REPUBLIC OF SIERRA LEONE ARMED FORCES

MALARIA CONTROL POLICY

By Command of the
Defence Policy Committee

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MALARIA CONTROL POLICY FOR RSLAF

INTRODUCTION

ENDEMICITY OF MALARIA

EPIDEMIOLOGY

1. The term malaria includes all fevers produced by endo-corpuscular parasites of the genus Plasmodium, which give rise to periodic fevers, accompanied by anaemia and enlargement of the spleen. Malaria heads the list as the most formidable of all endemic tropical diseases in this country.

2. A national malaria-metric survey conducted in collaboration with WHO in 1977/79 found the overall prevalence of malaria infection to be 65%. Plasmodium falciparum, the cause of severe malaria is responsible for more than 90% of all malaria infections, with occasional occurrence of mixed infections of Plasmodium Malariae and Plasmodium Ovale.

3. The main vectors are *Anopheles gambiae, Anopheles Funestus* and *Anopheles Melas*. An entomological baseline survey conducted in 1999 confirmed *Anopheles gambiae* as the main vector of malaria in Sierra Leone. Transmission is throughout the year, with peaks at the beginning and end of the rainy season.

Disease Burden

4. Malaria infection remains the leading public health problem in Sierra Leone. The entire population is susceptible to malaria, but pregnant women and children under five years of age are the most vulnerable groups. Malaria prevalence is estimated at 65.6% accounting for about 48% of the total out patient morbidity, it accounts for 50 – 60% of children's hospital admissions, with a case fatality rate of between 16 – 33%. Visitors and expatriates from non malarious countries are also at an increased risk of the disease.

5. Anaemia due to malaria has also manifested itself as a serious Public Health concern in the vulnerable groups. A recent survey conducted by UNICEF in collaboration with the Ministry of Health on anaemia among pregnant women in Sierra Leone shows a prevalence level of 87%. The Anaemia problem could be multi-factorial, but malaria is one of the main contributing factors associated with the high prevalence. The situation in the RSLAF shows a gloomier picture than the National situation.

6. The combined effects of poor/inadequate sanitation facilities, poor living conditions, overcrowding, increased exposure to disease vectors (jungle operations/exercise) together with inadequate nutrition has significantly increased the incidence of malaria in the RSLAF.

7. The disease causes absenteeism from work resulting in low productivity and low quality of life. It places heavy pressure on available health services nationwide.

The Control of the mosquito

8. In malarious theatres of operations/exercise, the military approach to the control of mosquitoes can be briefly summarized as follows:

a. Camp siting – This is of great importance if a choice is possible.

b. Personal protection is of fundamental importance because it can always be practised.

The measures to be used are:

a. Protective clothing, (bush shirt) repellents, mosquito nets, and where possible, screened quarters (wire mesh).

b. Insecticide sprays and aerosols for adult mosquitoes.

c. Chemo-prophylactic substances e.g. Daraprim, Paludrine etc on weekly doses.

d. Training in the prevention and control of malaria should be part of the training package of all operations.

The Perception of Malaria

9. The disease is recognised by every body in this country. It is almost a common practice in this society for medics and non-medics to diagnose and treat all fevers as malaria; with self-medication constituting a significant proportion of malaria treatment through the use of various anti-malarials and traditional herbs. Misconceptions about the associated causes of malaria include excessive beer consumption, peanuts, oranges and witchcraft.

10. Ignorance of the causes of malaria has made most of our troops and their dependants not to relate malaria to mosquitoes and as such, treatment for severe malaria for both adults and children is often sought at the door-steps of traditional herbalists.

11. These negative practices and attitudes may be attributed to, partly or entirely due to lack of education/poverty which contributes to the inability of many people to purchase drugs or seek medical attention both in the urban and rural areas.

MALARIA POLICY

12. The Public Health Department of the RSLAF in the Directorate of Defence Medical Services, is charged with the responsibility for the control of communicable diseases has devised a Policy Document as an attempt to provide guidelines for the control of malaria in the RSLAF.

13. This document is intended to be used as a guide for the implementation of all malaria control activities carried out in all military health care facilities. The document was borne out of the need for a Malaria Control Policy for the RSLAF, as a result of several years of compilation, analysis, interpretation, and graphical presentation of annual data on the morbidity and mortality rates of malaria among troops and their dependants. The document is compiled with reference materials from the Malaria Control Policy Document of the Ministry of Health and Sanitation.

AIM

14. The aim of this Policy is to reduce mortality (deaths) and morbidity (ill-health) due to malaria in members of the RSLAF and their dependants.

Objectives

15. The Malaria Policy objectives are as follows:-

a. Reduce the incidence of severe malaria, especially in children under-five years of age and pregnant women.

b. Reduce the mortality due to severe malaria in the vulnerable groups (Under-fives & pregnant women) and others, in all the health facilities in Military Barracks and other settlements.

STRATEGIES

16. The Defence Medical Services Strategies on Malaria Control are identical to the Ministry of Health and Sanitation Strategies for malaria control.

a. To strengthen capacity in diagnosis, management and prompt referral of severe malaria cases at military health facilities especially in the periphery.

b. To strengthen capacity in diagnosis and management of uncomplicated malaria cases at peripheral health facilities.

c. To improve treatment of uncomplicated malaria cases at military health facilities especially at battalion and company levels.

d. To promote individual protection through the use of insecticide impregnated bed nets, chemo-prophylactic substances and repellents.

e. To strengthen troops sensitization and mobilization for environmental management.

f. To improve vector control through the use of insecticides and disinfectants.

INTERVENTIONS

17. Interventions in Malaria Control involve case management at all levels in the available health facilities in the RSLAF, individual protection, vector control and the environment.

Case Management

18. Case management also falls in line with the Malaria Control Programme Policy of the Ministry of Health.

a. Management of malaria cases in military health facilities.
b. Management of malaria cases at Battalion Aid Posts (BAPs) and M I Rooms.

Personal Protection

a. Individual protection through the use of insecticide treated bed nets (ITNs) repellents
b. Chemo-prophylactic substances especially in pregnant women.

Vector Control

a. Management of the environment including vector control - mosquito

Troops sensitization and mobilization

a. Health talks/Health Education

b. Troops participation in the management of their environment

Priority will be given to:

a. Management of malaria cases in all military health facilities

b. Management of malaria cases at BAPs and M I Rooms.

c. Individual protection through the use of insecticide impregnated bed nets.

d. Improvement of the environment.

A Malaria Control Programme Committee

18. This committee is to comprise of:

a. A Clinician/Doctor
b. Public Health officer
c. Laboratory Technician
d. EHT/SECHN/EHA
e. Training officer/JMU

The committee among other things monitors and supervises the programme's activities.

MONITORING AND SUPERVISION OF ACTIVITIES

Supervision

19. The Supervisory Protocol developed by the Ministry of Health and Sanitation for Malaria/Primary Health Care (PHC) activities will be adopted by the DMS/JMU for the supervision of all military health facilities. Routine supervision will be carried out on a monthly basis, while provision will be made for ad-hoc supervision for corrective measures and on the job training.

Monitoring of Activities

20. Monitoring of the implementation of activities will be carried out periodically by the Malaria Control Programme Committee. The following selected indicators will be used to monitor activities:

a. Improve Case Management in Military Health Care Facilities

i. Proportion of under-five children with severe malaria managed correctly.

ii. Proportion of under-five children with uncomplicated malaria managed correctly

iii. Proportion of children less than five years dying from malaria in military health facilities

iv. Incidence of severe malaria in children less than five years

v. Incidence of severe malaria in pregnant women

vi. Proportion of health facilities with adequate anti-malarial drugs

vii. Proportion of health facilities where the National Guidelines on case management exist and correctly utilized

b. ***Improve case management at battalion and company level***

i. Proportion of children less than five years with malaria, correctly treated by medical orderlies and other health workers (NOB III and MAs)

ii. Proportion of malaria cases correctly managed by these health workers

c. ***Promote the use of bed nets***

i. Proportion of soldiers using at least one insecticide treated bed-net

ii. Proportion of children less than five years sleeping under insecticide treated bed-nets

iii. Proportion of pregnant women sleeping under insecticide treated bed-net

SURVEILLANCE

21. Surveillance will be carried out to ascertain the efficacy of the anti-malaria drugs used in the programme.

a. Surveillance will be carried out to determine the susceptibility of malaria parasites to anti-malaria drugs currently in use.

b. Morbidity and mortality levels due to malaria will be monitored regularly using daily sick parade in health facilities. Data collected will be used to monitor disease trends and its effect on troops and their dependants.

HEALTH EDUCATION AND PUBLICITY

22. The OC Public Health and his team will develop and disseminate IEC (information, education and communication) materials to troops on malaria control, conduct community mobilization and sensitization of troops and their families for the control of malaria in their communities.

TRAINING

23. Training of health personnel on effective case management will be intensified and training activities integrated into other training programmes for other communicable diseases. A training of trainers' seminar/workshop will also be conducted annually.

EVALUATION OF THE PROGRAMME

24. The Programme evaluation will be carried out on yearly basis to measure the formative (process) and summative (impact) of the programme.

THE DIAGNOSIS AND TREATMENT OF MALARIA CASES IN MILITARY HEALTH FACILITIES

25. The addition of this section on the diagnosis and treatment of malaria cases, using reference materials from the National Malaria Control Programme Policy Documents is a deliberate attempt to provide appropriate guidelines for health personnel manning RSLAF health facilities countrywide on proper diagnosis and treatment of malaria. To enhance the achievement of the programme policy objective and strategies, the health providers in these health care facilities must have reasonable practical and theoretical knowledge of diagnosis and treatment/referral of all forms of malaria cases. This knowledge will help to:

a. strengthen capacity in the diagnosis and treatment of uncomplicated malaria in military health care facilities.

b. improve the treatment of uncomplicated malaria at battalion and other levels.

c. improve case management in military health care facilities.

Early diagnosis and prompt treatment of malaria cases in military health care facilities.

The clinical presentations of malaria are:

a. uncomplicated malaria

b therapeutic/treatment failures

c. severe malaria

The early diagnosis and prompt treatment of these forms of malaria is a primary strategy for the reduction of mortality due to malaria.

Case Definitions

a. ***Uncomplicated malaria***

A person presenting with a history of fever within the last 2 – 3 days or having fever (axillary temperature > 37.5 degree C) rigors, and headache in the absence of any other specific cause shall be considered a case of malaria.

b. ***Therapeutic/Treatment Failure***

When fever persists or symptoms continue for more than 3 days after starting treatment in adequate recommended dosage required, and there is still presence of malaria parasites in blood.

c. *Severe Malaria*

Severe malaria is a medical emergency in which one or a combination of the following signs and symptoms are present in a patient with the infection:

i. Delirium

ii Confusion

iii. Excessive sleepiness

iv. Convulsions/seizures

v. Coma (cerebral malaria)

vi. Severe anaemia

vii. Passage of scanty or no urine

viii Jaundice

ix Haemoglobinurea (coca – cola coloured urine)

Laboratory Diagnosis

The definitive diagnosis of malaria is the presence of malaria parasites in the blood film.

a. **Negative blood film however does not always exclude malaria. Treatment for malaria must be continued if the symptoms still persist.**

b. **Laboratory diagnosis is to be requested in cases of therapeutic/treatment failures as well as in cases of severe malaria.**

Anti-malarial Drug Policy

26. The management of the various forms of malaria with the available anti-malarial drugs should be controlled by a clearly defined drug policy to ensure effective therapy and prophylaxis, and also prevent rapid development of drug resistance as a result of indiscriminate use of the available anti-malarial drugs. The anti malaria Drug Policy which is drawn up to ensure appropriate use of the available anti-malaria drugs is as follows:

a. *Chloroquine*

Chloroquine is the first drug of choice for the treatment of uncomplicated malaria cases in all health facilities nation wide. Chloroquine is also recommended for prophylaxis especially in first and second pregnancies. Following repeated reports of treatment failures with chloroquine, a survey was conducted in 1998 to assess the efficacy of chloroquine using the updated WHO protocol. Chloroquine according to WHO guidelines should still remain the first line drug of choice.

b. *Sulfadoxine & Pyrimethamine (Fansidar)*

Fansidar is the second line drug for the treatment of uncomplicated malaria cases that have failed to respond to therapeutic doses of chloroquine in health care facilities.

c. *Quinine*

Quinine should be strictly reserved for the treatment of severe malaria cases in health care facilities. It should be used for cases that are resistant to chloroquine, Fansidar, and the non-immune individual not responding to chloroquine. Its use must be restricted to health care facilities, where intravenous drug administration preferably in dextrose solution can be properly supervised and cardiac abnormalities monitored.

d. *Others*

Other anti-malarial drugs like **amodiaquine (Camoquin); Mefloquine, Primaquine, halo-fantrine (halfan)** are not presently recommended by the Ministry of Health and Sanitation and their importation into the country will require special approval by the Pharmacy Board.

SUPPLY AND DISTRIBUTION OF ANTI-MALARIAL DRUGS

27. The first, second and third line drugs for the treatment of the various forms of malaria will be made available to all military health care facilities through the Joint Medical Unit Pharmacy Department. Adequate supply of the necessary drugs will be provided.

DRUG POLICY UPDATE

28. The selection of anti-malarials for the treatment of malaria cases in Sierra Leone takes into account the recommendation of the World Health Organisation Expert Committee on Malaria. There is also a laboratory back up for the monitoring of malaria parasites' sensitivity to chloroquine in established sentinel sites. The information collected will be used to provide the necessary data for drug policy up date.

CONCLUSION

29. Malaria infection heads the list as the most formidable of all endemic diseases in this country. Previous and current records at JMU show that malaria has the highest morbidity rate in the RSLAF compared to all recorded communicable diseases.

It accounts for about 48% of the total out-patient sick parade in all RSLAF health facilities countrywide. It also accounts for about 50 – 60% of children's hospital admissions and 87% prevalence rate of anaemia among pregnant women.

30. The misconceptions about the causes of malaria, backed by the use of various anti-malarial drugs in self-medication among troops and their dependants also account for its endemicity.

Protocols on appropriate diagnosis and case management/treatment of malaria at all levels have been carefully devised in this policy to "roll back" malaria in the RSLAF, so as to reduce the high morbidity and mortality rates of this disease among troops. The Defence Medical Services campaign to "roll back" malaria in the RSLAF can only be achieved through the implementation of this policy by all concerned.

Workshops will be conducted at JMU and Bde HQs prior to introduction and distribution of this Policy Document to all Defence Medical Services health workers and Commanders.

ANNEX A TO
D/MOD/10002
DATED 22 OCT 02

MALARIA TREATMENT GUIDELINES FOR RSLAF HEALTH CARE FACILITIES

Uncomplicated Malaria

1. The drug of choice for the treatment of every first episode of fever suspected to be malaria in all health care facilities is chloroquine. The preferred route of administration is oral. The patient should be advised to come back to the health facility two days after initiation of drug therapy, if symptoms persist.

Injection chloroquine does not have much advantage over oral chloroquine and it should be given only when patients cannot take the drugs orally due to either persistent vomiting or other reasons.

2. The injection should be administered at health care facilities by trained nurses. Oral chloroquine should be given as soon as patient can swallow to complete the recommended dose. Chloroquine can also be administered as crushed tablets or syrup through a naso-gastric tube to unconscious patients when intravenous facilities are not available.

ANNEX B TO
D/MOD/10002
DATED....OCT 02

THERAPEUTIC/TREATMENT FAILURE

Patients may fail to respond to treatment with chloroquine or other anti-malarial drugs for various reasons, such as:

a. fever from causes other than malaria

b. inadequate treatment/non compliance

c. vomiting of initial treatment medication

d. poor quality/substandard drugs

e. parasite resistance to drug

The treatment of such a patient whose condition does not improve after receiving adequate doses of chloroquine should, depending on the severity of the illness, level of the health care facility, the competence of the health care provider and the availability of laboratory facilities. Treatment with chloroquine should be repeated when there is uncertainty about the adequacy of earlier treatment.

3. It would be necessary in all cases to confirm through blood film the diagnosis of malaria before proceeding. However when this is not possible, an alternative anti-malarial drug should be started and the patient must be referred to a facility where the diagnosis can be confirmed. This is particularly important if the patient's clinical condition is worse than when originally seen.

Before referral, the severely ill patient should be give quinine intramuscularly.

Sulfadoxine –pyremethamine **(Fansidar)** should be used in mildly or moderately ill-patients. Severely ill-patients should be treated with parenteral quinine.

ANNEX C TO
D/MOD/10002
DATED....OCT 02

SEVERE MALARIA

Is a medical emergency. **Quinine** is the drug of choice for treatment.
In cases when the patient needs to be transported to another health care facility and intravenous treatment is not possible, an intramuscular dose of quinine should be given before transportation. Treatment should be continued until patient gets to the referral centre.

A blood smear should be obtained where possible before commencement of quinine and send smear along with the patient to the referral centre.

. In cases where quinine is not available, give a dose of chloroquine orally if patient can swallow and refer to the nearest health care facility, preferably to a hospital. Injectable chloroquine can be given if patient cannot take orally due to persistent vomiting or other reasons. Where referral is not possible, the injection should be continued but oral chloroquine should be given as soon as the patient is able to swallow. Intravenous chloroquine should be administered only in hospital and never as a bolus injection but as a continuous infusion.

Quinine should be used for malaria that is resistant to chloroquine and sulfadoxine-pyrimethamine (Fansidar). It should be used for severely ill-patients and for the non-immune individuals not responding to chloroquine. It must be restricted to health care facilities, where intravenous drug administration, preferably in dextrose solution can be properly supervised and cardiac abnormalities and blood sugar levels monitored.

NOTE: **ALL CASES DIAGNOSED AS SEVERE MALARIA SHOULD BE REFERRED FOR HOSPITALIZATION**