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# **Swaziland National Malaria Elimination Policy**

**Version 1.0  
May 2010**



**Kingdom of Swaziland  
Ministry of Health  
National Malaria Control Programme**

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## ACRONYMS

ACT	artemisinin-based combination therapy
AIDS	acquired immunodeficiency syndrome
AL	artemether lumefantrine
BCC	behaviour change communication
DDT	dichlorodiphenyltrichloroethane
DEET	N,N-Diethyl-meta-toluamide
G6PD	glucose-6-phosphate dehydrogenase
GIS	Geographic Information Systems
HIV	human immunodeficiency virus
HMIS	Health Management Information Systems
HRP-II	histidine-rich protein II
IEC	information, education, communication
IPTp	intermittent preventive therapy for pregnancy
IRS	indoor residual spraying
LLIN	long-lasting insecticide-treated nets
M&E	monitoring and evaluation
NMCP	National Malaria Control Programme
pLDH	parasite lactate dehydrogenase
RDT	rapid diagnostic test
SADC	Southern African Development Community
WHO	World Health Organisation

## FOREWORD

May 2010

In 2007, the Swaziland Ministry of Health initiated a malaria elimination campaign, joining the neighbouring countries of Botswana, Namibia, and South Africa to realise the vision of a malaria-free southern Africa. The campaign requires considerable scale-up of existing control interventions as well as the introduction of elimination-specific programmes, particularly in accurate diagnosis, robust surveillance and ongoing monitoring and evaluation. As evidenced by the experiences of other countries around the world, malaria elimination requires a reorientation in policies, practices, and activities. In recognizing these important changes in malaria programming, the Ministry of Health established this Malaria Elimination Policy to set forth a common set of malaria policies in the country.

The Malaria Elimination Policy is based on global and regional recommendations and best practices and is aligned to World Health Organisation (WHO) and the Southern African Development Community (SADC) malaria elimination frameworks. The policies herein defined are applicable to all levels of the health sector, all key partner organisations and malaria stakeholders. The National Malaria Control Programme is responsible for overseeing the implementation of the policies through partner coordination and implementation of malaria elimination interventions. The newly created Swaziland Malaria Elimination Advisory Group (MEAG) will ensure implementation through regular monitoring of policy implementation and revision.

Through alignment in malaria policies, the Swaziland Ministry of Health and its partners will be better placed to achieve malaria elimination in the country.

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The Honourable Benedict Xaba  
Minister of Health  
Swaziland Ministry of Health

## SECTION 1. INTRODUCTION

This document outlines Swaziland's malaria policies on surveillance, case management, and vector control and prevention as part of its elimination programme. Based on the WHO's malaria elimination manual and SADC malaria elimination strategic framework, these policies establish procedures, systems, and activities that are required to achieve the elimination goal. The policies will be implemented at all levels of the health system by the Swaziland government, partners, and health professionals. The Malaria Elimination Advisory Group (MEAG) will regularly review adherence to the policies throughout the health system and update the document as needed.

### 1.1. Malaria Elimination in Swaziland

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Since 2002, the Kingdom of Swaziland has made significant progress in reducing malaria morbidity and mortality. Between 2002 and 2007, malaria incidence declined from 49.5 to 18 cases per 1000 of the population at risk. With this progress, Swaziland has already exceeded the Millennium Development Goal on malaria and Roll Back Malaria's Abuja targets. As a result, the Southern African Development Community (SADC) and the African Union identified Swaziland as a candidate for malaria elimination by 2015, a goal that has since been adopted by the country.

In July 2008, Swaziland developed its Malaria Elimination Strategic Plan, which aims to strengthen key malaria interventions in Swaziland to prepare the country for elimination. In line with World Health Organisation (WHO) guidelines, the programme aims to reduce malaria morbidity and mortality to 1 malaria case per 1000 population at risk and malaria deaths to less than 0.25 per 1000 cases by 2013, enabling the programme to transition from the control phase to pre-elimination phase. According to the WHO, malaria elimination is achieved when there are zero locally transmitted malaria cases for three years.

As defined in the National Malaria Elimination Strategic Plan for 2009 to 2013, Swaziland's plan to transition from a control programme to an elimination programme focuses on four major intervention areas. These include: (1) effective case management through definitive diagnosis and proper case management, (2) integrated vector management, particularly in combining the use of indoor residual spraying (IRS) and long-lasting insecticide-treated nets (LLINs), (3) a strong epidemiological and entomological surveillance system, and (4) a comprehensive information, education, and communication (IEC) campaign. These activities began in July 2009.

### 1.2. Malaria Epidemiology in Swaziland

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In Swaziland, malaria transmission is most prevalent along the eastern border, particularly in the Lubombo region. It is estimated that 30% of the population, or approximately 366,900 people, live in malaria-endemic areas. Transmission occurs in the rainy season between November and May with a peak in February and March and occurs mainly in the *lowveld* region of the country. However, malaria transmission is unstable and closely related to the level of rainfall, which varies considerably each year. The unstable and highly seasonal nature of malaria transmission in Swaziland indicates that acquired immunity by populations at risk to malaria is negligible and all age groups are therefore at risk of developing clinical malaria disease. *Plasmodium falciparum* is responsible for over 99% of malaria cases in Swaziland. Historical data suggest that the main vectors are *Anopheles arabiensis* and *Anopheles funestus*.

### 1.3. Policy Direction and Guiding Principles

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Malaria elimination is the interruption of local malaria transmission despite a continued presence of malaria vector mosquitoes and importation of parasites from abroad through international travel and migration. To achieve the objective of malaria elimination, policies must seek to interrupt transmission through detecting and treating all malaria cases before onward transmission and eliminating transmission foci. The policies defined in this document are aligned to these technical requirements.

**TECHNICAL REQUIREMENTS OF MALARIA ELIMINATION** – In order to achieve elimination, the malaria programme must: (1) detect and treat all malaria infections, symptomatic and asymptomatic, to deplete the existing parasite reservoir and to avoid onward transmission and (2) identify all residual transmission foci and cover with appropriate vector control measures to reduce receptivity.

Swaziland's malaria elimination policies are also based on the following guiding principles, key to an elimination programme:

- **Individuals of all demographics are at risk for malaria** – Under an elimination setting, the coverage of vector control and prevention interventions will be expanded to all households in the malaria-endemic areas. Health promotion and information, education, and communication (IEC) will target all individuals in the population.
- **Increased focus on every last malaria case** – In an elimination programme, every case must be targeted. However, a reduction in overall malaria cases will lead to decreased attention to the disease. To attain the malaria elimination goal, the health system must increase its vigilance for malaria to capture and treat every last case and to prevent onward transmission.
- **Decisions and actions based on data and evidence** – A malaria elimination programme must be based on accurate, up-to-date data on vector and parasite behaviour, transmission patterns, case data, and health-seeking behaviour of those at risk for malaria. Routine record keeping and reporting as well as monitoring and evaluation are therefore important components of the malaria programme. The data gathered and evidence collected will then be used to identify foci of transmission and inform policies and implementation of evidence-based data-driven targeted interventions.

## SECTION 2. SURVEILLANCE POLICIES

### 2.1. Passive Surveillance Policy

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#### Policy

<b>Policy Statement: Passive Disease Surveillance</b>
<ul style="list-style-type: none"><li>• Malaria is a notifiable disease in Swaziland</li><li>• All malaria cases must be reported promptly to the National Malaria Control Programme</li><li>• All malaria deaths must be reported within 24 hours to the National Malaria Control Programme</li></ul>

#### Background

As malaria is a notifiable disease in Swaziland, the notification of all malaria cases to the NMCP is mandatory. All health facilities are required to routinely report all malaria cases on a weekly basis. As part of weekly reporting, health facilities must complete “Positive Malaria Case Report” for each positive malaria case to trigger the active surveillance system. For all malaria deaths, health facilities are required to immediately notify the NMCP to ensure appropriate follow-up may be undertaken. Currently, health facilities report malaria cases directly to the NMCP, but in the future, health facilities will report to the Health Management Information Systems (HMIS) via routine data collection methods.

#### Policy Implications

The Swaziland Ministry of Health shall:

- Establish a reporting system for all health facilities to routinely report malaria cases to central data repository
- Capture the number of confirmed malaria cases in a central disease surveillance database
- Provide training on passive surveillance procedures to all health facilities

The Swaziland NMCP shall:

- Maintain a central malaria database that captures all relevant information on malaria cases
- Monitor and track all malaria cases in time and space using Geographic Information Systems (GIS) to predict and prevent outbreaks and/or resurgence
- Investigate all malaria cases and deaths as appropriate

Health facilities in Swaziland shall:

- Report all confirmed malaria cases via routine reporting process on a weekly basis
- Complete a “Positive Malaria Case Report” for all positive malaria cases and return reports to on a weekly basis
- Immediately report all confirmed malaria deaths

## 2.2. Active Surveillance Policy

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### Policy

#### Policy Statement: Active Disease Surveillance

- All patients who are diagnosed with malaria and provided with antimalarial treatment are followed up within 7 days of drug administration
- Residents and overnight visitors of households within 1 km of all identified malaria patients are tested for malaria within 7 days of malaria case identification

### Background

**ACTIVE CASE INVESTIGATION** – Every confirmed case reported by the health facilities will trigger an active case investigation, which will occur at the patient’s home within 7 days of the patient’s presentation date, subject to receipt of the results. During the investigation, a surveillance agent will visit the patient, question the patient on their treatment outcomes and travel history, and take a second blood smear for confirmation of efficacious treatment. The primary purpose of active case investigation is to identify whether an index case that presented at health facility was imported or locally transmitted.<sup>1</sup> A high concentration of locally transmitted cases may indicate the need for strengthened vector control interventions and health promotion. Similarly, a high number of imported cases may result in active case detection within high-risk communities as well as an expanded malaria education for travellers at designated areas, including border posts. A secondary purpose of active case investigation is to confirm effective treatment of the patient, thus minimising chances of resistance and further transmission.

**ACTIVE CASE DETECTION** – The purpose of active case detection is to identify malaria cases within the communities before they cause onward transmission. There are two types of active case detection: reactive and proactive. In reactive active case detection, a community is tested for malaria in response to a confirmed case. In Swaziland, the surveillance agent will use rapid diagnostic tests (RDTs) to screen all individuals residing within 1 kilometre of every confirmed case. All individuals testing positive for malaria will be transferred to the nearest health facility for treatment. Proactive active case detection occurs when there is suspected malaria transmission within a high-risk community (e.g., clusters of travellers/migrants from malaria-endemic countries) or area. In such cases, the NMCP will identify a specifically defined area for active case detection. Surveillance agents will then be dispatched to the detection area to screen the residents for malaria.

### Policy Implications

The Swaziland NMCP shall:

- Establish surveillance sites around the country, from which active surveillance programmes will be based
- Provide training for surveillance officers on active surveillance systems
- Follow up on confirmed malaria cases within 7 days of drug administration to ensure the

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<sup>1</sup> According to the WHO, a local case is a malaria case in which “the origin of which from local transmission cannot be disproved. It includes delayed first attacks of *P. vivax* due to locally acquired parasites with a long incubation period.” An imported case is a case in which “the origin of which can be traced to a known malarious area outside the country in which the case was diagnosed.”

- effectiveness of treatment and identify whether case was locally transmitted or imported
- Test all residents and visitors living within 1 km of all confirmed malaria cases for malaria using a RDT; for those testing positive, transport the patient to the nearest health facility for appropriate diagnosis, treatment, and counselling
- Monitor and track all investigated and detected malaria cases to prevent outbreaks
- Educate the community and healthcare workers on the active surveillance programme
- Regularly share surveillance data with regional health teams and health facilities
- Revise and improve the active surveillance programme on an annual basis

## 2.3. Outbreak and Epidemic Preparedness and Response (EPR) Policy

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### Policy

#### Policy Statement: Outbreak and Epidemic Preparedness and Response (EPR)

- All outbreaks and epidemics, as identified by the *Swaziland Malaria Surveillance Programme Manual*, must be identified within 24 hours on onset
- All outbreaks and epidemics must be responded to within 48 hours of identification with vector control, case management, and case monitoring interventions

### Background

In settings where there is a strong active surveillance system (i.e., all confirmed malaria cases are systematically followed up with case investigation and detection), outbreaks and epidemics should rarely occur. Active case detection system interrupts local transmission and therefore outbreaks by pre-emptively screening for cases in nearby households and treating all positive cases. However, outbreaks are possible when malaria patients fail to present at health facilities at early stages of the disease, patients are misdiagnosed, and/or ineffective drugs are used to treat positive cases. Also, when the active surveillance system slows or breaks down, there is also potential for outbreaks. As a result, there will be ongoing outbreak and epidemic monitoring in case of failures in case management and/or surveillance. Preventing outbreaks or epidemics is a fundamental component of an elimination programme, as such occurrences prove a failure to eliminate.

In Swaziland, an outbreak can be identified in two ways:

- **Meeting outbreak thresholds:** The number of malaria cases surpasses the established outbreak threshold at a health facility, inkhundla, regional, or national level<sup>2</sup>
- **Identification of secondary cases:** The number of secondary cases that are identified as part of reactive case detection surpasses three

The Malaria Surveillance Team will work with health facilities and regional health teams to ensure ongoing monitoring of malaria outbreak through the passive surveillance system. Whenever an outbreak is identified, appropriate action in the form of active screening, vector control measures, and community health promotion will be taken. Specific outbreak and epidemic procedures are outlined in the *Swaziland National Malaria Epidemic and Response Guidelines*.

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<sup>2</sup> The thresholds are calculated based on trends in health facility incidence in previous years. Currently, only national thresholds are available. The NMCP will work with technical experts to determine outbreak thresholds at lower levels.

## Policy Implications

The Swaziland NMCP shall:

- Monitor and track malaria cases and deaths to predict and prevent malaria outbreaks
- Maintain EPR stockpile of case management and prevention supplies
- Educate stakeholders involved in malaria outbreak and epidemic response on malaria EPR procedures

## SECTION 3. CASE MANAGEMENT POLICIES

### 3.1. Malaria Diagnosis Policy

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#### Policy

##### Policy Statement: Malaria Diagnosis

- All patients suspected of malaria infection will be parasitologically confirmed, using accurate rapid diagnostic test (RDT) or microscopy examination, before treatment is given
- **Healthcare workers will test all patients with a fever of 37.5°C or above and/or with a history of fever in the past week**
- Testing will be provided free of charge to all patients at all health facilities

#### Background

Prompt and accurate diagnosis is part of effective disease management. Previously, treatment of malaria in Swaziland was based mostly on clinical signs and symptoms. This was due to a higher proportion of malaria-induced fevers, the low cost of antimalarial drugs, and the lack of diagnostic capability at the clinic level. However, symptom-based clinical judgment alone is no longer appropriate. Clinical presentation of malaria is non-specific and may mimic many other diseases. Furthermore, in low transmission settings such as Swaziland, the majority of febrile illness will not be due to malaria and presumptive diagnosis would result in overtreatment of malaria, misdiagnosis, and/or mismanagement of the actual aetiology.

In accordance with World Health Organisation (WHO) recommendations for low transmission settings, the new malaria diagnosis policy in Swaziland is to conduct a parasitological diagnostic test (i.e., a test confirming the presence of malaria parasites) on *all* suspected malaria cases. The commonly used methods of parasitological diagnosis are microscopy and malaria rapid diagnostic tests (RDTs). One or both of methods will be available at all health facilities in Swaziland.

**MICROSCOPY** – Examination of blood smears by light microscopy is the “gold standard” for malaria diagnosis. When microscopy is properly conducted, it provides a high degree of sensitivity and specificity. In addition, it allows for quantification of malaria parasites and identification of infecting species. Expert microscopic examination of stained blood smears has a lower limit of detection of approximately 100 parasites/ $\mu\text{l}$ .<sup>3</sup> However, in a field setting in a low-endemic country, such a detection level is difficult to achieve, as laboratory technologists conduct malaria parasite readings only occasionally.

**RAPID DIAGNOSTIC TESTS** – Malaria RDTs are immunochromatographic tests that detect specific antigens produced by malaria parasites that are present in the blood of an infected or recently infected individual. Due to the low prevalence of non-*P. falciparum* malaria in Swaziland<sup>4</sup>, RDTs that detect *P. falciparum* Histidine Rich Protein II (HRP-II) antigens will be used to diagnose malaria.<sup>5</sup> HRP-

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<sup>3</sup> WHO, 2006.

<sup>4</sup> According to the 2007 NMCP Annual Report, 99% of the malaria parasites are *P. falciparum*.

<sup>5</sup> The most commonly used tests today are based on the detection of Histidine Rich Protein II (HRP-II), which is specific for *P. falciparum*. Other tests detect pan-specific or species-specific parasite lactate dehydrogenase (pLDH) or pan-specific aldolase antigen.

II RDTs have a lower limit of detection of approximately 200 parasites/ $\mu\text{l}$ ,<sup>6</sup> which is similar to the detection limits of field microscopy. Because the RDT are easy to use and provide rapid results, it is an important screening tool in health facilities where microscopy is not available and during active case detection in the field.

### Policy Implications

The Swaziland Ministry of Health shall:

- Ensure RDTs are available at all health facilities in Swaziland at all times
- Track RDT inventory at facility and central levels to prevent stock-outs
- Re-evaluate the choice of diagnostic on an annual basis

The Swaziland NMCP shall:

- Implement a quality assurance program to ensure high quality diagnostics and proper, accurate diagnosis at all health facilities
- Conduct training for all cadres of healthcare workers to ensure understanding of malaria diagnosis at all health facilities
- Conduct site visits to all health facilities at least twice a year to ensure healthcare workers are able to provide proper, accurate malaria diagnoses
- Provide education at the community levels to ensure the end user understand the importance of RDT usage

Healthcare workers in Swaziland shall:

- Understand proper usage of RDTs
- Participate in RDT quality assurance programmes as prescribed by the Ministry of Health
- Maintain a high level of microscopy skills
- Participate in microscopy quality assurance programmes as prescribed by the Ministry of Health
- Test patients with a malaria RDT and/or microscopy whenever there is a suspicion of malaria (i.e., patient has fever of 37.5°C or above or history of fever)
- Maintain accurate inventory records of RDT and other laboratory supplies and report accordingly to central levels

## 3.2. Antimalarial Treatment Policy

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### Policy

#### Policy Statement: Antimalarial Treatment

All patients diagnosed with malaria will be given free effective antimalarial treatment in accordance with the malaria drug policy.

- At the clinic level, healthcare workers must treat in accordance with RDT result and refer patient to a higher health facility if there is a suspicion of malaria in the presence of a negative test
- At the hospital and health centre level, a confirmatory test may be conducted if

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<sup>6</sup> WHO/FIND, 2008.

there is still suspicion of malaria after a negative test

- Malaria treatment should only be given when parasitologically confirmed. Treatment may be given without a positive test only under exceptional circumstances (e.g., in case of febrile coma) by a medical doctor.

### Malaria Drug Policy

#### *Uncomplicated Malaria*

- First-line treatment (including pregnant women in their 2<sup>nd</sup> and 3<sup>rd</sup> trimesters and lactating women): artemether lumefantrine (AL)
- First-line treatment for pregnant women in their 1<sup>st</sup> trimester: oral quinine
- Second-line treatment: oral quinine

#### *Severe and Complicated Malaria*

- Pre-referral treatment: intramuscular (IM) quinine
- First-line treatment: intravenous (IV) and IM quinine

## Background

For decades, chloroquine and sulfadoxine-pyrimethamine (SP) (Fansidar) have been used as the first-line and second-line treatment for malaria in Africa. Due to the emergence of drug resistance worldwide, the WHO no longer recommends the use of monotherapies as first-time treatment. The first-line and second-line treatment will change to artemether lumefantrine (AL) and oral quinine.

Non-*P. falciparum* cases are extremely rare if they occur at all. AL and oral quinine are effective against all malaria strains and therefore should be used for all malaria cases. For laboratory-confirmed *P. vivax* and *P. ovale* malaria cases, primaquine may also need to be prescribed, along with AL, to prevent the relapse of the disease. However, because primaquine is contraindicated in patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency, G6PD testing must occur prior to the prescription of the drug. Clinicians should contact the NMCP for guidance on the management of *P. vivax* and *P. ovale* cases if a case is identified.

**ARTEMETHER LUMEFANTRINE** – In accordance with WHO recommendations, the first-line treatment for uncomplicated malaria in Swaziland is AL, an artemisinin-based combination therapy (ACT). The drug will eliminate the malaria infection that results in disease from the body (asexual stage), which will prevent progression to severe malaria and reduce morbidity associated with malaria infection. The drug will also decrease the transmission of the disease to others by reducing the infectious reservoir. AL was also selected for its tolerability, low number of adverse effects, and the speed of therapeutic response.

**QUININE** – Quinine will be used as the first-line treatment for uncomplicated malaria in pregnant women, the second-line treatment for uncomplicated malaria, the pre-referral treatment for severe and complicated malaria, and the first-line treatment for severe and complicated malaria. Quinine has demonstrated to be an effective drug against all malaria species.<sup>7</sup> Due to its effectiveness, and long safety record in pregnancy its tablet form will be used as the first-line treatment for mild malaria in pregnant women in their first trimester. The safety of AL in pregnancy is still being studied, and until more data is available, oral quinine should be offered as first-line therapy to

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<sup>7</sup> WHO, 2006.

women with mild malaria who are in first trimester pregnancy.<sup>8</sup> AL is first-line therapy for women in their second and third trimesters and lactating women with mild malaria. IV quinine will be used for severe and complicated malaria, as it is the most potent drug and will have the greatest therapeutic benefit in patients that are severely ill.

To prevent onward transmission of malaria, all patients must be given appropriate treatment. All antimalarial drugs must therefore be given to patients free of charge to ensure patients of all socio-economic strata have access to proper treatment.

### Policy Implications

The Swaziland Ministry of Health shall:

- Ensure ACTs are available at all health facilities in Swaziland at all times
- Track ACT inventory at facility and central levels to prevent stock-outs
- Re-evaluate drug policies on an annual basis

The National Malaria Control Programme shall:

- Conduct training for all cadres of healthcare workers annually on drug policies
- Provide education at the community levels on malaria drugs
- Conduct ongoing drug efficacy monitoring to ensure effectiveness of the drugs
- Conduct ongoing pharmacovigilance to evaluate the safety of the drug
- Track treatment failures to inform drug policy decisions

Healthcare workers in Swaziland shall:

- Provide appropriate antimalarial drugs, based on the defined drug policy above, to all patients with confirmed malaria
- Counsel patients to seek early diagnosis and treatment for malaria whenever malaria signs and symptoms are identified

## 3.3. Chemoprophylaxis Policy

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### Policy

#### Policy Statement: Malaria Chemoprophylaxis

All travellers to areas and countries with moderate to high malaria transmission are recommended to take one of the following chemoprophylactic drugs.

- First-line prophylaxis: mefloquine
- Second-line prophylaxis (only for non-pregnant, non-elderly adults): doxycycline or atovaquone/proguanil

### Background

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<sup>8</sup> Over 1 000 doses of AL have been given to women during pregnancy in their second or third trimester without any adverse events in mother or child (WHO, 2006), but a formal clinical trial has yet to be documented.

All patients travelling to malaria-endemic area should be counselled to take precautions to prevent mosquito bites. As malaria-carrying mosquitoes typically bite humans between dusk and dawn, avoiding exposure during these times is recommended. Patients should be advised to be indoors and sleep in screened rooms or use insecticide-treated nets during these times. If outdoors, use of DEET as per the manufacturer's instructions on skin will decrease the risk of transmission.

The malaria chemoprophylaxis policy in Swaziland will only be applied to those travelling to or from areas of moderate to high malaria transmission domestically and internationally, with particular attention to vulnerable groups such as pregnant women, young children, and immunocompromised individuals. Intermittent preventive therapy for pregnant (IPTp) is not recommended for low-endemic settings such as Swaziland. Finally, all patients who travel to malaria-endemic areas should be counselled that if they develop fever, they should present to their health care facility promptly for a malaria diagnostic test. Early recognition and treatment of malaria will prevent serious complications.

Due to the resistance to chloroquine and SP in the neighbouring countries in southern Africa, neither can be prescribed as effective chemoprophylaxis.<sup>9</sup> Mefloquine should be recommended as the first-line prophylaxis for all adults and children. Doxycycline and atovaquone/proguanil should be recommended for use only when mefloquine is not available and only by non-pregnant, non-elderly adults. Note that atovaquone/proguanil is much more expensive than the two other forms of prophylaxis but has fewer side effects.

### **Policy Implications**

The Swaziland NMCP shall:

- Re-evaluate chemoprophylaxis policies on an annual basis
- Conduct training for all cadres of healthcare workers annually on chemoprophylaxis policies
- Provide education to travellers on chemoprophylaxis policies

Healthcare workers in Swaziland shall:

- Educate travelers on chemoprophylaxis use and personal protection while travelling
- Dispense chemoprophylaxis in accordance with the National Malaria Diagnosis and Treatment Guidelines

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<sup>9</sup> This is particularly important as a large population travels to Mozambique from Swaziland, and there is documented resistance to both drugs in Mozambique.

## SECTION 4. VECTOR CONTROL AND PREVENTION POLICIES

### 4.1. Indoor Residual Spraying (IRS) Policy

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#### Policy

##### **Policy Statement: Indoor Residual Spraying (IRS)**

- All households in areas of malaria transmission will receive free IRS treatment prior to the start of the malaria season
- Traditional structures will be treated with DDT, and modern structures will be treated with pyrethroid insecticide

#### Background

The Swaziland NMCP has conducted indoor residual spraying (IRS) in the communities at risk since 1954 as its main vector control strategy. The exercise, which typically takes place prior to the start of the malaria season, offers all households in the malaria-endemic region to spray all structures with the recommended insecticide. DDT has been used since the start of the IRS campaign, but pyrethroids were introduced in more recent years to accommodate modern structures.

#### Policy Implications

The Swaziland NMCP shall:

- Conduct IRS once a year prior to the start of malaria season to all households in the malaria-endemic region and conduct mop-off campaigns in case of identified shortfalls
- Conduct ongoing entomological surveillance and insecticide resistance monitoring to ensure insecticide efficacy and appropriate IRS coverage in the malaria-endemic regions
- Conduct ongoing surveillance of malaria transmission to plan IRS campaigns
- Re-evaluate insecticide policy on an annual basis
- Conduct community mobilisation campaigns targeting community leaders and homesteads to encourage acceptance of IRS

### 4.2. Long-Lasting Insecticide-Treated Nets (LLINs) Policy

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#### Policy

##### **Policy Statement: Use of Long-Lasting Insecticide-Treated Nets (LLINs)**

- All households in areas of malaria transmission receive free long-lasting insecticide-treated nets (1 net per 2 individuals)

#### Background

The World Health Organization (WHO) recommends the use of long lasting insecticide-treated nets (LLINs) as a vector control intervention for malaria-endemic regions as part of an integrated vector management strategy. LLINs are a special type of insecticide-treated net that remain efficacious up

to 3-5 years. The WHO recommends that countries target 100% coverage and achieve at least 80% in the malaria-endemic regions to have high impact on disease reduction.<sup>10</sup> Due to nonuse by some households, *all* households within malaria-endemic regions must be targeted during a mass LLIN distribution campaign to achieve the WHO-recommended coverage rate. In Swaziland, it is assumed that on average, two individuals share a bed. Therefore, nets will be distributed at a rate of one net per every two individuals in each household.

### Policy Implications

The Swaziland NMCP shall:

- Distribute LLINs to individuals residing in the malaria-endemic region as part of a door-to-door distribution campaign and conduct top-up campaigns in cases of identified shortfalls
- Conduct ongoing insecticide resistance monitoring to ensure efficacy of LLINs
- Conduct ongoing surveillance of malaria transmission to plan LLIN distribution campaigns
- Conduct community mobilisation campaigns targeting community leaders and homesteads to encourage regular and appropriate net usage and maintenance

## 4.3. Larviciding and Environmental Management Policy

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### Policy

#### Policy Statement: Larviciding and Environmental Management

- Select communities with vector breeding sites will receive larvicide and training on larviciding and environmental management prior to the malaria season

### Background

Larviciding is the application of insecticides, specifically larvicides, in water bodies that harbour vector larvae. By treating the water bodies, larval density decreases, resulting in a decreased vector population. However, studies have yet to confirm that larviciding has a direct impact on transmission reduction. In Swaziland, larviciding of all water bodies with mosquito larvae would be infeasible. Therefore, the larviciding program will be targeting areas where there is intense malaria transmission and there are large vector breeding spots. In such communities, the NMCP will provide support and resources to larvicide targeted water bodies.

### Policy Implications

The Swaziland NMCP shall:

- Conduct ongoing entomological surveillance to inform larviciding activities
- Provide larvicide to targeted communities that will conduct larviciding
- Train targeted communities on larviciding activities
- Conduct ongoing entomological surveillance and insecticide resistance monitoring to ensure efficacy of larvicides and larviciding activities
- Re-evaluate larvicide policy on an annual basis

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<sup>10</sup> World Health Organization presentation at Roll Back Malaria Global Fund Round 8 Mock Technical Review Panel. Nairobi, Kenya, May 2008.

## SECTION 5. CONCLUSION

### 5.1. Policy Implementation

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The Swaziland Ministry of Health, key malaria partners, and health professionals are responsible for implementing the malaria policies outlined in this document. All activities undertaken by the Swaziland government and its partners must be aligned to the defined policies. The National Malaria Control Programme takes responsibility for coordinating and educating partners to implement the policies and the policy implications.

### 5.2. Policy Monitoring and Revision

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The Malaria Elimination Advisory Group (MEAG) is an independent council of advisors, composed of key malaria stakeholders and partners, that meets on a regular basis to evaluate the effectiveness of the malaria policies, monitor the implementation of the policies, and revise the policies as appropriate. The National Malaria Control Programme and its partners will be responsible for ensuring accurate and updated data is provided to the MEAG prior to meeting in order for the group to effectively evaluate progress toward implementation of policies and policy implications. The group will also regularly review regional and global updates on malaria elimination policies and adapt them as appropriate for Swaziland.

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