

MALARIA CONTROL POLICY KWAZULU-NATAL

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TABLE OF CONTENT

1.	BACKGROUND	1
1.1.	Provincial profile	1
1.2.	The extent of the problem	1
2.	POLICY ON MALARIA	2
2.1.	Goals, objectives and strategy	3
2.2.	Vision	3
2.3.	Mission	3
2.4.	Core Values	3
2.5.	Objectives	3
2.6.	Strategy	4
3.	DISEASE MANAGEMENT	4
3.1.	Case definition	5
3.2.	Antimalarial drugs	5
3.2.1.	Chloroquine and Sulfadoxinepyrimethamine	6
3.2.2.	Quinine	6
3.2.3.	Registration, prouement and quality control	6
3.3.	Prediction, early detection and control of epidemics	6
3.4.	Preventive measures	7
3.4.1.	Vector control	7
3.4.2.	Environmental management	7
3.4.3.	Chemoprophylaxis	7
3.4.4.	Personal protection	7
3.5.	Integration into PHC	8
3.6.	Monitoring and evaluation	8
3.7.	Capacity building and operational research	8
4.	HEALTH EDUCATION OF COMMUNITIES	8
5.	PROGRAMME MANAGEMENT	9
6.	INSTITUTIONAL FRAMEWORK	9
6.1.	Provincial level	9
7.	MALARIA CONTROL POLICY RECOMMENDATIONS	11
8.	GLOSSARY	13

1. BACKGROUND

1.1 PROVINCIAL PROFILE

South Africa is on the southern fringe of the sub-Saharan Africa. KwaZulu-Natal occurs on the south eastern part of South Africa along the Indian Ocean. It boasts a total of 8 416 998 people. The population density in urban areas is 43.1% and 56.9% in rural areas. The literacy rate is at 77.1% and the employment rate is 60.9%. The proportion of the population under 4 years is 11.5% while the population between 5 and 9 is 12%. Women in the reproductive age group (15-49 years) constitute 27.4%. The cost of keeping a patient in a hospital is R348 and R43 at a clinic. Formal housing accounts for 48% only, while the rest is informal, traditional or other.

The province is divided into 7 health regions. Malaria has been reported in three regions i.e. Jozini, Ulundi and Empangeni. Malaria risk is high on the northeastern part of the province where it shares a border with Mozambique. Most malaria (53%) is imported or introduced from neighbouring countries i.e. Mozambique. Malaria occurs commonly in the low altitude areas (below 1000 metres); in rural areas and farms due to recruited labour force. Occasionally, limited focal transmission has developed in high altitude areas such as Nongoma and Mahlabathini of Ulundi region

1.2 THE EXENT OF THE PROBLEM

The human and financial resources, which are currently committed to malaria control activities, are large and when viewed in terms of the current disease incidence, this may at first glance be an "over capitalization" of resources. It is however this very effort and commitment of resources which is responsible for the annual incidence and has made KwaZulu-Natal have the best known control programme in the southern hemisphere. The fact that this was not the case is clearly illustrated by looking at the historical perspective of the disease. In 1932, the mortalities of KZN were estimated at in excess of 22 000 of a population at risk of 985 000. Malaria was notified in Durban, Port Shepstone and Umzinto in the south. Thus more than 2.2% of the population died of malaria in six months.

In the past, the malaria risk areas were at least five times larger. Over several decades, control measures have pushed back malaria to areas essentially located along the borders. This control has resulted in significant economic gains. Malaria remains a serious problem and with changes in vector behaviour and parasite resistance to drugs, the potential exists for resurgence in the former risk areas, should control measures be interrupted or discontinued. In addition to public health reasons, strong obligation to continue control measures exists.

There is no single formula for malaria control. While the uniqueness of the malaria situation in KwaZulu-Natal means that there are some differences in management and research, this policy statement is broadly in line with the recommendations made by the World Health Organization (WHO) in their Global Malaria Control Strategy (WHO, 1992) and the implementation of the Global Malaria Control Strategy (WHO, 1993).

This policy outlines the KwaZulu-Natal objectives for malaria control as developed by the Provincial Department of Health after consultation with the Provincial Malaria Advisory Group (MAG) and other interested parties and role players. The implementation of the policy is largely the responsibility of the Provincial Department of Health. Individual Key Result Areas drawn should be in line with the Provincial Department of Health policy. The detail of the plan must be coordinated between the various sections in collaboration with Provincial Malaria Control Programme, in the context of primary health care (PHC) approach.

It is emphasized that this policy document essentially addresses the maintenance of the status quo in respect of malaria control in KwaZulu-Natal. The malaria situation in KwaZulu-Natal has been virtually static for the past decade. In view of factors such as the increasing resistance of malaria parasites to antimalarial drugs and changes in vector behaviour, the situation has the potential to deteriorate as has been the case since 1996, if the control programme is continued as in the past, without allocation of increased resources. Exacerbating the situation has been the advent of a new South Africa, which has given rise to increased cross border movement.

To make further gains and achieve possible interruption of the malaria transmission in KwaZulu-Natal, innovative and aggressive approaches are required with increased resource allocation, the successful implementation of control measures in adjacent countries, as well as cross border involvement and collaboration over several years. Already, the Lubombo Spatial Development Initiative spearheaded by the Medical Research Council in collaboration with the Provincial Department of health and other role players like Swaziland and Mozambique is destined to have a positive impact on regionalisation.

2. POLICY ON MALARIA

The national policy on malaria provides the framework and environment within which the KZN provincial policy is drawn for sustainable malaria control in order to prevent mortality, reduce morbidity and minimize social and economic losses, thereby supporting the reconstruction and development programme.

2.1 GOALS, OBJECTIVES AND STRATEGY

To achieve the policy goal, the strategies listed here under will be adhered to.

2.2 VISION

To achieve optimal health status for all persons in KZN.

2.3 MISSION

To develop a sustainable, co-ordinated, integrated and comprehensive health system at all levels of care based on PHC approach through the DHS.

2.4 CORE VALUES

- ❑ Trust built on truth, integrity and reconciliation.
- ❑ Open communication, transparency and consultation.
- ❑ Commitment to performance.
- ❑ Courage to learn, changes and innovate.

2.5 OBJECTIVES

The objectives of the control programme are:

1. to reduce mortality and morbidity due to malaria among the KZN population in areas of high risk, by providing ready access of the population at risk to early diagnosis and prompt treatment at local level.

Specific objectives

- (1) Empower five identified health care facilities (clinics) in high risk areas with the capacity to offer effective case management for malaria, through training of health workers and provision of tools for definitive diagnosis and prompt treatment.

- (2) To reduce and keep the incidence of indigenous malaria at the lowest practical level through active and passive case detection. An incidence rate of 0.5 per thousand population at risk, judged by annual notifications.

2.6 STRATEGY

The basic technical elements of the strategy are:

1. To provide early diagnosis and prompt treatment of malaria cases.
2. To plan and implement selective and sustainable preventive measures, including vector control, on the basis of the malaria surveillance information.
3. To detect and predict epidemics early and to prevent or contain them.
4. To strengthen capacity in evaluation, basic and applied research in order to:
 - I. Promote the regular assessment of the malaria situation, in particular the economic determinants of the disease, and
 - II. Encourage improvements in the control of malaria.
5. To develop human resource capacity at all levels in the malaria control programme by appropriate training, motivation and other means.
6. Personal protection.(ITNs=Insecticide Treated Nets)
7. Assessment of the potential for integration of malaria into the PHC.

3. DISEASE MANAGEMENT

Early diagnosis and prompt, adequate treatment of uncomplicated as well as severe malaria is the primary objective for the prevention of mortality and the reduction of morbidity.

3.1 Case definition

- a. **Malaria case:** A person who undergoes screening with a rapid test or taken a blood smear and found positive.
- b. **Uncomplicated malaria:** A person presenting with a history of fever or having fever (axillary temperature $>35.5^{\circ}\text{C}$ and $<41.0^{\circ}\text{C}$), rigors and headache and confirmed as above.
- c. **Therapeutic failure:** Worsening of symptoms within the first three days after starting treatment, or continuing symptoms, more than 72 hours after initiation of drug therapy. Such failure should only be confirmed by laboratory evidence of parasite presence.
- d. **Severe malaria:** A patient presenting with delirium, confusion, unrousable coma (cerebral malaria), convulsion/seizures, severe normocytic anaemia, renal failure, pulmonary oedema, hypoglycaemia, shock, acidosis, malarial haemoglobinuria, jaundice, hyperparasitaemia etc.

Note: In KZN, the detection of malaria cases is done via two processes, namely active and passive detection. Active cases are detected by the MCP when visiting homesteads on a randomized screening process while passive detection is when suspects voluntarily visit health institutions. Active cases are detected through the following processes i.e. Active Surveillance, suspected cases, Mass Blood Examination, Special Blood Surveys (at border posts) and epidemiological investigation. Treatment should be administered by approved and adequately trained personnel.

3.2 Antimalarial drugs

This aims at regulating the rational use of antimalarial drugs in the Province for the management of all forms of malaria and prevent the development and spread of drug resistance. The efficacy of recommended drugs will be monitored continuously at selected sentinel sites (Ndumu and Mkanisdrift). Based on the findings, policy will have to be reviewed and updated if necessary.

3.2.1 Chloroquine and Sulfadoxine-pyrimethamine (Fansidar® SP)

First therapy for the treatment of uncomplicated malaria in all health facilities both government and private. The drugs will remain under prescription by qualified health workers.

3.2.2 Quinine

Quinine should be reserved for the treatment of severe malaria in health facilities by trained health workers.

3.2.3 Registration, procurement and quality control

Registration and quality control of antimalarial drugs is the responsibility of the National Drug Authority after consultation with the Malaria Control Programme. Registration shall only be granted if there is enough evidence of efficacy. The National Drug Authority will perform analytical tests on antimalarial drugs, carry out on spot inspection on bulk drugs and premises of production or storage as well as licenses of operation.

3.3 Prediction, early detection and control of epidemics

The ability to predict, detect early and control malaria epidemics is an essential component of the MCP, forecasting epidemic is based on analysis of information on the following:

- a. Weekly total of 75 cases at any time between October and February is predictive of an epidemic in excess of 2 000 malaria cases.
- b. An epidemic year is likely to be followed up by another year for three consecutive years. (Due to an increase in the parasite pool).
- c. Assessment epidemiologically of epidemic prone areas and areas outside control.
- d. Climate factors.
- e. Development projects i.e. pre and post flooding of Pongola dam.
- f. Malaria vector bionomics.
- g. Population migration.

Note: an epidemic preparedness plan already exists and should be reviewed annually. Strategies that entail the epidemic response are already laid down and should be followed strictly.

3.4 Preventive measures.

3.4.1 Vector control

Indoor residual spraying with insecticides remains the mainstay strategy for control of malaria in KwaZulu-Natal and has been very successful in reducing vector prevalence and longevity.

3.4.2 Environmental management

Environmental management is an integral part of MCP and has been used successfully in high-risk areas such as Mamfene (around Makhathini irrigation scheme). This has to be pursued at all costs through implementation of the following strategies:

- ❑ Improvement of sanitation in rural areas.
- ❑ Although biological agents have not been utilized, there is room for the implementation of this strategy.
- ❑ Larvicides.

3.4.3 Chemoprophylaxis

Non-immune visitors only

3.4.4 Personal protection

Personal protection from mosquito bites play a key role in the reduction of transmission. According to the research carried out by MCP (1996-1999) there is substantial evidence that insecticide treated nets contribute significantly to the reduction of malaria-associated morbidity and mortality. The MCP is already committed to the promotion of ITNs as a supplementary control measure.

Strategies to be followed:

- Development of guidelines on personal protection.
- Community mobilization for man-mosquito contact reduction.
- Encouragement of partnerships and support with private sector.

3.5 Integration into PHC

The process of integration started in 1999. Jozini district was earmarked for a pilot project. The project will be replicated in other malaria districts such as Richards Bay/Empangeni district and Ulundi.

3.6 Monitoring and evaluation

Monitoring and evaluation are essential components of MCP aimed at:

- Measuring progress and achievements
- Early detection of problems and solutions
- Provision of necessary information for policy review and re-planning
- Guide the allocation of resources.

3.7 Capacity building and operational research

Capacity building in programme management, resource mobilization and coordination of activities are crucial for a sustainable MCP. KZN MCP has in the past worked with the Medical Research Council in Durban for capacity building and applied research. Research carried out is programme driven and the material is disseminated widely. The MCP is intending drawing a research agenda.

4. HEALTH EDUCATION OF COMMUNITIES

The malaria control programme depends on the cooperation and involvement of the community. Communities should be consulted and educated in the use of preventative measures and available services, with special emphasis on school children and the training of teachers. Educational information should be developed for dissemination to prospective travellers and travel agents, as well as to population at large by the mass media. Education materials should be drawn up by both provincial and national Departments of Health so that the material is relevant to the recipients.

5. PROGRAMME MANAGEMENT

The KZN Malaria Co-ordinator at the helm of the MCP management together with the Provincial Malaria Advisory Group and the core group of experts. Management entails a continuous cycle of planning, implementation, evaluation and replanning.

6. INSTITUTIONAL FRAMEWORK

Owing to the fact that malaria devolution has been introduced and that malaria does not concern the health sector alone, it becomes of cardinal importance that a strong institutional framework is established at various levels. This, it is perceived, should enhance the advocacy for and intersectoral collaboration, coordination and management of malaria control. This Institutional framework consists of the following:

6.1 Provincial level

The MCP under the environmental health directorate is responsible for planning, monitoring, coordination, resource mobilization and evaluation of malaria control activities. This will be realized through a core group of expertise and the unit will be composed of the following:

- ❑ Case management
- ❑ Information, education and communication
- ❑ Epidemiology, research and data management
- ❑ Finance and administration

As malaria devolution takes shape, the core group should assist the districts in the development and implementation of their own malaria plans. The unit is also responsible in liaison with other organizations locally and internationally to enhance information exchange.

A Provincial Malaria Advisory Group will be set up. The main role of this body will be to advise the MCP on the policy and technical issues. Other functions include advocacy promotion, information sharing link initiatives, enhancing integration and resource mobilization. The membership of the MAG will be made up of senior MCP members, Communicable disease, Military, Laboratory, District Health and Research. This body serves as a link between Provincial and National Malaria Advisory Group.

7. MALARIA CONTROL POLICY RECOMMENDATIONS

1. The emergence of Chloroquine resistance is already widespread with high levels of treatment failure and for Fansidar, resistance and treatment failure are already becoming prevalent and are expected to increase rapidly. This has given rise to the treatment regimen for malaria being changed from monotherapy of Fansidar to a combination therapy of Fansidar and chloroquine, as a short term measure until alternative drugs are registered for use in the country. Finalisation of the process of registering the new alternative drugs should be expedited.
2. The capability of prediction of malaria cases in subsequent years after 1996 should be governed by consecutive annual updates of the KwaZulu Natal prediction model (Review of 1996 model).
3. The efficacy and cost effectiveness of indoor residual spraying should be evaluated and re-considered in relation to alternative methods that are less costly and easier to organize, such as community wide use of impregnated bednets, and that produce long – lasting improvement, such as elimination of breeding sites.
4. The insecticide of choice for malaria control is deltamethrin which is reportedly also used significantly by farmers in the malarious areas of the Province. The great potential for the development of resistant mosquitoes to deltamethrin, compromising the effectiveness of the malaria control programme should be investigated. Protection of insecticide used for malaria control against development of mosquito resistance should be promoted in collaboration with the Agricultural Sectors, through rational and separate use of different insecticides for farming and malaria control purposes.
5. The seasonal indoor house spraying programmes should be undertaken by casual labourers appointed on contract basis to replace permanent spraymen on the fixed staff establishment. Sufficient funds should always be made available in the imprest account for payment of casual labourers appointed on seasonal basis.
6. The alternative vector control methods, which are more simpler and cheaper to allow for decentralisation and more involvement of district health services and communities should be increasingly promoted.

7. Personal protection offers greatest potential for significant protection against infection to individuals and, could also have an impact on disease transmission in communities where a large proportion of people use bednets, protective clothing and repellents.
8. It is essential to strengthen and sustain the capability of the first level health care facilities to carry out prompt and correct diagnosis and appropriate treatment of malaria cases necessary for effective case management.
9. Significant progress being made towards development and expansion of diagnostic and treatment capabilities at the first level health care facilities, should be coupled with corresponding gradual decrease of active surveillance activities of the malaria control programme. Decentralisation and integration of identified malaria control activities with the district health services is intended to improve the sustainability of malaria control while allowing substantial savings in financial input and in staff costs.
10. The malaria control programme should be regularly reviewed at least every five years to take stock of weaknesses and strengths of the programme in order to take timeous corrective actions.
11. A considerable effort is required for accelerated regional and intersectoral collaboration and cooperation in order to obtain the active participation of the relevant neighboring countries, sectors and stake holders to meet the challenges posed by malaria.
12. Development and sustainment of public and private partnerships are essential for the promotion of effective advocacy on the public health importance of malaria and possible provision of supplementary resources for malaria control programme.

8. GLOSSARY

Definition and meaning of terms used in the text of the policy document.

Active case detection– When malaria control personnel visit individuals in a malaria risk area to identify those with possible malaria symptoms and to collect blood smears.

Case fatality rate – Usually expressed as a percentage of the number of persons diagnosed as having a specified disease who die as a result of that illness.

Chemoprophylaxis– The administration of a drug as protection or prevention against a disease.

Effectiveness– The extent to which a specific intervention, procedure, regimen or service, when deployed in the field, achieves its objective.

Efficiency– the effects achieved in relation to the effort expended in terms of money, resources and time.

Epidemiological surveillance– The collecting of information in order to take early appropriate action. The continuing watchfulness of all aspects of occurrence and spread of a disease that are pertinent to effective control. Included are systematic collection and evaluation of (1) morbidity and mortality reports, (2) special reports of field investigations of epidemics and of individual cases, (3) isolation and identification of infectious agents by laboratories, (4) data concerning the availability, use and untoward effects of drugs, vaccines and toxoids, immunoglobulin, insecticides and other substances used in control, (5) information regarding levels of immunity in sections of the population and (6) other relevant epidemiologic data. A report summarizing these data should be prepared and distributed to all persons involved and others with a need to know the result of the surveillance activities. The procedure applies to all levels of public health from local to International.

Evaluation– The systematic collection and application of data to assess the effectiveness and or efficiency of a (control) programme and to guide the allocation of programme resources.

Goal– The general, long-term aim of any programme, (including a health programme) including its social and economic benefits.

Health education– The process by which individuals and groups develop habits conducive to the promotion, maintenance or restoration of health.

Incidence– The number of instances of new cases of illness commencing or of persons falling ill, during a given period in a specified population.

Indicator– An easily measurable phenomenon which is a reasonably valid, reliable measurement of another phenomenon, which is of greater interest, but cannot be measured directly. In malaria control a distinction should be made between indicators for programme evaluation, and indicators useful for assessing the possibility of transmission, for characterizing malaria situations and for determining the risk of special problems such as epidemics.

KZN KwaZulu-Natal

Malaria case– A person who is found to have malaria parasites in his/her blood.

MCP –Malaria Control programme

Management– The cost-effective use of resources and communication to attain defined objectives within an organisational framework.

Morbidity– The incidence or prevalence of a given disease or condition, or the burden of the disease in a population.

Notification– The reporting of number of cases of a certain disease or condition from a health service facility to a central unit.

Objective– A clearly defined, measurable outcome within a given time frame.

Passive case detection– When malaria cases are detected by blood smears taken from persons presenting themselves at health facilities for whatsoever reason.

Presumptive treatment– The provisional incomplete treatment of febrile patients in and from malaria risk areas before confirmation of the diagnosis(of malaria) by blood test.

Primary Health Care– The primary health care approach that recognizes the basic right to health for each individual and rests on the principle of equitable use of health resources, especially with regard to the coverage and effectiveness of health care. Its basic requirements are:

- that there should be total coverage of the population with basic but essential health care, particular attention being given to needy, vulnerable groups;
- that services should focus on the major health problems of the population, should be affordable and should employ technologies that are locally appropriate as well as acceptable;
- that the communities should participate actively in the planning, implementation and evaluation of health services; and
- that health services should coordinate with other sectors involved in development, since progress in health leads to and at the same time depends on, socio-economic progress.

Severe malaria– Malarial disease accompanied by one or more of the following life-threatening complications: cerebral malaria, convulsions, severe anaemia, hypoglycaemia, renal failure, sepsis, pneumonia, adult respiratory distress syndrome, hyperparasitaemia, hyperthermia or circulatory shock.

Treatment failure– A person with uncomplicated malaria who has taken a full course of antimalarial treatment and who presents, at any time between 7 and 28 days after the start of treatment, with asexual forms of *plasmodium falciparum* in the absence of reinfection.