aid

You will need the following handouts for participants:

- Job aid for severe illness

🗣 **Explain**

- Most clients come to the DSV with illness that is not severe. However, some clients come with severe illness. These clients need to be given emergency treatment and referred to the nearest health centre for further examination and treatment.

Ask participants

❓ What could happen if we delay in encouraging a person with severe illness to a health facility? *Answers: It is possible they will not get the correct treatment and they could die. If they go to the health facility immediately the staff there can help them and administer the correct medicines straight away.*

• •

🗁 Refer participants to the flowchart. Ask them to check at what stage they are at on the flow chart. Ensure they understand that they are at the section "check for danger signs" on both sides of the chart. Emphasize that severe illness needs to be checked for both RDT positive and RDT Negative clients.

• •

🗣 **Explain**

- When a client comes to you, you should always check for signs of severe illness. If a client has any of these danger signs he or she might die and needs to be taken immediately to the nearest health facility.

- You should also look for other signs that suggest the client may have another illness (different from malaria) that can only be treated with medicines kept at the nearest health facility. These signs also need to be referred to a fully-trained health worker for diagnosis and treatment.

- The three steps to decide on the correct treatment to give each client can be summarised as follows:

  Step 1. Does the client have any danger signs that need urgent attention and emergency referral?

  Step 2. Does the client have any other signs that need to be referred for treatment?

  Step 3. Does the client have any other signs that need to be referred for treatment?

Explain

- In this session we will discuss how to recognize that a client has severe illness. The signs and symptoms of severe illness that we will discuss here may result from malaria or another serious infection. We will also review guidelines on how to pre-treat and refer such clients to a government health care facility.

- **You can make an important difference in the client's outcome by recognizing severe illness and acting quickly to offer pre-treatment and prompt referral to a Health Centre.**

Explain

- The first step in helping clients with severe illness is to recognize the signs and symptoms that the client is in danger. If a client has any of these symptoms or signs of severe illness, you should act quickly.

Ask participants

What do you think the signs of severe illness are? How would you know if a client was severely ill? *Make a note of responses on a flipchart*

• •

Distribute job aid showing danger signs (pink form). Ask participants to read out different sections of the form. Discuss their experiences with the different danger signs. Ask them to explain to their experiences

e.g. Has anyone seen a person have convulsions? Can you tell us what it is like?
e.g. Has anyone seen a person in a coma? Tell us what it is like.

• •

Explain

The General danger signs are:

- Convulsions (or fits) currently or at any time within the past two days. *The local name for convulsion is Ebyaga, EbyAnkole or Eyabwe. Discuss with participants whether they have seen anyone with convulsions. Get them to describe their experiences.*

- **Changed mental state** – confusion, lethargy (sleepiness), or unconsciousness (coma): It is important observe the client closely and look for;
  - **Confusion or lethargy (sleepiness)**: Is the client interacting with you and other individuals appropriately, or does he or she appear confused (not oriented in time and space) or fall asleep when left to his own?
  - **Coma**: If the client is unconscious or sleeping, can you wake him or her with gentle shaking? Does the client react to loud noises?
  - Does the client follow an object which is moved in front of his or her eyes? Or, if the client is a child, does he or she look at the mother or caregiver?

- **Extreme weakness** – the client is unable to sit or stand without support

- **Inability to drink or eat**, or **inability to breastfeed** for small children

- **Vomiting everything** so that the client is unable to keep down food, fluids, and medications

Explain

- Although the danger signs we have already explained are the most severe, there are other signs which could also show that a client is very ill. These are;

- **Extreme body temperature** – the client is either very hot or very cold (temperature is either >38.5 ^{O}C or < 35 ^{O}C)

- **Severe anaemia** – look for very pale palms, fingernails, tongue, and eyelids

- **Jaundice** – look for very yellow palms or eyes

- **Difficulty in breathing** (respiratory distress): Is the client or client breathing more quickly than normal? Is the client or client struggling to breathe? Fast breathing in a client 2-12 months is more than 50 breath/min. Fast breathing in a client 1-5 years is more than 40 breath/min

- **Severe dehydration –** look for dry mouth and tongue (a coated tongue), sunken eyes, inability to drink or to keep down fluids, tenting of the skin (skin pinch goes back very slowly). In children less than 1 year look for a sunken fontanelle (the soft spot on top of the head)

Explain

- We are now going to demonstrate how to assess for danger signs, carefully examine the following:

- **Look at the general behaviour of the client**
  Check: are they awake and responsive to everyone around them? Can they tell you their name? If the client is a child, do they look at you or at their mother when their name is called?
  - *Look out for a client who is very confused or sleepy, and cannot be woken.*
  - *Look out for a client who is very weak and cannot stand or sit without support.*

- Ask about whether the client has had **fits or convulsions** in the last few days

- **Check for extreme body temperature**.
  - When you measured the temperature, was it *very high (38.5 ^{O}C or higher*)?
  - When you measured the temperature, was it *very low (35.0 ^{O}C or lower*)?

- **Check for loss of fluids (due to vomiting or being unable to eat or drink).**
  It is common for a client who has fever to vomit from time to time, so vomiting is only a concern if the client is vomiting a lot and may become dehydrated. Ask whether he or she has managed to keep any food or drink down in the last 24 hours or since the vomiting began? Have they passed any urine in the last 6 hours?
  If the client is a child, ask the caregiver whether they have been eating and drinking normally? If the caregiver reports vomiting, ask whether the child has managed to keep any food or drink down in the last 24 hours or since the vomiting began?
  - *Look out for a client who is not able to eat or drink anything.*
  - *Does the client pass less urine than usual? Ask has the client stopped passing urine completely in the last 6 hours?*

- **Examine the hands and finger nails**.
  Ask the client to open their mouth and show you their tongue. In babies you can use the handle of a tea spoon to open the mouth gently. In babies you can also look at the soles of the feet. In a healthy client these should be pink.
  - *Look out for extreme paleness* (pallor), in which the fingernails, palms of the hands, soles of the feet, gums and tongue and inside of the eyelids are white. Pallor indicates anaemia, which may be caused by malaria or other conditions. (intestinal parasites, nutritional deficiencies and others)

- **Look at the Eyes**
  - *Look out for yellow colour of the eyes* (jaundice). Jaundice may be due to very severe anaemia from malaria or other illnesses.

- **Look at how the client is breathing**
  Look out for any signs of the client appearing to be struggling to breathe. A client

who has difficulty breathing may show signs such as; nasal flaring, chest in-drawing, and use of neck and chest muscles in order to breathe. This may be caused by severe pneumonia, or severe malaria, or another serious infection. Look for;

- *Deep in-drawing of the chest*
- *Flaring of the nostrils to draw more air in*.
- *Fast breathing*: Check for a client who appears to be breathing faster than normal for his or her age.

- **Look at the Head**
  - *In very young children and babies, look for dehydration by seeing whether the child's fontanelle is sunken- this is a sign of severe dehydration.*

🗣**Explain:** We will now practice what we learned in this session using role-plays

Instructions to trainers for role-plays (see Appendix One: How to undertake role-plays)
• *Explain to the participants that you would like to undertake a role-play/drama and that you need four volunteers.* • *Ask for four participants to volunteer to do the role-plays* • *Each trainer should be responsible for one role-play (I & II)* • *Each trainer should brief the volunteers involved in their role-play about the characters that they are expected to play* • *The two characters – the DSV and the mother – should be briefed individually out of earshot of the other character* • *Once the DSVs have been briefed, return to the training hall.* • *Explain to the remaining DSVs that their role will be to observe the drama.* • *The observers must follow the role-play using their flowcharts, job aids and especially their treatment recording form. They should observe which details from the role-play they can fill in on their treatment recording form. They must be prepared to discuss the role-plays. Explain that this is a good time to share their experiences in how they communicate with care takers and children they meet during their role as DSV* • *Ask the volunteer actors to act out their role-plays* • *After both role-plays are complete begin a discussion with the participants.*

Group work: Role-play I – Assessing a client with severe illness for referral

Overview for trainers: This is a role-play to help DSVs understand the best way to examine a client for severe illness. The participants should only go as far point "check for danger signs" on the flow chart. Give these instructions, on paper, to each actor:

Instructions for the Drug Shop Vendor – "Godfrey"

- Your name is Godfrey
- Lydia (mother) has brought her sick baby, Harriet
- You need to listen to the mother's story about what is wrong with Harriet
- You have to assess Harriet's illness, following the DSV tools (job aids and flowcharts).
- You have to explain to Lydia, Harriet's mother, what steps you are taking to check Harriet's illness.
- You decide that Harriet has no severe signs of illness according to the job aids
- Make sure you consult your flowchart and explain things in detail to Lydia so that she can clearly understand what you are doing.
- Finish your role play when you reach 'check for danger signs'

Instructions for the client's mother – "Lydia"

- You are a worried mother called Lydia.
- You have a client called Harriet who is six months old.
- Tell Godfrey the DSV that Harriet is ill, and has malaria.
- If Godfrey the DSV asks, tell them that Harriet has had fever on and off for the last two days and was very hot the previous night and this worried you.
- You have not given Harriet any medicine, you just came straight to the DSV for treatment
- You are very worried about your baby, and you are sure that Harriet must have malaria.

Instructions for Observers

- Note down how Godfrey the DSV communicated with Lydia and Harriet
- Be prepared to discuss this after the role-play.

Group work: Role-play II – Assessing a client with severe illness for referral

Overview for trainers: This is a role-play to help DSVs understand the best way to examine a client for severe illness. The participants should only go as far point "check for danger signs" on the flow chart. Give these instructions, on paper, to each actor:

Instructions for the Drug Shop Vendor – "Betty"

- Your name is Betty.
- Grace (mother) has brought her sick baby, Mary
- You need to listen to the mother's story about what is wrong with Mary
- You have to assess Mary's illness, following the DSV tools (job aids and flowcharts).
- You have to explain to Grace, Mary's mother, what steps you are taking to check Mary's illness.
- You decide that Grace has severe signs of illness because she has been vomiting continuously and has not been feeding
- Make sure you consult your flowchart and explain things in detail to Grace so that she can clearly understand what you are doing.
- Finish your role play when you reach 'check for danger signs'

Instructions for the client's mother – "Grace"

- You are a worried mother called Grace.
- You have a client called Mary who is six months old.
- Tell the DSV that Mary is ill, and has malaria.
- If the DSV asks, tell them that Mary has had fever on and off for the last two days and was very hot the previous night and this worried you.
- Also, Mary has been vomiting since yesterday morning has not been breastfeeding either.
- You have not given Mary any medicine, you just came straight to the DSV for treatment
- You are very worried about your client, and you are sure that Mary must have malaria.

Instructions for Observers

- Note down how Betty the DSV communicated with Grace and Mary
- Be prepared to discuss this after the role-play.

Discussion questions after both role-plays have been acted:

- *Start discussions by asking the DSVs what they thought of the role-play*
- *Ask the volunteers who acted the roles what they thought of their roles*
- *Ask: How did the DSVs communicate with the mothers to make sure they understood what they needed to do?*
- *Ask: Did the DSV use their job aids?*
- *Ask: Did the DSV complete the treatment recording form?*
- *Ask: Did the DSV ask all the questions needed to complete the treatment recording form?*
- *Ask: What was the result of the way the DSVs communicated and used their job aids on the way the mothers responded?*
- *Ask: What things could the DSVs improve on next time they are examining a client?*
- *Ask: Is there any way that the DSVs could be more efficient with their time? For example, when the DSVs are taking the temperature are there other things that they can do (filling in the form, asking about the client's history of fever, asking about mosquito nets?).*

Summarise

****If the client shows any of the symptoms and signs listed below, you should consider the need for urgent treatment and referral to a health facility****

DANGER SIGNS OF SEVERE ILLNESS:
• **Convulsions or fits –** *now, or within the past 2 days* • **Coma / Loss of consciousness** • **Client is confused or very sleepy –** *client cannot be woken easily* • **Extreme weakness –** *client is unable to sit or stand without support* • **Very hot** *– with body temperature of 38.5 ^{O}C or more* • **Very cold** *– with body temperature of 35.0 ^{O}C or less* • **Vomiting everything** *– not able to keep down food, fluid, or medicines* • **Not able to drink or breast feed** • **Severe anaemia –** *very pale palms, fingernails, or eyelids* • **Yellow eyes** • **Severe difficulty in breathing** • **Severe dehydration** – *sunken eyes, sunken fontanelle, skin pinch, coated tongue* • **Any illness in a young baby less than 2 months old**

🗣 **Summarise** In this session we learned about severe signs of illness that we may see in a client. We also saw how we should use the treatment recording form as well as emergency referral forms for adult clients or children with danger signs.

Remember:

- If a client is RDT positive you will give malaria treatment before you refer; we will explain which treatment to give in the next session and how to administer treatments.
- If the client is RDT negative you will not treat, but will refer if the client has any other signs of illness.

Session 5: How to treat clients who are RDT-positive

Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.

Learning objectives

1) Explain the meaning of a positive RDT result in a client with fever
2) Describe how to treat a client with fever and a positive RDT
3) Outline supportive treatments for a client with fever and positive RDT
4) Outline the steps to refer severely ill clients to a health facility
5) Describe pre-referral treatment that may be given to clients with severe malaria before referral to a health centre

Learning Block 5.1: How to treat simple or uncomplicated malaria

During this Learning Block you will;

- Revise the signs of uncomplicated malaria
- Understand how to treat uncomplicated malaria

You will need:

- Sample pack of Coartem

Explain In this session we will revise simple or uncomplicated malaria and explain how to treat simple/uncomplicated malaria

Ask participants

What is uncomplicated malaria (revision)?

Simple (or uncomplicated) malaria *is diagnosed when a client has* ***all of the following****:*

- *Symptoms of malaria; Fever, headache, loss of appetite, joint pains, weakness, muscles aches, nausea or vomiting and/or lethargy (tiredness)*
- *Evidence of parasites in the blood – with a positive RDT.*
- *No signs of severe illness.*

Explain

- If a client has measured fever or reported fever in the previous 3 days an RDT must be taken
- If the RDT result is positive, show the result to the client, or in the case of children to the parent/caregiver. Explain that the client has malaria, and that you will prescribe antimalarial treatment.

Ask participants:

If a client has fever and is positive for RDT and no signs of severe illness – what medicine should we give? *Refer DSVs to their flowchart to get the correct answer. A client with fever and a positive RDT (and with no signs of severe illness) should be treated for uncomplicated malaria with Coartem combination therapy, which we shall discuss in this section. You should also give supportive treatment, which we shall discuss in the next section.*

****Remember: To correctly diagnose a client with uncomplicated malaria, you should see fever AND a positive RDT. If a client has fever, NO signs of severe illness, AND a positive RDT, you should prescribe antimalarial treatment****

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🗁Refer participants to the flowchart. Ask them to check at what stage they are at on the flow chart. Ensure they understand that they understand that if the client has fever AND is RDT positive then they should prescribe ACT treatment

• •

🗣**Explain** Now we shall review the recommended treatment for clients with uncomplicated malaria in Uganda.

- Over the past several years, the malaria parasite has developed resistance to the older commonly used medicines (for example, chloroquine). For these reasons, the Uganda Ministry of Health now recommends combination therapy with Coartem. Combination therapy is the combination of two or more pharmaceutical compounds given together to treat malaria.

- The main reason to give combination therapy to treat malaria is that it is more effective than using just one antimalarial pharmaceutical compound. Think of an army is fighting an enemy – two soldiers are more effective than one.

- Coartem is a combination medicine. This means that two drugs are combined in each tablet. A complete treatment with Coartem requires a total of 6 doses. The dose should be given twice a day, over a period of 3 days.

✋ Show participants the four different types of Coartem for young children, infants, older children and adults. Encourage the participants to discuss their experience with Coartem use in their household. Have they or their children received Coartem before? What type did they receive? How often did they receive the Coartem?

- The number of tablets in each dose and type of packet that should be given will depend on the age of the client. The packs are colour–coded to make it easier to identify the correct pack for the client.

- Children less than 3 years should be given the yellow pack, and children between 3 years and 7 years old should be given the blue pack.

- Children older than 7 years but less than 14 should be given the orange pack

- Any clients older than 14 years should be given the green pack.

- The doses are summarised in Table 1 below.

Table 1: Treatment schedule for artemether-lumefantrine (Coartem)

Age	Day 1	Day 2	Day 3	Colour code
4 months to 3 years old	1 tablet x2 every 12 hours	1 tablet x2 every 12 hours	1 tablet x2 every 12 hours	**Yellow**
3 years to 7 years old	2 tablets x2 every 12 hours	2 tablets x2 every 12 hours	2 tablets x2 every 12 hours	**Blue**
8 years to14 years	3 tablets x2 every 12 hours	3 tablets x2 every 12 hours	3 tablets x2 every 12 hours	**Orange**
Older than 14 years	4 tablets x2 every 12 hours	4 tablets x2 every 12 hours	4 tablets x2 every 12 hours	**Green**

Ask participants

Why do clients of different ages need to have different doses?

Explain

- It is important that young babies (or children that are very small for their age) receive exactly the right amount of medicine for their size and thus need to be treated at the health centre. Fever in a baby less than 4 months old should therefore always be referred to a health centre.

- Coartem is safe and effective for children older than 4 months, and for children weighing more than 5 kg.

- Treatment for uncomplicated malaria (Coartem) is taken by mouth.

- Remember that Coartem will work best if taken with food or fluids. If possible the client should take each dose of Coartem with milk (or breast milk for small children), or fatty or oily food, for example, meat or bean sauce made with cooking fat or oil or groundnut sauce. This improves absorption of the medicine from the gut. But it is also important to remember that even if the client only takes the medicine with water, it will still work well. Even if the client or mother has no food or milk available to give, the client should still take the tablets with water.

- The first dose of any antimalarial treatment should be observed by the DSV. If the client vomits in less than 30 minutes, wait 10 minutes and then give a second dose. If the second dose is vomited, change to use a rectal artesunate suppository instead and refer the client to the nearest health centre.

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🗁Refer participants to treatment chart (with parasites). Explain that DSVs can tell the client (or the mother of the child) about how the treatment affects the number of parasites in the client's blood. The number of parasites reduces with the number of doses. Someone may feel well after a few doses, but there may still be parasites in their blood and they must complete the dose.

✋Encourage participants to discuss the treatment charts: get into pairs and spend 10 minutes discussing how you will explain the different doses to the clients or to the mothers or caregivers of children.

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🗣 **Explain** that the DSV must explain to the client/caregiver what they are doing along each step of the way when they are assessing for fever and administering medicines. They must explain the following;

- Why you are giving the client medicines (because they have fever and so may have malaria)

- The name of the medicine for malaria (Coartem) that you are giving.

- Explain the correct way to dose the medicines: number of tabs per dose, number of doses per day, number of days to complete the treatment. Use the treatment job aid, and the medicine packet to reinforce the message.

- The correct way to take the medicines: for example, tell the client or caregiver to take each dose with milk (breastmilk for small children) or fatty or oily food (for example, meat or bean sauce made with cooking fat or oil, groundnut sauce) to improve absorption of Coartem. Emphasise that even if the client or caregiver does not have these kinds of food available that Coartem will still work if taken with water.

- Tell the client about possible side effects of the treatment. However, mention that everyone is different and may react to a medicine differently.

- Provide advice on storing medication: medicines should be stored in a clean and dry place, out of the reach of children.

- For any client with fever, ensure the client or caregiver understands how to use supportive treatment:

Ask participants

If the client is a child - what kind of supportive treatment can we advise a mother to give to her child?

Answer: Adequate fluid intake: water, juice, and weak tea for children who can drink, and breast milk for babies. Tepid sponging and fanning to help reduce fever

What is the best way to say this to the client/caregiver so that he or she will listen and understand what you are saying? *Prompt participants to discuss the way their attitude will affect how the client/caregiver will listen. For example, If they tell the mother she must do something, she may feel defensive, particularly if she cannot fulfil the instructions such as giving juice or milk. It is important to be working together with the client/caregiver on the same level in order to help her find ways to make the treatment work best for the client.*

Explain

- In order to be totally cured, the client must receive the full course of treatment.
- If the client vomits the medicine within 30 minutes of taking the dose, he or she should take another dose and return to the DSV for a replacement.
- Symptoms may not disappear immediately after taking the first dose. Improvement may take up to two days.
- If symptoms do not improve after two days, the client should come back to the DSV or go to a health facility immediately.

- If the symptoms worsen, or any of the following symptoms are seen in the client, the client/caregiver must seek urgent medical attention.
  - Fever does not go away after two days of treatment
  - Client develops convulsions
  - Client is unable to eat, drink or breast feed
  - Client becomes unconscious
  - Client develops difficulty in breathing
  - Vomiting begins or continues so that the client cannot keep down food, fluids and oral medications
  - Client develops new symptoms
  - Client becomes weaker or generally more ill
  - Client develops a rash

Explain that Coartem should not be given under the following circumstances;

- Do <u>not</u> give an ACT medication to a client who has had a bad reaction to the medicine previously.

- Do <u>not</u> give ACT to:
  - Babies less than 4 months old
  - Children of any age who weigh less than 5 kg (lookout for a child who looks very small or much thinner than normal for their age)

🗣 **Explain** that sometimes Clients can have more than one illness at the same time. It is important to examine the client for any other signs of illness as well as being treated for malaria. We will cover how the DSV does this in Session 6.

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🗁**Refer participants to the flowchart. Indicate the area under treatment which says "Check for other signs for Referral". Emphasise that it is important the DSV check for other signs.**

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Group work: Role-play III – Treating a client or client with malaria

Overview for trainers: This is a role-play to help DSVs understand the best way to treat a client with malaria. Explain to the DSV group that we return once more to the story of "Godfrey", "Lydia" and her client "Harriet". Godfrey realises that "Harriet"s illness is not severe. He must treat her with Coartem because she has a history of fever which indicates malaria. Give these instructions, on paper, to each actor:

Instructions for the Community Medicine Distributor – "Godfrey"

- You have already examined Harriet and she has no signs of severe illness.
- You need to decide how to treat Harriet.
- As Harriet is 6 months old she can receive the yellow pack of Coartem.
- Explain to Lydia about the drug Coartem. Explain that it is an effective drug but only when the full dose is taken. Take time to go through all the instructions about taking the drug with Lydia.
- Lydia thinks she only has to give two doses of the Coartem to Harriet and that she can keep the rest
- Administer the first dose of Coartem to Harriet while Lydia is with you.

Instructions for the client's mother – "Lydia"

- You have seen the DSV examine your client - Harriet. The DSV has asked you questions about Harriet's illness.
- The DSV wants to treat Harriet with Coartem. You have heard of this drug, but have never used it before.
- You neighbours have told you that it is a good drug, and that you only need to take two doses and it works. They said you can save the rest of the drug for another time.
- You listen as Godfrey tells you about the drug.

Instructions for Observers

- Note down how Godfrey the DSV communicated with Lydia and Harriet
- Be prepared to discuss this after the role-play.
- Follow the role-play using your job aids, flowcharts and treatment recording form.
- Make sure you note what you can complete on the treatment recording form from the information given during the role-play

Potential de-briefing questions:

- How did Godfrey the DSV communicate with Lydia to make sure she understood what she needed to do?
- How did Godfrey the DSV use his job aids?
- What was the result of the way Godfrey communicated and used the job aids on the way Lydia responded?
- What things could Godfrey improve on next time he is examining a client?
- What additional questions should the DSV have asked in order for the treatment recording form to be completed properly?

Summarise: Correct practices in treatment of uncomplicated malaria

- Start antimalarial therapy as **soon** as possible after diagnosing the client.
- Give **Coartem**. Ensure the client has the **correct Coartem dose** for his or her age.
- Ensure the client/caregiver purchases a **complete Coartem dose** and understands the importance of completing the full treatment.
- Give advice on **supportive treatment** to relieve symptoms and speed recovery.
- Watch for signs of **severe malaria**, **give pre-referral treatment** and **REFER** any client with severe disease to the nearest health centre immediately.
- Look for **signs of another illness (different from malaria**) and advise these clients be taken to the nearest health centre for treatment.

Learning Block 5.2: How to treat and refer severe malaria

During this Learning Block you will;

- Learn how to administer pre-referral treatment for clients or children with severe malaria
- Understand how to complete emergency referral forms to ensure clients or children are treated at health facilities as quickly as possible

You will need:

- Job aids for severe illness
- DSV emergency referral forms
- Sample rectal artesunate

Explain In this session we will firstly revise the signs of severe malaria.

Ask participants

What is severe malaria? *Encourage participants to remember previous sessions and refer to their flow charts. A client who has a positive RDT result, and any of the danger signs may have severe malaria, and needs to be treated for malaria very quickly.*

What are the danger signs for severe malaria? *Answers: The danger signs are illness in any baby less than 2 months; client who has had convulsions or fits in the last 2 days; client is confused or sleepy; extreme weakness; very hot or very cold; vomiting everything, not able to drink or breastfeed; severe anaemia; yellow eyes; difficulty in breathing; or severe dehydration*

Explain

A client with severe malaria can quickly deteriorate and should be **referred to the nearest health facility immediately**, so that they can be examined by a trained health professional and monitored closely until they recover. Emphasize that for severe malaria – ACT QUICKLY to TREAT and REFER

- In order to ensure the client is referred correctly the DSV must complete an emergency referral form

Refer participants to the flowchart. Ask them to check at what stage they are at on the flow chart. Refer to the DSV emergency referral form and job aid. Ask the participants to read through the DSV emergency referral form.

Explain that there are a number of steps that must be followed in order to ensure that a client with danger signs is treated and referred correctly. They are as follows;

1) Inform the client and/or caregiver that the client shows signs of severe illness, and requires urgent treatment at a health facility.

2) Write a referral note. You should use the **DSV Emergency Referral Form** (red referral form).

3) Check the result of the **RDT quick malaria test,** and write result on the client's referral note.

4) If RDT result is positive, you should **give pre-referral treatment** for malaria (we will discuss this in a few minutes) and **refer to a health facility for specialist care**.

5) If RDT result is negative, do not give treatment for malaria. Refer this client for examination and treatment at a health facility.

6) Finish filling in referral form and check that all the following information is recorded.

Refer participants to the DSV emergency referral form. Request individuals to read the information that should be recorded on the referral form.

On the referral form, you should have recorded:

- Your reasons for making an emergency referral. Indicate this by ticking each of the danger signs you have seen.
- Client's name, next of kin and village of residence
- Client registration number from your treatment book
- Date and time of referral, and who is making the referral (your name)
- Client's age
- Body temperature measured by thermometer under the arm
- Result of the RDT quick malaria test
- Name of any pre-referral treatment given by you and the time it was given
- Names of any other treatments/medicines given by the parents and the time they are given

Explain

- There is a special treatment called Rectal Artesunate that can be used to give dangerously ill children first aid before they get proper treatment at the health facility.
- Rectal artesunate is another form of malaria drug that is administered via the rectum. The rectal artesunate acts quickly and can give the child time to reach the health facility to receive proper treatment.
- DSVs will be given rectal artesunate to use in children with severe malaria.
- The amount of rectal artesunate to be used depends on the child's age

Refer participants to the back of the Job aid for severe malaria which shows the rectal artesunate treatment chart. Request individuals to read the information in the table

Explain

- It is important to ask the child's age before deciding how many rectal artesunate suppositories the child should receive.

Table 2: Dosage for pre-referral treatment of children with rectal artesunate (50 mg)

Age (months)	Age (years)	***Number of rectal artesunate suppositories***
0-12 months	0-1 year	1 suppository
13-42 months	Above 1 year – 3.5 years	2 suppositories
43-60 months	Above 3.5 years – 5 years	4 suppositories

Explain the steps in administering Rectal Artesunate are as follows:

1) Wash your hands and put on a disposable glove
2) Remove wrapper from suppository
3) Place warm water on the suppository to make the insertion easier (Do not use Vaseline)
4) Have the infant or toddler lie sideways with their knees bent.
5) Gently push the suppository into the client's rectum (**blunt end first**) until it goes past the rectal muscle; make sure it rests against the rectal wall:
    - If the client is under three years old use your little finger to push the suppository in. When inserting suppositories into infants, the little finger should be inserted one-half inch (1.25 cm) beyond the rectal opening.
    - If the client is over three years of age use your index or pointer finger to push the suppository in. When inserting suppositories, the suppository should be pushed about 1 inch (2.5 cm) beyond the rectal opening, or up to the first knuckle your index finger.
6) Hold the child's buttocks closed for 10 minutes after giving the suppository.
7) Hold the child's buttocks closed for 15 minutes if more than one suppository is given
8) Remove gloves and wash your hands and the child's skin well with soap and water
9) In the event that an Artesunate suppository is expelled from the rectum within 30 minutes of insertion, a second suppository should be inserted.

Ask participants

Is there any supportive treatment we can recommend to the client's mother as well as providing rectal artesunate? *Encourage participants to recall supportive treatment they would recommend for simple or uncomplicated malaria.*

Explain

You can also provide supportive treatment to reduce the symptoms whilst the child is on their way to the health centre:

1) Reduce the fever – undress the child, perform tepid sponging and fan the child
2) Prevent low blood sugar: You can give them a sugary solution to drink or sip if the child is able to drink (or ask the mother to breastfeed if the child is still breastfeeding). Remember to use clean, safe, water and utensils to prepare this solution.
3) If the child shows signs of being dehydrated, encourage them to drink or sip fluids if the child is able (or ask the mother to breastfeed if the client is a baby).

The actions you should take if a child with an RDT positive test result has danger signs are highlighted in red on the plastic guidance sheet labelled "Treatment Guide for DSVs using Quick Malaria Test".

*****For a child with severe malaria, every minute counts*****
*****Remember: Begin pre-referral treatment as soon as possible. Ensure referral to a Health Centre as soon as possible. *****

Session 6: How to deal with clients who are RDT-negative

Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.

Learning Objectives

- Discuss the management of a client who is RDT negative with no signs of severe illness
- Tell clients or mothers/caregivers what a negative RDT means
- Explain to the clients or mother/caregivers how to monitor the patient over the next 24 hours and what to do after that

Learning Block 6.1: How to check and refer a client with other signs of illness

During this Learning Block you will;

- Understand and describe other signs of illness for which a client needs to be referred to health facilities

Clinic officer from health facility: Explain that it is necessary to look for other signs of illness if a client is RDT-negative. However malaria can occur at the same time as other illnesses (i.e. clients can have two different illnesses at the same time). It is also important to look for other signs of illness if a client who is RDT-positive as he or she may have another illness as well as malaria.

Ask participants

What are the other common illnesses that people can get in Uganda? *Answers: DSVs will probably mention cough, colds or flu, stomach illness, diarrhoea, typhoid, TB, HIV, ear and eye infections. Note all the responses down on a flipchart.*

Refer participants to the flow chart.

Ask participants

At what stage on the flow chart are we? When do we need to look for other signs of illness? *Participants should be able to indicate that it is necessary to check for other signs of illness whether a client is RDT-positive or RDT-negative.*

Refer participants to the job aid "Other signs for referral".

Ask participants

To read out the other signs of illness for referral on their job aids.

How can we find out whether a client has any of these other signs? *Remind participants about the initial examination of a client for danger signs. Participants should remember that they have to examine the client for danger signs and that during that time they can ask either the client or the client's mother about any other signs that may require referral.*

Explain

- Any of these other signs suggest that the client could have another illness
- That DSVs should remember these signs when they are examining the client, and asking the client or client's mother/caregiver about the client's illness.
- Explain that DSVs can ask the following questions while they are assessing the client in order to determine whether they may have another illness:
    - How long has the client been ill with fever? Does the client have fever all the time? Are there certain times of the day when the client has fever?
    - Has the client been vomiting?
    - Has the client had diarrhoea? Is there any blood in the client's stool?
    - Is there any blood when the client urinates?
    - Does the client feel pain when urinating? If the client is a child, does he or she cry more than usual when they urinate?
    - Has the client been scalded or burned?

Explain that clients with either diarrhoea OR vomiting do not need to be referred. However, clients with both vomiting AND diarrhoea do need to be referred because of the increased risk of dehydration with these two symptoms.

Explain that in addition to asking these questions the DSV can also examine for the following;

- Check the client's body for skin abscesses, or any painful swellings or lumps in the skin. An abscess is a tender, hot swelling somewhere on the body.
- Check to see whether the client has a runny ear, or if it is a child, whether they have been pulling at their ear indicating that it is hurting them.
- Check the client's eyes to see whether they are red or sticky

🗣**Summarise** the other signs for referral that DSVs need to remember when they are examining a client. Emphasise that the DSVs need to check clients who are both RDT-positive and RDT-negative.

OTHER SIGNS FOR REFERRAL
• Fever that has lasted more than 7 days • Measured fever of >=37C when a client comes to the DSV with a negative test • Vomiting **and** diarrhoea • Blood in faeces or urine • Pain when passing urine, or frequent urination • Wound or burn • Skin abscess • Painful swellings or lump in the skin • Ear infection – *runny ear or client pulling at ear* • Sticky or red eyes • Fever in babies less than 4 months old • Woman is 3 months or less pregnant (in her first trimester of pregnancy)

Learning Block 6.2: How to explain an RDT-negative result

During this Learning Block you will;

- Understand how to properly refer a client who is ill with something other than malaria
- Understand and demonstrate how to complete a referral form for clients with signs of other illness

You will need:

Job aid for 'other illnesses' (blue)
DSV standard referral form (blue)

Explain that we will now go through the different steps in treating a client who is **RDT-negative and has NO signs of severe illness, but does have other signs of illness:**

- Based on the result of the test, tell the client or caregiver what the cause of the illness is - malaria or another illness. This helps the client or caregiver to understand the illness, and increases his or her confidence in the treatment recommendations.

- **<u>If the RDT result is negative, show the result to the client/caregiver. Explain that the client does not have malaria.</u>**

Ask participants

How can we best explain to the caregiver about a negative RDT result?

Answer: Explain that not all fevers are caused by malaria. Explain that Coartem will only cure malaria, but will not cure fevers which are caused by another illness.

Explain

- Emphasise that the RDT can detect parasites, even if there are only very few in the blood. Malaria cannot hide from the RDT test. Therefore, if the RDT test is negative we are confident that the client ***does not*** have malaria.

Refer participants to the flow chart and job aids

Children who are RDT-negative but have signs of another illness

Ask participants

What do you think should happen if a client is RDT-negative but has signs of another illness? *Answer: According to the flowchart the client should be referred to the health facility. It is important to get the correct medicine for the illness, and that staff at the nearest health centre will be able to diagnose and give the right treatment.*

Explain that clients who are RDT-negative but have signs of other illnesses need to be referred. Here are the steps which need to be taken to refer a client with an illness other than malaria.

1) Inform the client and/or caregiver that the client does not have malaria but shows signs of another illness that can only be diagnosed and treated at a health facility.

    - Explain that there are also other illnesses that can cause fever. Only malaria can be treated with antimalarials. The other illnesses require treatments that are only available at the health centre.
    - You have been trained to look out for signs of other common illnesses as well as malaria so that you can help direct them to the health facility
    - Reassure the client (or parents of the child) that the test shows that the client does not have malaria. But the client has some other signs that suggest they may have an illness different from malaria. Because of these signs, you advise them to go to the health centre for further examination and treatment.

• •

Refer participants to the DSV standard referral form. Request individuals to read out the information that should be recorded on the form.

• •

2) Write a referral note. You should use the **DSV Standard Referral Form** (Blue form).

    Check that all the following information is recorded on the referral form.

    - Your reasons for making the referral. Indicate this by ticking each of the signs you have seen.
    - Client's name, next of kin and village of residence
    - Client registration number from your treatment book
    - Date and time of referral, and who is making the referral (your name)
    - Client's age
    - Body temperature measured by thermometer under the arm
    - Result of the RDT quick malaria test
    - Ask the client/caregiver whether the client has received any treatments for this illness before this time today. Write the names of any other treatments/medicines taken by the client or given by the parents or anyone else. Record the date and the time that each treatment was given

Children who are RDT-negative and have NO signs of another illness

Explain

- Not all cases will need to be referred today
- That there are times when the RDT will be negative and a client has no other signs of illness e.g. stomach ache or skin rash. In this case you need to show the client or parent the RDT result.
- Reassure the client (or client's parent/caregiver) that the test shows that the client does not have malaria. Explain that there are many causes of fever, and you have been trained to look out for signs of other common illnesses as well as malaria.
- Reassure the client (or client's parent/caregiver) that he or she does not have any other signs of illness that would cause you to advise them to go to the health centre.
- Tell the client (or client's parent/caregiver) that the illness is not dangerous and he or she should recover quickly at home.
- But advise them to monitor the client's condition over the next 24 hours and to come back again if the he or she gets worse, or does not improve. You will check the client once again for 1) any danger signs and 2) any other signs for referral, and refer the client if necessary.

Ask participants

Is there anything else we could advise clients to do? If the client is a child, are there supportive treatments that the parents could use? *Answers: Yes. Advise them that there are some things that they can do to help relieve the fever – these include tepid sponging and fanning. They should also encourage the client to continue to drink or breastfeed as normal.*

Ask participants to separate into groups of 3-4 people. Get the groups to discuss the following question "Why is it important that you do not give antimalarial treatment for clients with negative RDTs?" *Prompt participants to discuss the answers below:*

- *It is more likely that diagnosis and treatment will focus on the true cause of fever, and the client will receive the correct treatment and make a full recovery.*
- *The true cause of fever will be treated in a timely manner, and the client will recover faster.*
- *This will reduce the risk of antimalarial stock-outs at both drug shop and health facilities.*
- *This will help to limit the development and spread of medicine resistance, so these medicines will continue to work against malaria for a long time into the future.*
- *This will reduce the client's risk of side effects (medicine reactions) due to unnecessary antimalarial treatments. A common example of a medicine reaction is ringing in the ears after taking quinine.*

Undertake role-play: Dealing with RDT-negative clients

Overview for trainers: This role-play is to help participants understand how to receive, assess, and treat parents or caregivers and their ill children (who have a negative RDT test result). The role-play should continue to the 'referral for other illnesses' on the flowchart.

Instructions for the Drug Shop Vendor – "Flavia"

- Connie, arrives with Kaggwa, her two-year old son
- Ask about the problem and follow the flowchart to decide what to do
- You have examined Kaggwa for fever, his temperature is 38.0.
- You have done an RDT, but it is negative. Explain this to Connie.
- You notice that Kaggwa is pulling on his ear and you examine the ear.
- You see that there is yellow liquid coming from the ear.
- Explain to Connie, Kaggwa's mother, what you have found.
- Use your job aids and flowchart to explain to Connie what she needs to do next.

Instructions for "Connie" – a client's mother

- You are a nervous mother, visiting a drug shop run by Flavia, the DSV
- Your son, Kaggwa, has had fever on and off for the last few days.
- It is mango season, and you want to check if he has malaria.
- You gave kaggwa some malaria medicines (called fansidar) that you had in the house that you bought in the market last year, but he did not get better.
- You are sure that Kaggwa has malaria and demand that Flavia, the drug shop vendor, conducts a quick malaria test.
- Flavia has examined Kaggwa for fever, and done a rapid diagnostic test.
- You listen as Flavia explains the results to you and the next steps in what you should do.
- You are doubtful of the results, you do not understand how the test works, you have never seen one before, and you want some treatment for Kaggwa for malaria.

Instructions for Observers

- Note down how Flavia the DSV communicated with Connie and her son Kaggwa
- Be prepared to discuss this after the role-play.

Potential de-briefing questions:

- How did Flavia the DSV communicate with Connie to make sure she understood what she was doing and what the test results meant?
- What was the result of the way Flavia communicated with Connie on the way Connie responded to the test results and advice? What could Flavia improve on next time she needs to tell a mother about a negative result?

Session 7: Keeping tally, storage and monitoring of RDTs and antimalarials

🗣 **Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.**

Learning objectives

By the end of this session, you should be able to:

1) Describe the proper storage conditions for RDTs and antimalarial medicines at your place of work
2) Explain how to monitor RDT and medicine expiry dates with the "FEFO" principle
3) Explain how to ensure a continuous supply of RDTs and medicines
4) Explain how to dispose of used and expired RDTs and medicines

Learning Block 7.1: Storage and monitoring of RDTs and antimalarials

During this Learning Block you will;

- Understand how to properly store ACTs
- Know how to monitor stocks of ACTs

🗁 **You will need:**

DSV Stock card – Coartem YELLOW
DSV Stock card – Coartem BLUE
DSV Stock card – Coartem ORANGE
DSV Stock card – Coartem GREEN
DSV Stock card – Rectal Artesunate suppositories
DSV Stock card – Blood slides
DSV Tally sheet

🗣 **Explain**

- In this short session, we will discuss the proper way to store RDTs to keep them working and give a true and reliable result. We shall also discuss the proper way to store and monitor antimalarial medicines to ensure they remain fully effective.

- Now that DSVs will be responsible for storing both RDTs and ACTs it is important to ensure that both are stored correctly.

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🗁**Distribute the DSV stock cards and tally sheet for monitoring stocks of ACT, Rectal Artesunate and Blood slides. Ask individual participants to read out the various cards and tally sheet out loud to the group. Discuss how the stock cards and tally sheet is to be used.**

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Ask participants

Under what situations do you think an RDT might not work?

Answers: You may need to prompt participants to also consider the situation in which the tests they have might give invalid results. Ask participants to think back to what they have learnt in Session 2. Ask participants to suggest what they might be able to do to try and avoid this situation.

Explain

- RDT manufacturers recommend that the tests be stored between 4°C and 40°C. Uganda is a warm country, so we do not need to worry about RDTs reaching 4°C and freezing. It is more likely that RDTs could become too hot during transport or storage. Do not leave RDTs outdoors in direct sunlight. When transporting RDTs try to minimise the time that the boxes are exposed to direct sunlight. If the box is outside, then placing branches on top of the box might help, if there are no other forms of shade.

- RDTs must be stored in a **cool, dry place** in order to keep their ability to accurately diagnose malaria. Like medicines, RDT quality can be affected by heat and dampness. Therefore, you need to think carefully about where and how you store them in your drug shop.

- Find a cool and shaded place to store them in the drug shop. Do not place RDTs near windows, where the sun can shine on them. Be sure that they are always kept as cool as possible in the storage room and in client care areas. In addition it is important to make sure that children cannot access the lancets that are used with the RDTs.

- Remember also that an RDT test should always be conducted in a safe and hygienic manner, and the drug shop is the best place to do this.

Explain

- We will now look at the supply of RDTs and antimalarials to DSVs. DSVs will be supplied RDTs and ACTs through the local Ministry of Health project distribution centre. In order to ensure no stock outs of medicines or tests, it is necessary for the DSVs to complete stock and tally sheets so that Ministry of Health supervision team can clearly see the number of clients the DSVs have seen in a month, the number of positives and the number of people who received treatment.

- Remind the group that the secret of keeping a constant supply of RDTs and medicines relies in timely communication and good teamwork. The DSVs themselves have a critical role in this supply chain by thinking ahead and acting in good time before supplies run low.

Ask participants

How do you currently monitor the stock level of different drugs in your shop?

Participants might mention their registers and keeping count of the numbers of doses they have in their shops

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🗁Refer participants to the DSV tally sheet. Ensure that they understand that they need to use this sheet to monitor their supplies of ACTs and RDTs. Read through the tally sheet and give participants examples of how they should complete them

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✋ **Practice: Give the participants the following example. Ask them to fill in this example on their tally sheets.** *Call out the following:* You collected 15 doses of Yellow Coartem from the project distribution centre on 3rd January 2010
On the 12th January, you treated 2 children with the yellow Coartem.
On the 14th January, you treated 1 child with yellow Coartem
On the 16th January you treated 2 children with yellow Coartem
You return to the health facility on the 10th February and receive another 15 doses of Yellow Coartem

How many of each medication do you have now?

🗣**Explain**

- You should regularly check that you have enough supplies of RDTs and ACTs, at least once a month. Your supply may run low either because you have used many tests or because the tests have reached their expiry date. You will need to take active steps to avoid running low.

- During the monthly inventory at the drug shop, **the expiry date on each RDT carton should be checked**.

- Use the "**FEFO**" principle: First Expired, First Out. Put the carton with the earliest expiry date at the front of where you are storing them so that they are used first.

✋ **Give the participants the following example.** You have a box of RDTs due to expire in January 2010. Only a few RDTs are remaining in the box, so you go to the project distribution centre to receive a new box of RDTs. The expiry date on the new box of RDTs is October 2010. Which box would you use first when treating your clients?

🗣**Explain**

- **If the expiry date on an RDT carton is past, do not use RDTs from the carton.** Return the carton to the supervisor or the distribution centre.

- As an additional precaution, **always the check the expiry date on each individual wrapper before using the test.** If the expiry date on the test has passed, replace the test in its original carton and check the expiry date on the carton. If the expiry date on the whole RDT carton is past, do not use any other RDTs from the same carton.

- Keep a regular check on the expiry dates of RDTs in your possession, and the number of usable tests you still have in your possession. Do not wait until you are about to run out, but try to keep a constant stock. Inform the supervisor, if all the tests in your possession will expire within the next month.

- Remember, always inform the supervisor or study coordinator when your stocks are beginning to run low, so that there is time to replenish your stock before you run out!

- Ensure you retain all used RDTs safely so that they can be sent to the project office with all sample slides.

Ask participants

How can we monitor antimalarial stocks to ensure that we have a continuous supply?
Prompt participants to summarise the same protocols for ACTs as for RDTs.

Explain

It is important to ensure that all lancets, pipettes, gloves and sharps boxes are all disposed of correctly.

- Lancets, pipettes and gloves should be placed in the sharps box.

- Wrappings, boxes and silica gel sachets (and gloves if they do not fit in the sharps box) which come with the RDTs can be burnt or disposed of in put latrines.

- RDTs need to be kept safely and sent to the project office with slides so that results can be re-checked.

- Sharps boxes need to be kept in a safe place, away from children, and brought to the project office for disposal at the same time you go to get your stocks replenished.

Explain

- Keep a regular check on the expiry dates of ACTs and RDTs in your possession. Do not wait until you are about to run out, but try to keep a constant stock. Inform the supervisor, if all the tests in your possession will expire within the next month.

- **Remember, always inform the supervisor or study coordinator when your stocks are beginning to run low, so that there is time to replenish your stock before you run out!**

Explain after the training course the study coordinators will sit with you to discuss how slides and RDTs should be retained and collected.

Summarise In this session, we learned that RDTs and medicines should always be stored in a cool, dry place. Minimise the amount of time they may spend in direct sunlight during transport. The expiry date on each carton should be checked during monthly inventory, using the “FEFO” principle. Always the check the expiry date on each individual wrapper before use.

Session 8: Recap on the new role of DSVs

Introduce the new session and explain the learning objectives and what the participants will learn during this time. Show participants what part of the timetable they are on.

Learning objectives

By the end of this session, you should be able to:

- Summarise your role as a trained DSV in the community
- Understand the link between you the DSV, the health facility and the district supervisor

Explain to participants that we have now reached the closing session of the training. We will now recap your new role as trained DSVs in your communities.

Ask participants

What do you think your new roles as trained DSVs will involve? *Reflect on the flipchart from the first sessions. Answers: Distribute antimalarials for clients according to national protocols, Keep registers of clients treated and refer very sick clients.*

Discuss the new activities that the DSVs have to carry out as part of this study. Ask them to talk about how their role may have changed with the new activities, such as diagnosis, that they now need to do. Ask DSVs about different situations they may now find themselves in as a result of these new activities.
Prompt DSVs to talk about the additional activities such as RDTs and Rectal artesunate as different referral methods (e.g. blue and red forms). Ensure that DSVs discuss different situations with which they may be faced, and how they will deal with those situations.

Explain the role of the DSV is complementary to the role of the health facility.

- Health facility teams and DSVs are expected to work in unison to reduce malaria in their areas. This requires strong teamwork and good communication between both sides.
- Village leaders and health committees can help this relationship by making any new staff at health facilities aware of the study and ongoing work of the DSVs
- In addition, the DSVs will receive support from the district supervisors at the beginning of their work. District supervisors will visit DSVs in order to discuss any questions DSVs have about their roles, and help with any questions which the community have asked DSV, but which DSVs have not been able to answer.

Summarise that the role of the DSVs is crucial in helping to treat clients with malaria. Emphasize that the DSVs role can be supported by health facility teams as well as village leaders, and village health committees and the parish and study coordinators.

Thank participants for their attention throughout the course and congratulate them for completing. Explain that the certification will take place after a short post-test to allow us to measure the success of the training course – distribute the post-test to participants and allow 60 minutes for completion.

APPENDIX ONE: Instructions and guidance for role-plays

Through use of humour and drama, strong role-playing engages the hearts and minds of the audience and motivates them towards real behavioural change. In a role-play people can explore problems that they might feel uncomfortable about discussing in real life. Good believable role-play can help to achieve several objectives of a health education programme. It can:

- *Provide accurate health information* - and help to dispel any myths or misinformation around different health topics
- *Create motivation* - motivate the audience to change their attitudes on certain issues – for example to see the value of going for an RDT test
- *Build skills*- through demonstration of various skills such as negotiation, refusal and decision-making and also practical expertise, for example how correctly explain treatment, how to use approach a mother who is reluctant to give information about their client.

There are three main steps to the role-play;

Before the role play

- **Organize the participants**

Role plays usually are limited to two or three actors. Those who are not actors are observers. Observers should take notes during the role play and be prepared to report their impressions. Usually two or more people are asked to take on the role of a certain character, and then act out a scene focusing on a predetermined situation. In some cases, only some of the details might be given about how a given situation unfolds and the players are asked to create an ending.

For the role-plays below it is important to explain clearly to each participant the role they will play (out of earshot of other participants). Ensure they understand their role and clarify with them how they will act it out in the drama. If possible, give them the background to their character.

- **Create a positive climate**

Make it clear that there is to be no judging or criticizing of role playing, and that everyone's contribution is valuable.

- **Provide an open-ended scenario**

If there is a particular theme or topic you wish the participants to act out. Provide a short description you wish to be acted out, but allow the participants to make it up as they go and create their own conclusions.

- **Establish procedures that set role play apart from "real life"…**

Participants may be more comfortable if some formalities are observed. Role play performers can wear special name tags or badges.

- Give the field worker and the respondent their instructions on separate sheets – they should not know each other's instructions. The observer should have copies of all instructions.
- Make sure that no one is bullied or forced to act in a role-play by other participants. Some people may not feel comfortable acting

- Make sure that a group does not spend all the exercise time devising a script. They need to practice their role-play as well.
- Create sufficient space for the role-play performance, so that all other participants can watch it easily when it is presented

During the role play

- Encourage the players to speak loudly so that the whole audience can hear their dialogue

- Expect a considerable amount of excitement, nervous laughter, and noise during role plays. This is fine as long as participants are engaging with the roles and topic.

- **Aim for an appropriate length.** Role plays can last from 2-3 minutes to 20 minutes, depending on the skills being practiced and the level of participants' skills and role play experience. It is best to start with shorter role plays. As participants become more skilful and relaxed, they may extend their role plays.

- **If role players get "stuck," take a break.** Give positive feedback from the progress so far and then ask the participant to discuss the action and try to figure out what's going wrong. Sometimes even a slight change can help.

- **Observers should remain detached.** Observers do not act in the role play or talk to the actors. They should refrain from commenting or criticizing. They should simply watch and take notes on their observations and impressions.

After the role play

- **Ask for feedback from the actors first.** When debriefing after role-play, it is important to give the people playing the roles a chance to comment first on their own "performance" – what they did well, and where they could have done it differently. This will strengthen their ability to reflect on their own knowledge, skills and attitudes to the work.

- **Praise all role-play efforts**. Encourage participants, and lead by example, to always say what you liked about a role play first. At most, suggest only one thing a student might try differently in a re-enactment.

- **Reflection on the role play by observers.** Observers are likely to notice things that the actors are not aware of, such as body language, tone of voice, and pacing. Ask the audience to discuss what they saw in the role-play. In particular get the audience to discuss what the different characters from the play could have done differently, or what they did correctly.

Examples of questions that can be used after role-plays:

- How did you feel about the role play and each of the various roles?

- Was the role play realistic? How was it similar to or different from real life? Was the problem solved? If so, how? If not, why not?
- What was particularly effective?
- What, if anything, could have been done differently? What other outcomes were possible?
- What did you learn from the experience?

- **Reflection on the role play by trainers.** The trainers should comment last, from their own observations in the groups, as well as in response to what has been said by the different actors.

- **Follow-up role plays can be done.**
  Observers and actors can switch jobs; actors can switch roles or try to play the same role in a different way.

APPENDIX TWO: Additional scenarios for supervision

Below are additional scenarios that you can use when supervising and providing further training to DSVs when you visit them in the community. A brief scenario is given, after that you should encourage the DSV to ***use the treatment-decision flowchart*** *to determine what should be done. Choose which scenario you should use with each DSV and then talk through each stage of the case, asking the DSV 'what do you do next'. Give the DSV time to answer themselves first, then when the DSV is unable to answer, you can* ***prompt*** *them with the information given beneath each stage in italics.*

Scenario: 1. – Tukesiga and Mbabazi

🗣**Tukesiga brings her son Mbabazi to see you as he has been ill for three days. Mbabazi is two years old. Tukesiga wants to see whether Mbabazi has malaria. You check Mbabazi's temperature – it measures 37.5^{0}C. What do you do next?**

Prompts:

a) *You need to tell Tukesiga about Mbabazi's temperature.*
b) *Inform Tukesiga that you need to do an RDT test to check whether Mbabazi has malaria*
c) *Perform the RDT test for Mbabazi.*
d) *While you are waiting for the results ask Tukesiga about any danger signs which Mbabazi might have had.*
e) *What danger signs will you ask Tukesiga about?*

🗣**Tukesiga tells you that Mbabazi has had no signs of illness other than fever. When you do the test, you see this result for Mbabazi [note: show the DSV a picture of a positive RDT in the RDT sample sheet]. What is the result? What will you do next?**

Prompts:

f) *Mbabazi is positive for malaria. You need to explain the test result to Tukesiga. Show her the result and tell her what that means.*
g) *You need to give Mbabazi treatment for malaria*

🗣**Mbabazi is two years of age. What treatment should you give him?**

Prompts:

h) *Mbabazi should be given yellow Coartem as he is under three years of age.*
i) *He needs to take the first dose in front of you, the DSV, so you can be sure he has started the treatment*

🗣**What do you need to explain to Tukesiga to ensure that she gives him the correct doses of Coartem at the right times?**

Prompts:

j) *Mbababzi has been given the first dose, he will need to take another dose in 12 hours.*

🗣 **If Tukesiga comes to you at 10 am in the morning, when should she give Mbabazi the next dose? What other advice do you need to give to Tukesiga?**

Prompts:

k) *You need to continue the treatment tomorrow, give Mbabazi two more tablets in the morning, and two more in the evening. Do the same the day after that as well. Mbabazi needs to complete all three days of the drug dose in order to get better.*
l) *Look at how the malaria will reduce in Mababazi when you keep giving the drug (show package of drugs)*
m) *It is best to give Mbabazi the drugs with fatty foods or with milk.*
n) *If Mbabazi still has fever you can reduce this by sponging him down with tepid (not hot or not cold) water.*
o) *If Mbabazi does not improve in 24 hours bring him back to me to check him again*

🗣 **What else can you do to examine Mbabazi?**

Prompts:

p) *Check Mbabazi for any other signs of illness. What are the other signs of illness? – use the 'other signs for referral' job aid*

Scenario 2: Theresa and Tusuubira

🗣**Theresa comes to you with Tusuubira who is just one month old. Tusuubira has been crying more than usual in the last two days. He is not feeding and Theresa thinks he has had fever for one day now. What do you do?**

Prompts:
a) Tusuubira is less than two months old and so he is too young for you to treat him.
b) Explain to Theresa that Tusuubira needs to be brought to the health facility as soon as possible because he shows sign of illness

🗣**What forms do you need to complete that Theresa should bring to the health facility?**

Prompt:
c) The emergency referral form and treatment recording form needs to be completed

🗣 **Go through the treatment recording form and emergency referral form and show me how you would complete these.**

Scenario 3: Lucky and Karungyi

🗣 **Lucky comes to you with her little girl Karungyi. Karungyi is 6 months old and has had fever for two days. When you ask Lucky she tells you that Karungyi has not been feeding since yesterday afternoon. What is the first thing that you need to do to examine Karungyi?**

Prompt:
a) Karungyi's temperature needs to be measured. To save time, you can ask Lucky questions about Karungyi's illness to determine whether she has any danger signs while taking the temperature.

🗣 **When you ask Lucky further you find out that Karungyi has been vomiting repeatedly since yesterday. She cannot keep down any food. Also, when you assess her she does not respond to her name and seems lethargic. Karungyi is also RDT-negative. What do these signs tell you? What will you do next?**

Prompts:
b) Karungyi does not have malaria but she does have danger signs.
c) She is gravely ill and needs to go to the health facility immediately.

🗣 **What forms do you need to complete that Lucky should bring to the health facility?**

Prompt:
d) The emergency referral form and treatment recording form needs to be completed

🗣 **Go through the treatment recording form and emergency referral form and show me how you would complete these.**