Malaria Prevention Handbook

A Scout erecting a long life insecticide impregnated bed net for a family with young children Nyame Bekyere village, Ashanti district, Ghana

Introduction

Malaria is a disease which is caused by the bite of some species of mosquito in the tropical and sub-tropical parts of the world. If not treated in time, it can lead to severe illness and even death, particularly in children under the age of 5. Indeed, it is the single-most cause of death in children in Africa.

It is important that Scouts learn about the cause of this disease and can recognise the symptoms in an infected person of any age. Then be able to explain to this person or their family why they should seek treatment in the nearest health clinic as soon as possible.

Advising on the correct use of insecticide treated bed nets is an essential form of protection, because the Malaria-carrying mosquito is primarily active at night. Scouts can also help to erect such nets correctly (cover photo) and ensure that if gaps appear in any net, that these are mended, because mosquitos are experts at finding any holes from incorrect erection, or tears.

Mosquitos require access to water in order to lay their eggs and allow larval mosquitos to hatch. So Scouts should inspect the area around homes to see if there are any pools of water. They should advise that these be drained or covered with soil to prevent mosquitos breeding.

Scouts should help others less able than themselves by understanding the causes of malaria, its symptoms, where help can be found if bitten and better still, preventing mosquitos biting or breeding. In this way, World Scouting can contribute to the United Nations Sustainable Development Goal #3 Good Health and Well Being to which the World Organisation of Scouting Movements has pledged 3 billion hours of voluntary help by 2030.

For reports of educational and distribution campaigns in countries like Uganda, Ghana and Malawi and other related resources please go to our website

www.scoutsagainstmalaria.org.uk

Rayner Mayer

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Abbreviations

EMC	End Malaria Councils
GHG	Greenhouse gases
ITN	Insecticide treated bed nets
MoH	Ministry of Health
NSO	National Scout Organisation
SAM	Scouts against malaria
SDG	Sustainable development goals
UN	United Nations
UNICEF	UN Children's Fund
WHO	World Health Organisation
WOSM	World Organisation of Scouting Movements

Acknowledgements

To all Scouts, who have learnt about the disease, and have either subsequently fund raised so enabling more than 20,000 ITN treated bed nets to be purchased and to those Scouts who have helped to educate communities and distribute ITN treated bed nets to vulnerable families in Uganda, Ghana, Malawi and Gambia, primarily to rural communities but also within urban settlements.

Chapter 1 Understanding malaria

In which we learn about the role of the mosquito in spreading this disease

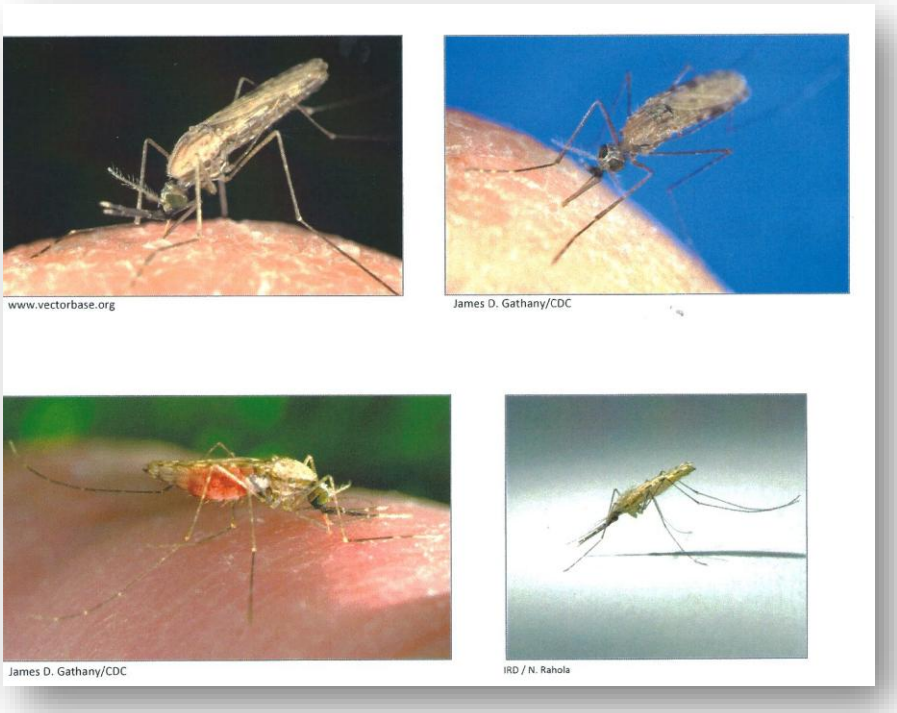
What is malaria

Living within the tropical zone is much more challenging than living within the temperate zone as the climate is more extreme. By contrast within the tropics, the temperatures are much higher with some regions which also receive high rainfall giving rise to tropical rain forests whereas in other areas it is very dry resulting in deserts. In addition, its inhabitants are exposed to a variety of tropical diseases for which few vaccines have yet been developed.

Malaria is a disease spread by a species of mosquitos that are present in the tropical and sub-tropical areas of the world. The region within sub-tropical Africa carries the highest world-wide proportion of illnesses that is 94% (240 million) and 85% (570 million) of malaria deaths. This has resulted that in some African countries between 30 and 50% of all people attending health clinics, are suffering from malaria having been bitten by a mosquito.

Causes

Mosquitos are a species of insect which are very important pollinators of plants and are very numerous, there being on average some 15,000 mosquitos for every inhabitant of our planet. However, only a very small number of mosquitoes called A*nopheles* carry the parasite which results in malaria. Through the female species need for blood, in the process of drawing blood, a parasite can be injected into the blood stream called a *plasmodium* which subsequently infects the liver cells and results in malaria.



Types of anopheles mosquitos

Symptoms

Common symptoms include one or more of the following –

- Fever and high temperature (38 C or above)
- Chills and shivering
- Headaches
- Muscular aches and pains
- Diarrhoea
- Nausea and vomiting

What to do if someone is bitten

It does not follow that being bitten by a mosquito will result in malaria as *not all* anopheles mosquitos carry the plasmodium parasite which causes malaria. In addition, symptoms may only appear after one or more weeks.

If bitten, observe whether any of the above symptoms are present and if so which. If more than one of these symptoms are observed then it is important that the person be advised to seek help from the nearest clinic who should be able to initiate treatment.

The most obvious and severe symptoms in adults are a high temperature and shivering while in young children, vomiting and diarrhoea are of the greatest concern as their body mass may be insufficient to retain sufficient liquid or food and so they can dehydrate.

If someone is bitten, particularly young children, expectant mothers or older people, it is important to advise that they go the nearest health clinic where malaria treatment drugs should be available. To avoid cerebral malaria, it is essential that treatment begins within 12 hours of being bitten.

Scouts should therefore know what the important symptoms are and where is the nearest clinic and/or source of help.

Common facts

- Only some mosquitos carry the parasite which can result in malaria
- Mosquitos are not present in all areas within the tropics as they require heat and moisture
- Infected people cannot infect other people
- Mosquitos can be infected by biting some person who is already suffering from malaria
- There is urgency in seeking treatment if bitten and one or symptoms are present
- Malaria is a serious illness, which if not treated, can result in death

Video clips

Two friends, one from Africa and one from UK, discuss the role of the mosquito in spreading malaria, and how malaria can be prevented

Friends against malaria https://www.youtube.com/watch?v=16plJGNvJX8

Howie Maujo, Chief Executive Commissioner explains how Scouts in Malawi have used Scouts against Malaria funding to advise and protect local communities against incidence of malaria and how they have distributed ITN bed nets and helped erect them

https://www.youtube.com/watch?v=p0171fWxVpg&feature=youtu.be

https://www.scoutsagainstmalaria.org.uk/blank-1

Suggested activity

Activity 1 Understanding malaria

Chapter 2 Malaria transmission and risk factors

in which we learn about how malaria is spread and why malaria is so effective

How malaria spreads

Malaria is primarily caused by the bite of one type of mosquito, the anopheles mosquito. This can occur when the female draws blood if it is infected with a parasite which can enter the blood stream and subsequently attack the liver. These types of mosquito are primarily found in the sub-tropical areas of the world and they thrive in regions where the air temperature is consistently high during the day and night and there is access to stagnant pools of water where their larvae can breed.

Such areas are generally found within the tropics, which stretch 2500 km either side of the Equator. Mosquitos cannot breed in desert areas as these are generally too dry or in mountainous areas which are generally too cold at night.

Rural and urban areas

The main carrier of the malaria parasite is anopheles gambiae mosquito which is present primarily in rural areas where open sources of water can generally be found.

However another species of mosquito, anopheles stephensi, which also carries the malaria parasite, has crossed over from Asia into Africa. It has the capacity to thrive in urban areas and has been reported in a small number of countries so far but is increasing its range. Where it has been reported, it has been found to be resistant to many of the insecticides currently used in public health control posing an extra challenge to controlling its spread.

Breeding

The two requirements for mosquitos to breed are –

- Female able to extract blood on biting a human and extracting the protein necessary to develop her eggs
- Sources of stagnant water where she can lay her eggs, and the emerging larvae can swim for 8 to 10 days until they become pupae and subsequently can fly.

Why malaria is so effective

The disease affects people living primarily in the tropics as mosquitos will always breed in countries where it is hot and wet. Mosquitos, the carrier of the parasite which results in malaria, have been around for millions of years and are likely to continue their existence for many years to come. Even though there is a global partnership to fight the disease led by the World Health Organisation, only two effective vaccines are currently being trialled and rolled out

Vulnerable people

Some people are more vulnerable and at risk of contracting malaria than others.

These include –

- Children under the age of 5 years old because of their low body mass
- Expectant and lactating mothers because of their unborn or recently born child
- Old people whose health may no longer be good
- Those suffering from HIV or albinism

Other factors which reduce the resistance to malaria include–

- *Climate change,* which is causing changes in rainfall patterns resulting sometimes in drought conditions resulting in crop failure and a lack of food.
- At other times, excessive rainfall in many African countries provides ideal conditions for breeding mosquitos. The increasing incidence of tropical storms as the result of climate change has resulted in pools of stagnant water which are ideal for breeding so leading to an increase in the incidence of malaria
- *Poverty,* which may often mean going without one or more meals a day resulting in less resistance to disease.
- *Immunity,* mosquitoes are becoming *immune* to currently used insecticides in many countries so requiring new insecticides to be developed.

Suggested activity

Activity 2 What Scouts should know and do

Chapter 3 Malaria prevention methods

in which various methods of prevention are described

Personal

To prevent mosquitos biting, wear long sleeved clothing and trousers especially from sunset to dawn because mosquito carrying malaria are particularly active during darkness.

Apply mosquito insect repellent , if available, to exposed parts of the body which is safe and effective for children over the age of 2 months and adults.

Sleep under insecticide treated bed nets.

Good hygiene and sanitation

Access to clean water is important, if at all possible, because unprotected and uncapped water sources will be a breeding ground for mosquitos.

Good hygiene requires regular washing of hands with clean water, if possible, particularly after having been to the toilet and before preparing food.

Good hygiene also requires that any urine or excreta be deposited in places which cannot contaminate any water source.

Reducing mosquito breeding sites

Reducing places where mosquitos can *breed* is very effective as their larvae require stagnant pools of water in order to become adults as it takes up to 10 days for the larvae to convert to insects which can then fly.

So it is important to –

- clean gutters
- keep grass around home slashed
- regularly clean surroundings
- drain stagnant pools of water in which mosquitos can lay their eggs from which insects can hatch. Such pools should be drained or covered with soil. Difficult during the rainy season, but every effort has to be made to eliminate such sources

Environmental control

Indoor residual spraying involves spraying insecticide on all surfaces inside buildings to kill mosquito carrying malaria. This method takes advantage of the indoor resting behaviour of malaria carrying mosquitos who tend to rest on such surfaces after taking a blood sample. This does not prevent people being bitten – only prevents transmission of malaria parasite to other people.

Preventive medicine in high risk areas involves taking chemoprophylaxis medicines which target various stages of the plasmodium life cycle. Various drugs are available but can have side effects and mosquitos are becoming resistant to some drugs. Only a short term solution.

Vaccines

Since October 2021, WHO has recommended the broad use of the RTS,S/AS01 malaria vaccine among children living in regions with moderate to high parasite malaria transmission. The vaccine has been shown to significantly reduce malaria, and deadly severe malaria, among young children.

In October 2023, WHO recommended a second safe and effective malaria vaccine, R21/Matrix-M. The availability of two malaria vaccines is expected to make broad-scale deployment across Africa possible. The malaria vaccine should be provided in a schedule of 4 doses in children from around 5 months of age. Vaccination programmes may choose to give the first dose at a later or slightly earlier age based on operational considerations.

A 5th dose, given one year after dose 4, may be considered in areas where there is a significant malaria risk remaining in children a year after receiving dose 4.

Both vaccines have been shown to reduce malaria cases by more than half during the first year after vaccination – this is the period when children are at highest risk of malaria illness and death. A fourth dose prolongs the protection. Both vaccines prevent around 75% of malaria episodes when given seasonally in areas of highly seasonal transmission.

Insecticide treated bed nets

The mosquitos that spread malaria are active from sunset to dawn so to avoid being bitten at night, the most suitable form of protection is to sleep under an insecticide impregnated mosquito net. This has two benefits – it will prevent any mosquito being able to bite someone when they are asleep while absorbing the insecticide will kill the mosquito.

It is important that these nets are correctly used which includes –

- Erecting the nets in such a way that no gaps exist through which mosquitos can enter
- Preventing holes or tears by careful usage
- Patching any holes or tears with any available material

It is essential to explain how to erect such nets to persons receiving the nets.

If necessary people may require assistance with erecting these nets in their homes as can be seen on the cover photo

Net distribution Aflao-Agblekpui campaign, Volta Region, Ghana

Demonstrating how to erect a bed net, Tontro Community, Eastern Region, Ghana

Suggested activity

Activity 3 Erecting a bed net

Chapter 4 Scouting activities and malaria prevention

in which we describe how malaria prevention can form part of the Scouting programme

To reduce the incidence and impact of malaria, Scouts can help their family, friends and neighbours by understanding –

- How malaria occurs
- What are its symptoms
- Why it is necessary to seek help if someone is bitten
- How malaria can be prevented

Such activities should be integrated into the Scout programme at regular intervals in areas where mosquitos are active because if someone is bitten, then the sooner that the treatment can be started the more likely that the effects of the illness can be contained.

How malaria occurs

Mosquitos are very numerous in sub-tropical areas that are hot and wet. However only the female of some species carry the parasite which can pass into the blood stream when drawing blood and these parasites called plasmodium can attack the liver cells.

Preventing being bitten

There are various precautions every person should take who live in an area where mosquitos are present – these include

- Wearing suitable clothing after dark that is long sleeve tops and trousers as mosquitos tend to be most active from dusk to dawn
- Sleeping under an insecticide treated bed net and ensuring there are no gaps through which a mosquito could enter
- Eliminating all stagnant pools of water in and around your home and those of your neighbours so that the female mosquito cannot lay her eggs

Recognising the symptoms and seeking help

It is very important to be able to recognise the symptoms of malaria either in yourself, other members of your family or someone you meet. These symptoms will include one or more of the following –

- high temperature
- chills and shivering
- nausea and vomiting, that is unable to retain food you might have eaten
- prostration (inability to sit), altered consciousness lethargy or coma.
- breathing difficulties.
- severe anaemia.
- generalized convulsions/fits.
- inability to drink/vomiting.
- dark and/or limited production of urine

When one or more of the above symptoms appear, it is important that person should seek help and treatment at the nearest clinic as soon as possible. This is particularly important for young children under the age of 5 whose body mass is small. In the case of cerebral malaria, treatment should start within 12 hours of being bitten

Safe camping practices

- Choosing malaria free locations.
- If this is not possible using insecticide treated bed nets to ensure that mosquitos cannot bite while asleep
- Covering up exposed body parts from dusk to dawn

When camping or organising any outdoor activity, identify where is the nearest clinic where help can be sought if bitten before starting the activity.

If bitten first aid comprises

- washing the area with soap and water
- applying a cold compress – immerse cloth in cold water
- applying a bite relief cream or take an antihistamine to prevent itching
- If symptoms get worse, seek help at the nearest clinic

Identifying and eliminating mosquito breeding sites

Female mosquitos need to lay their eggs in stagnant pools of water so that their eggs can hatch and mosquitos can swim around until they have grown their wings and can fly after a period of around 10 days.

Pools of water can occur after any period of rain both in the ground and in any container that holds water. To eliminate such pools it is necessary to turn the container over so that the water can drain away. If there are hollow areas in the ground where water can collect fill these up with soil so the water cannot form a pool.

Suggested activity

Activity 4 Doctor vs Mosquito

Chapter 5 Protecting vulnerable people

In which we consider why certain groups of people are more vulnerable to the impact of malaria

Some groups of people are more affected by this disease than others and so it is important that these vulnerable families are given priority in any awareness, education or distribution of nets campaign.

Children particularly under the age of 5

Distributing an ITN net and explaining how it should be correctly used to a mother with a young child

Children have low body mass and so loss of fluids through diarrhoea or vomiting is of great concern particularly when both occur so all children should be protected by sleeping under an ITN net

Pregnant and lactating mothers

Explaining how the net should be used.

Malaria can affect not only the mother, but also the unborn child which can result in a low birth weight, premature birth or even a miscarriage. Also to explain why if bitten, mothers should seek medical attention as soon as possible.

Explaining to a grandmother who looks after 4 grandchildren why and how children can be protected while sleeping.

Older people

Who may not be in good health so if bitten symptoms are likely to be more severe. If suffering from disabilities, they may not be able to do sufficient farming to provide for themselves as farming may be their only means of survival.

Suffering from HIV

People living with HIV have auto immune systems which have been weakened and so are more likely to suffer severe symptoms if bitten. So it is essential that such persons have access to and are able to sleep under an ITN net

Albinism

Beneficiaries include a boy with albinism.

People with albinism are unlikely to socialise due to some insecurities about their lives as it is believed that their bones bring fortune to people. They are confined to their homes in fear of being killed and this affects their education as well as their health.

Suggested activity

Activity 5 Why is malaria so difficult to prevent.

Chapter 6 Community engagement and awareness

in which we discuss how Scouts can help with educational campaigns and in the distribution of ITN bed nets

Scouting's greatest advantage is that its Groups are present in both urban and rural communities. They are therefore able to assist with –

- advice and educational campaigns about the cause and prevention of malaria
- recognition of the symptoms and where help can be obtained if bitten
- distribution and erection of ITN bed nets
- correct usage of these nets to prevent mosquitos entering while they are asleep
- elimination of mosquito breeding sites

Identify a community

Identify a local community, which would benefit from advice how to prevent malaria and distribution of ITN treated bed nets in consultation with the Ministry of Health (MoH) and/or local health officers.

Discuss with village chief and local health officer whom to invite to a gathering where it will be possible to explain how to prevent malaria, to distribute ITN nets to vulnerable families and help with erecting the nets where needed

Identify a source of ITN nets

Identify a source of ITN nets by consulting your National Scout Organisation, local health clinic or heath officer. Enquire whether Scouts against Malaria have funding available to help purchase such nets. Ensure that the type of net you obtain is insecticide treated and approved by the World Health Organisation.

The local office of UNICEF may be able to supply such nets if you can explain how Scouts could help distribute such nets to vulnerable families and assist with safe erection of the nets.

Arrange a meeting.

- Discuss the campaign with community elders and local health officer.
- How to identify vulnerable families and invite them to the gathering
- Arrange a time and meeting place.
- Ensure your Scouts have sufficient knowledge that they can answer questions when distributing nets or helping erect the nets.
- Arrange for your Scouts have sufficient materials like cord with which they will be able to erect the bed nets.

The disease

The local health officer should explain to the gathering -

- Why mosquitos bite.
- Which species carry the parasite?
- Who are most vulnerable people and why?
- What protection is available for expectant mothers and other vulnerable people?

How to avoid being bitten

- Wearing clothing which protects the skin against being bitten
- Importance of good hygiene and sanitation
- Sleeping under an insecticide treated bed net if available to prevent being bitten as mosquitos carrying malaria are principally active at night.

Health officer at Chin'amba area under Mvera mission hospital, Malawi, greeting the elderly gathered.

Explaining what to do if bitten by a mosquito

- Know the malaria symptoms because not all mosquitos carry the parasite that could result in malaria
- If one or more malaria symptoms are present then that person needs to seek help from the nearest clinic as soon as possible particularly those persons who are vulnerable to the onset of the disease
- Why there should be no delay in seeking help if symptoms appear

Distributing ITN bed nets

- In distributing ITN bed nets priority should be given to those members of the community who are most vulnerable
- Explaining how these should be erected
- assisting with erection of nets

Demonstrating how to erect an ITN bed net, Yensiso village, Eastern Province, Ghana

Preventing mosquitos from breeding

- Eliminating stagnant pools of water in which mosquitos can breed in and around ones home and that of their neighbours.

Distributing ITN bed nets to a family with young children, Kasakoso village, Uganda

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Scouts erecting a bed net in someone's home

Suggested activity

Activity 6 Why are some people more vulnerable than others.

Chapter 7 Emergency response and treatment

in which we discuss how to recognise early symptoms, initial treatment and when to seek medical assistance

Recognising early symptoms

The spot where the mosquito has bitten is likely to be red, swollen and sore

Act as follows -

- cool the spot using clean cold water and observe if the swelling increases or decreases
    - if it decreases then it is likely that the mosquito is not a carrier of the parasite responsible for causing malaria
    - if the spot increases then treat as if the parasite has entered the blood stream
- observe whether any of the following symptoms are present –
    - Fever and high temperature (38 C or above)
    - Chills and shivering
    - Headaches
    - Muscular aches and pains
    - Diarrhoea
    - Nausea and vomiting
- If any one or more of the above symptoms are present, assume that the person has been bitten

First aid before medical help becomes available

- if chill or shivering, cover with extra clothing or a blanket
- if headache, take a pain killer pill like an aspirin
- if diarrhoea, replace lost water and body salts
- if dehydrated, drink more fluids preferably clean water

When to seek medical help

If the swelling around the bite persists and one or more of the above symptoms are present, it is best to assume that the person might have been infected with the malaria parasite when bitten.

So do not delay at seeking help at the nearest clinic where treatment is available

Chapter 8 Partnerships for sustainability

in which we discuss how Scouts can work with the local health officer and other organisations to limit the onset of malaria

In educating Scouts about what they can do to limit the incidence of malaria, leaders should contact their local health officer or clinic. Then, to discuss with them how Scouts may be able to help limit the incidence of malaria. Also to enquire if they know of any source of ITN treated bed nets which Scouts can help distribute and erect.

Invite them to meet with your Scouts and discuss with them what Scouts can do to prevent both their and other families from catching malaria.

At national level, Scout Organisations should make contact with –

- Ministry of Health
- End Malaria Councils
- UNICEF
- World Health Organisation (WHO) regional office
- Save the Children

WHO strategy and World malaria report

In their annual report, WHO observes that in the past 20 years, their global programme has averted some 1.5 billion cases of malaria and 7.6 million deaths mostly of children under the age of 5 years old. However, progress against malaria continues to plateau, particularly in the high burden countries in Africa as mosquitos become immune to some types of insecticide.

It is unfortunate that the African Region has shouldered more than 90% of the overall disease burden even though the region has reduced its malaria death toll by 44% since 2000.,

Need for more resources!

These reports observe that gaps in access to life-saving measures are undermining global efforts to curb the disease. “While Africa has shown the world what can be achieved if we stand together to end malaria as a public health threat, progress has stalled,” said Dr Matshidiso Moeti, WHO Regional Director for Africa.

Stepping up the fight

WHO is therefore calling on countries and global health partners to step up the fight against malaria, a preventable and treatable disease that continues to claim hundreds of thousands of lives each year. A better targeting of interventions, new tools and increased funding are needed to change the global trajectory of the disease and reach internationally agreed targets.

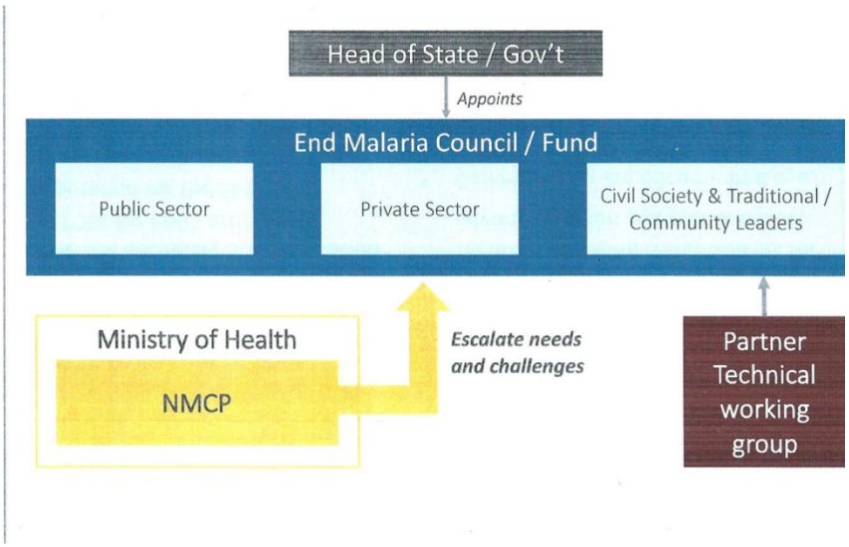
“It is time for leaders across Africa – and the world – to rise once again to the challenge of malaria, just as they did when they laid the foundation for the progress made since the beginning of this century,” said WHO Director-General, DrTedros Adhanom Ghebreyesus. “Through joint action, and a commitment to leaving no one behind, we can achieve our shared vision of a world free of malaria.”

High burden to high impact initiative (HBHI)

Launched in November 2018, HBHI builds on the principle that no one should die from a disease that is preventable and treatable. Over the last two years, all 11 HBHI countries in sub-Sharan Africa have implemented activities across four response elements –

- political will to reduce the toll of malaria.
- strategic information to drive impact.
- better guidance
- policies and strategies and a coordinated national malaria response.

End Malaria Councils



These are Councils in which all persons active in limiting the incidence of malaria can cooperate and coordinate their activities.

They should also be able to access ITN nets from donors and allocate to those able to distribute.

The national Scout Association (NSO) should contact the Ministry of health and request that their Scout Association become a member of such a council.

UNICEF

This an UN organisation which is present in almost every country which protects and promotes the well-being of children and to foster their human development. Through contacting the local UNICEF office and explaining what Scouts can do to help inform, educate, distribute and erect ITN bed nets, UNICEF may be able to provide such nets as free issue or at cost.

Save the Children

The aim of this charitable organisation is to help every child reach their full potential and stay safe, healthy and keep learning. So, like UNICEF, the national office may therefore be able to identify a source of ITN nets and/or provide logistical support in any distribution.

Chapter 9 Malaria card and certificate

Malaria card

Prevent being bitten • Wear suitable clothing after dark that is long sleeve tops and trousers • Sleep under an insecticide treated bed net and ensure there are no gaps • Eliminate all nearby stagnant pools of water in which mosquitos can breed
Recognise symptoms and seek help if • High temperature, chills, shivering • Nausea and unable to retain food • Breathing difficulties • Severe anaemia such as very tired, pale skin, dizziness

Malaria certificate

Certificate of Achievement

This certificate is awarded to

_____

For achieving a high standard in knowledge of

Understanding the nature and severity of malaria, especially in young children.
Understanding of how malaria is contracted.
Understanding of how malaria can be prevented.
Be able to explain how to use mosquito nets correctly.
Help to distribute and maintain mosquito nets.

Scouts Against Malaria

Activities

Activity 1 Understanding malaria

Described in Chapter 1 Understanding malaria

Working in groups discuss the answers to the following questions of which there may be more than one answer. Then gather in a circle and each group presents in turn their answers to each question with the leader then developing a consensus

What causes malaria?

a) *Virus*
b) *parasite*
c) *insect*

Why do mosquitos bite?

a) *Hungry*
b) *being friendly*
c) *need some blood*

What happens when mosquitos bite?

a) *Swelling*
b) *might inject a parasite*
c) *induce a fever*

What is the role of the mosquito in spreading the disease?

a) *Biting people*
b) *Drawing blood*
c) *injecting a parasite*

What do you think can be done to prevent the spread of this disease?

a) *finding a vaccine*
b) *preventing mosquitos from breeding*
c) *preventing mosquitos from biting?*

Answers to questions

What causes malaria? *b)*

Why do mosquitos bite? *c)*

What happens when mosquitos bite? *a), b) and c)*

What is the role of mosquito in spreading the disease? *b) and c)*

What do you think can be done to prevent spreading of the disease? *a), b) and c)*

Outcome

Each Scout should have some knowledge about the disease and how it is spread.

Activity 2 What Scouts should know and do

Described in Chapter 2 Malaria transmission and risk factors

Working in groups discuss the answers to the following questions. Then gather in a circle and each group presents in turn their answers to each question so the leader can develop a consensus

a) if bitten by a mosquito, how would you know if you or someone else had contracted malaria?
b) which groups of persons are most at risk if bitten by a mosquito?
c) why is it important to seek medical help and treatment if malaria is suspected

Answers to questions

a) One or more of the following symptoms –

- fever and high temperature,
- chills and shivering, headaches,
- muscular aches and pains,
- diarrhoea
- nausea and vomiting.

b) Most at risk –

- Young children under the age of 5
- Expectant mothers
- Old people.

c) The sooner that anti malaria treatment can begin, the less severe will be the symptoms. In the instance of cerebral malaria this needs to be much less than 12 hours

Activity 3 Erecting a bed net

Described in Chapter 3 Malaria prevention methods

This activity is to demonstrate how to erect a mosquito net in a home. To illustrate the correct erection of such nets, each group create a framework of bamboo poles using twine to bind the poles together. Then to suspend the net from the framework using the sewn in loops at the ends. Each person should then enter the enclosure and ensure that there are no gaps which could allow a mosquito to enter!

This activity requires good teamwork and supervision as the nets are delicate and can easily be damaged.

Practicing how to suspend a bed net

Activity 4 Doctor vs Mosquito

Described in Chapter 4 Scouting activities and malaria prevention

Pick one person to be the mosquito. Their aim is to catch (infect) as many other Scouts as possible

- One other Scout is picked to be the Doctor. They can't be caught by the mosquito, because they have been immunised

- Whenever a Scout is caught, they are infected by the disease, and have to stand still with their feet apart.

- The Doctor has to cure them by sliding between their legs.

Activity 5 Why is malaria so difficult to prevent.

Described in Chapter 5 Protecting vulnerable people

Working in groups discuss the answers to the following questions. Then gather in a circle and each group presents in turn their answers to each question with the leader developing a consensus

Consider in turn each question for which there may be more than one answer

- Who is most at risk of worse symptoms and why?
- Why are so many people vulnerable?
- How can a changing climate affect the incidence of malaria?
- What impact can other illnesses have on catching malaria?

Answers

Who is most at risk of severe symptoms and why?

- Young people because of low body mass
- Expectant mothers because the baby could be affected.
- Old people who may be suffering poor health
- People suffering HIV/aids or albinism because of their underlying condition.

Why are so many people vulnerable?

- Because of their underlying health condition
- They do not wear long sleeve clothing
- They do not sleep under an ITN treated bed net
- They leave gaps in the net so mosquitos can enter.

How can a changing climate affect the incidence of malaria?

- Heavier rainfalls will create more pools of water in which mosquitos can breed.
- Extreme weather conditions will affect crops so communities may have less food available to eat.

What impact can other illnesses have on catching malaria?

- An existing disease will weaken the body's immune system so that the parasite causing malaria could be more virulent (aggressive)
- They may already have a high temperature
- They might be weakened by not being able to take in food or digesting it
- Difficulty in breathing

Outcome Awareness of the factors that contribute to malaria being so effective.

Activity 6 Why are some people more vulnerable than others.

Described in Chapter 6 Community engagement and awareness

Working in groups discuss the answers to the following questions. Then gather in a circle and each group presents in turn their answers to each question with the leader developing a consensus.

a) Which people are more vulnerable than others to the onset of malaria
b) Why are they more likely to suffer severe effects of malaria?
c) What can Scouts do to help?

Answers

a) Young children, expectant and lactating mothers, old people and those suffering from albinism
b) The reasons why some groups are more vulnerable are
    - Young children because of low body mass as they may not be able to retain liquids or solids
    - Expectant and lactating mothers because of the presence of a small baby unborn or born
    - Old people because they might already suffer poor health
    - Those suffering albinism because their immune system might be weakened
c) Important to ensure that vulnerable people are aware of what causes malaria, how they can protect themselves and why they should have priority in any ITN net distribution

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