THE REPUBLIC OF BOTSWANA
MINISTRY OF HEALTH
DEPARTMENT OF PUBLIC HEALTH
NATIONAL MALARIA CONTROL PROGRAMME

MALARIA STRATEGIC PLAN 2006-2011

June 2006

DRAFT 2.0

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- PIU
- Department of HIV/AIDS, Prevention and Care
- Epidemiology and Disease Control Unit
- The Malaria Reference Group
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- Botswana Defence Forces

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II Preface

This second generation Strategic Plan of the National Malaria Control Programme follows the four year Malaria Strategic Plan, which ended in 2005. The Strategic plan will be implemented over a period of five years, running from 2006 to 2011. The MSP aims to provide a clear strategic direction with targets and indicators for monitoring and evaluation of the NMCP in order to effectively control malaria in the next five years. This strategic document will focus on the implementation of six strategic focus areas namely, Programme Management and Coordination, Vector Control and Personal Protection, Case Management and Chemoprophylaxis, Epidemic Preparedness and Response IEC, Advocacy, Community Mobilization and Behavior Change.

The document has been arranged into three sections:

1. Background which includes country profile, geography, health systems and the National Malaria Control Programme
2. Review of the 2002-2005 highlighting success challenges and gaps.
3. Strategic framework 2006 – 2011
    a. Strategic Focus Areas
    b. Costed Planning and Implementation Matrices
    c. Monitoring and Evaluation Plan

The other purpose of the strategic plan will be to assist the Ministry of Health and the national malaria in advocacy for increased resource mobilization and partnership involvement in the implementation of the MSP.

Ministry of Health would like to acknowledge the contribution of all the stakeholders, partners, multi-lateral agencies and other institutions and everyone who contributed towards the success of the development of the National Malaria Strategic Plan 2006 -2011.

III Executive Summary

Malaria is a major public health priority disease in Botswana, with an estimation population of 32% living in malarious areas. Malaria transmission occurs during the rainy season in five northwestern sub-districts: Chobe, Okavango, Ngami, Boteti and Tutume. Within these districts, transmission belt can move southwards such that malaria outbreaks occur in the central, zone B of the country (e.g. Ghanzi) and sporadic malaria cases can occur in the traditionally non malarious areas in the south of the country. The unstable and the highly seasonal nature of malaria transmission in Botswana confer negligible acquired immunity and as a result all age groups are at risk of malaria.

The MSP 2006-2011 focuses at moving from doing business as usual into a new way of thinking and controlling malaria. Hence new innovation/strategies to control malaria have been incorporated in this strategic document. A review of 2002-2005 RBM Malaria Strategic Plan was conducted and the report of the review significantly informed the development of the 2006-2011 Strategic Plan highlighting and identifying areas of strengths that the program can build on, weaknesses and gaps that need to be addressed and constitute entry points for the new strategic plan.

The 2006-2010 MSP document highlights key targets that the program should achieve during the five years of the plan and are as follows:

By 2011, the NMCP and partners expect the following targets to be achieved;

- Maintain malaria deaths at below 15 per annum (10);
- Reduce malaria case fatality rate per 100 malaria confirmed cases by 25% (0.50);
- Maintain parasite prevalence rates at below 2%;
- Reduce incidence of confirmed malaria to below 10 per 1000 population at risk;
- Decrease malaria endemic districts to 3;
- Increase ITNs coverage of 60% and above;
- Increase IRS coverage of 80% and above.

The above targets will be achieved through the following strategies:

1. **Program Management and Coordination** for effective program implementation;
2. **Vector Control and Personal Protection** through the use of residual house spraying and insecticides treated mosquito nets;
3. **Case Management and Prophylaxis** for prompt diagnosis and early treatment including prophylaxis in pregnant women and other risk groups;
4. **Information, Education and Communication and Advocacy, including Community Mobilization** for increased awareness and partner involvement;
5. **Monitoring and Evaluation, Surveillance and Research** to monitor program performance and provide evidence for decision making;
6. **Epidemic Preparedness Response and Control** to ensure correct management of epidemics.

Each strategy has a broad objective, a rationale, a situation analysis summarized in SWOT analysis form, interventions and summary of cost. Each strategic objective has a planning and implementation matrix showing interventions, specific objectives, broad activities, targets, indicators, responsible and the cost.

IV Acronyms

AMD	Africa Malaria Day
CFR	Case fatality rate
HCP	Health Care Provider
ANC	Ante Natal Care
MIP	malaria in Pregnancy
OPD	Out Patients Department
ACTs	Artemisinin based Combination Therapy
VHC	Village Health committee
PSI	Population Services International
CQ	Chloroquine
CBO	Community-based organization
CMS	Central Medical Stores
DHT	District Health Team
DDMC	District Disaster Management Committee
DCP	District Contingency Plan
NCP	National Contingency Plan
EPI	Expanded Programme for Immunization
FEW	Family Welfare Educators
HMIS	Health Management Information System
IEC	Information-education-communication
IMCI	Integrated Management of Childhood Illnesses
IRS	Indoor residual spraying
ITM	Insecticide-treated materials
ITNs	Insecticide-treated mosquito nets
MoH	Ministry of Health
MALOF	Malaria Outlook Forum
MRC	Medical Research Council
MSP	Malaria Strategic Plan
HIV	Human Immuno Deficiency virus
MPS	Making Pregnancy Safer
NGO	Non-governmental organization
NHLS	National Health Laboratory Services
NMCP	National Malaria Control Programme
NRH	Nyangabwe Referral Hospital
RBM	Roll Back Malaria
SADC	Southern Africa Development Community
SAIMR	South Africa Institute for Medical Research
SAMC	Southern Africa Malaria Control
SARCOF	Southern Africa Regional Climate Outlook Forum
S-P	Sulphadoxine-pyrimethamine
UN	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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1.0 CHAPTER ONE: BACKGROUND

1.1 Country Profile

Geography

Botswana is a semi-arid land locked country, with a surface area of approximately 582 000 km squared with a total population of 1.7 million according to the 2001 census report. It shares borders with Zambia, Namibia, Zimbabwe and South Africa. The average daily temperature ranges from 22^{o}C to 33^{o} C in January. The daily minimum temperature ranges from -5^{o}C in July to 19^{o}C in January. The rainy season is from October to April, with the average annual rainfall ranging from 250mm in the southwest to 650mm in the North West.

Demography

Botswana has a population o f 1,680 863 as of 2001 population census. The population density of urban to rural ratio is 1.2:1. The age distribution shows that 40% of the population is under 14 years 57.4% between 15 and 64, and 2.6% above 65 and above years of age. The literacy rate in Botswana is 78.1%.

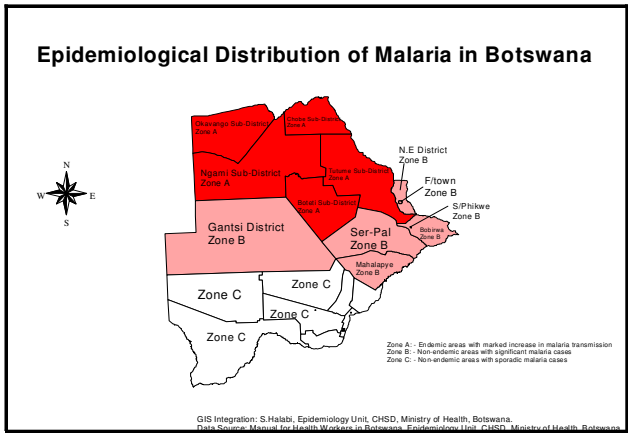
TABLE 1: HEALTH INDICATORS IN BOTSWANA

Indicator	**Both rural and urban**
Crude Birth Rate	31.9
Crude Death Rate	10.4
Fertility Rate (*Females 15 – 49)*	3.7
Under 5 Mortality Rate (per 1000)	74
Infant Mortality Rate (per 1000)	56
Life Expectancy at Birth - *Male*	66.3
Life Expectancy at Birth - *Female*	69.4
Annual Growth Rate (%)	2.1
Maternal Mortality Rate (per 100,000)	200

Source: Central Statistics Office. Results for 2001Census

Malaria Transmission

Transmission is most intense in Chobe, Okavango and Ngami and less intense in Boteti and Tutume. Within these sub districts transmission belt can move southwards such that malaria outbreaks occur in the central zone B of the country (e.g. Ghanzi), and sporadic malaria cases can occur in the traditionally non malarious areas in the south of the country.

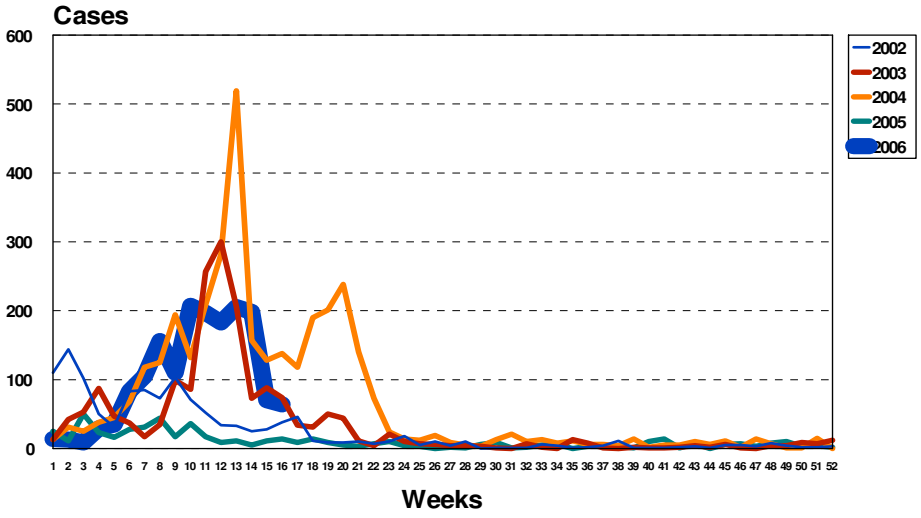


Burden of malaria

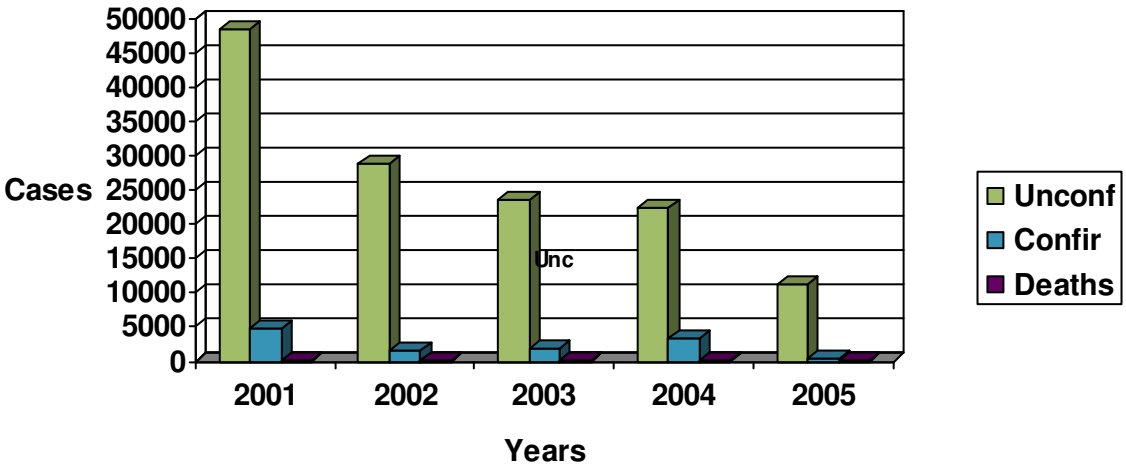
Malaria is a major public health problem in Botswana. The unstable and highly seasonal nature of malaria transmission in Botswana confers negligible acquired immunity leaving all age groups at risk of malaria.

Although the whole population is at risk, it is estimated that 32% live in high malaria transmission areas.

Table 2 Malaria Notifications 1994 – 2006



Malaria case (Unconfirmed and confirmed and deaths) 2001-2005



1.2 Malaria Control Programme

National Malaria Control Programme

The National Malaria Control Programme was launched in 1974 and initially run as a vertical programme. With the advent of primary health care, the programme was integrated and decentralized to Local Government in 1988. With the current restructuring of the Ministry Health the NMCP falls under the Disease Control within

the Department of Public Health. The NMCP has yearly budget allocation for a malaria control.

The programme has offices in Gaborone and Franscistown. The Gaborone office is responsible for overall co-ordination of the programme as well as the weekly malaria surveillance system; advocacy and IEC; and case management. The Francistown office is responsible for entomological work, vector control and personal protection. Both offices conduct operational research. The following positions exist within the NMCP Gaborone: Programme Manager (Malaria), Public Health Specialist, Chief Technical Assistant (Malaria), and Technical Officer (Health Education). Within the Disease control cluster, there is a Health Officer (Statistics) who provides support on malaria as well as other diseases. The Francistown office has the following positions: one Principal Health Officer (Entomology), one post of entomologist has been advertised, 8 Technical Assistants. These officers cover other vector-borne diseases. However, approximately 90% of their time is spent on malaria control.

District Malaria Control

At the district level, malaria control activities are implemented at the District Health Team by a team which comprises of the Public Health Specialist, Environmental Health Officer, Matron, Pharmacy Technician, Community Health Nurse, Health Education Officer, Administrator and FWEs. Within the DHT, the Chief Environmental Health Officer co-ordinates the indoor residual spraying programme as well as the promotion of personal protection. The Community Health Nurse is responsible for the weekly notifiable disease system and together with the Health Education Officer for malaria IEC and community mobilization. Supervision and monitoring of case management is the responsibility of the District Medical Officer or the Public Health Specialist. Referral, District and Primary Hospitals are also responsible for case management of malaria.

Community Malaria Control

Currently, malaria control at the community level is limited. Family Welfare Educators who provides a link between clinics/health posts, and the communities. The responsibilities of FWEs include among others health education on malaria and community mobilization. Formal structures and mechanisms that are used to liaise and work with communities are the Tribal Offices, Village Development Committees and Village Health Committees and informally community leaders and traditional leaders.

1.3 Human Resource (Health Personnel).

This is a core responsibility of the Ministry of Health. The overall number of health worker is still low and the workload is high, major constrains were noted, due to low numbers of laboratory technicians it impacted greatly on reporting malaria results late and thereby has a bearing on case management. Health cadre positions in most facilities are not filled to expected levels. Refer to annex IV.

Table 4: Staffing Levels by District

District	Doctors	Nurses	Paramedics	Family Welfare Educators	Environmental Health Officers
Gaborone	26	227	41	65	22
Francistown	12	120	22	44	16
Jwaneng	2	38	5	8	5
Selebi Phikwe	2	65	8	28	8
Central	11	464	28	272	26
Gantsi	2	58	7	30	7
Kgalagadi	2	90	8	51	8
Kgatleng	3	89	6	50	10
Kweneng	3	158	7	112	14
North East	2	93	5	38	7
North West	9	175	20	96	16
South East	2	81	3	34	9
Southern	4	183	10	107	12

Source: Consolidated Establishment Register for Botswana Local Authorities 2005/2006, April 2005.

1.4 Accessibility

Access to health facilities in Botswana is defined by nature of location as either urban or rural. The access for urban areas is put at 8km and that of rural areas at 20km radius. Overall percentage access for rural or urban areas is essentially put at above 80%.

1.5 Procurement and Distribution System of Malaria Drugs

Central Medical Stores (CMS), which falls under the MoH, has full responsibility of quantification, procurement, storage, distribution of all pharmaceuticals, laboratory and related medical supplies in Botswana. Central Medical Stores is located in Gaborone and distribute to all health facilities in the country. Public health facilities in the country are not allowed to procure drug supplies outside CMS. Private health facilities though may procure outside CMS; they are expected to abide by the national malaria control treatment guidelines. Selection of essential drugs, which includes anti malarial is done by the National Standing Committee on Essential Drugs (NASCOD) and Botswana Essential Drugs Action Programme (BEDAP). In addition the National Malaria Treatment Guidelines and Drug policy framework provides additional guide on the choice of anti malarial to order. Financing of anti malarial drugs is the responsibility of the Botswana government. Drug related costs inclusive of anti malarials are met by the Government. Health facilities are not involved in the budgeting for drugs. This is done at central level. Private practitioners
Quantification: This is done by CMS. Central Medical Stores uses morbidity based and average monthly consumption methods. At central level this is related to the average drug requirements requested from the health facilities. These methods are used at the facility level. The facility will compile data on the monthly use of each particular drug and use the average to request from CMS. Quantities requested at the facility level may not well meet the quantities at central level and hence there is need for support from the central level and CMS to reconcile quantities.

Tenders: These are floated every two years. However since drug supply could be stretched over time there is a provision for purchasing off tender. The Public Procurement and Assert Disposal Board (PPADB) monitor tendering. International competitive bidding is used for large tenders. Procurement is done via government channels. Procurement from reputable companies reduces the risk of sourcing substandard drugs. Drug quality: This is maintained by ordering from companies with good manufacturing practice. All drugs supplied to medical stores are registered with Drug Regulatory Unity, and where unregistered product is required an exemption is sought from DRU. In addition CMS has a quality assurance unit responsible for ensuring that procured drugs meet specified standards.

Drug Inventory Management: This is conducted both at central and facility level. To support inventory management the Drug Management Unit of the MoH supervises local facilities and monitors inventory at facility level.

Storage: Another warehouse has been planned for the Northern region and will be situated in Franscistown.

1.6 Anti- Malaria Drug Resistance

The programme has been conducting drug efficacy studies for SP annually. However, due to unstable nature of the transmission and accompanying drought in the years 2001-2005, patient recruitment has been a serious challenge. The table below summarizes some of the efficacy data conducted in 2000-2004. Adequate Clinical failure(ACR), Early treatment failure (ETF), Late treatment failure (LTF) Lost to Follow up (LTFU) as defined by the WHO 1996 protocol on drug efficacy studies.

Table 4: Drug Efficacy result from 2000 to 2004:

Year	Sentinel site	Sample size	Protocol/Age range	ACR	ETF	LTF	LTFU	1st line Drug
2000	Gumare	77	1996-WHO	58	14	5	0	CQ
	Maun	63		50	10	3	0	
	Nata	25		14	7	4	0	
	Okavango	30		28(97%)	1(3)	0		SP
2001	Okavango	73	1996-WHO	73(100%	0	0		SP

2002	Okavango	18	1996-WHO	18	0	0	0	SP
	Chobe	25		25	0	0	0	
	Ngami	13		0	0	0	13	
2003	Okavango	61	1996-WHO	41	2	-	18	SP
	Chobe	113		75	-	-	38	
	Ngami	-		-	-	-	-	
2004								

Data source: NMCP Drug Efficacy Reports

1.7 Malaria Vector s and Vector Resistance

In Botswana, *Plasmodium falciparum* accounts for over 95% of malaria cases. Historical data suggest that the main vectors are *Anopheles arabiensis, A. gambiae s.s.* and to a lesser extent A. *funestus.* However, recent data on the identity, distribution, resting and feeding habits of *Anopheles* vectors in Botswana is lacking. The programme continues to conduct annual vector susceptibility studies to guide implementation of IRS. The table below highlights the insecticides used and current level of resistance by district.

Table 5: Showing vector susceptibility to different insecticides

Districts	Villages	Insecticides	Susceptibility level %	Average susceptibility level %
OKAVANGO	Seronga	DDT	100	DDT: 99.09
	Gani	DELTAMETHRIN	93.16	DELTAMETHRIN: 92.47
		LAMBDACYHALOTHRIN	89.48	LAMBDACYHALOTHRIN:
		PERMETHRIN	100	88.63
CHOBE	Kavimba	DDT	100	PERMETHRIN: 90.71
		DELTAMETHRIN	97.50	
		LAMBDACYHALOTHRIN	95.00	
		PERMETHRIN	100	
NGAMI	Maun	DDT	100	
	Chanoga	DELTAMETHRIN	89.60	
		LAMBDACYHALOTHRIN	91.54	
		PERMETHRIN	73.39	
BOTETI	Motlopi	DDT	100	
		DELTAMETHRIN	100	
		LAMBDACYHALOTHRIN	100	
		PERMETHRIN	100	
TUTUME	Gweta	DDT	96.67	
	Tutume	DELTAMETHRIN	89.38	
		LAMBDACYHALOTHRIN	81.11	
		PERMETHRIN	88.07	
N-EAST	Tshesebe	DDT	97.87	
	Masunga	DELTAMETHRIN	85.15	
	Moroka	LAMBDACYHALOTHRIN	74.64	
		PERMETHRIN	82.77	

Source: NMCP Entomology Unit

In Botswana, it is clear that DDT is still the most sensitive insecticide with average susceptibility levels of 99.09% and lambda cyhalothrin the lowest at 88.63 %. It is important that the NMCP considers the implications of these results very seriously especially given the low IRS coverage rates currently obtaining in the country.

2.0 CHAPTER TWO - OVERVIEW OF 2002 – 2005 STRATEGIC PLANS

2.1 The 2002 – 2005 Strategic Plans had eight (8) priority areas as follows:

The key strategies for malaria control which have been applied with significant measure of success in Botswana over the past years are:

1. Vector control through the use of residual house spraying and insecticides treated mosquito nets;
2. Prevention of malaria through community mobilization for self protection and provision of chemo prophylaxis to higher risk groups such as pregnant women residing in high transmission areas and non-immune travelers;
3. Programme Management and Coordination;
4. Monitoring of the resistance of the parasite to anti-malaria drugs and adjusting treatment regiments accordingly;
5. Prompt diagnosis and provision of effective treatment.
6. Epidemic Preparedness and Response to ensure effective, efficient and prompt management of epidemics

The Goals/ statement(s) for the strategic plan were:

Goal

To effectively control malaria so that it ceases to be a major public health problem in Botswana

Purpose

The purpose of the NMCP is to co-ordinate and support the delivery of effective malaria control interventions that will prevent and reduce morbidity and mortality due to malaria

Targets and baseline

Target	Baseline 2001	Target 2005
Maintain malaria deaths at below 25 per annum	26[1]	24
Reduce malaria case fatality rate per 100 malaria admissions by 25%	1.83[2]	1.37
Maintain parasite prevalence ratios at below 5%	N/A	4.9%
Reduce incidence of confirmed malaria to below 20 per 1000 population at risk	28.84[3]	20

2.2 Implementation status of the Malaria Strategic Plan 2002-2005

2.2.1 Achievements:

Programme Management and Coordination

The NMCP remains high on the political agenda with Government funding over 95% of all programme activities. Strengthening existing partnerships and establishing new partnerships has been an on-going activity. The programme has also managed to systematically hold annual malaria conference meetings as well as Malaria Reference Group meetings. The preparation and compilation of annual reports has been done annually since 2000. The Staff compliment is lead by the programme manager with support from public health specialist, IEC

[1] Mean malaria deaths 1994, 1995, 1998-2000 (1996, 1997 epidemic years excluded), Weekly Surveillance System
[2] Mean inpatient malaria case fatality rate for 1994-1998, HMIS
[3] Mean incidence of confirmed malaria per 1000 population at risk (1996-2000), Weekly Surveillance System, estimated 32% of population living in malarious areas

officer and data management officer. The Entomology Unit is based in Francistown and headed by an entomologist. The programme has conducted training workshops for different health cadres in different areas of work. Staff development to improve performance has been on going with support for pre-service training

Case Management and Chemoprophylaxis
There are regular reviews of malaria treatment guidelines and protocols and they are made available at Health facilities. The laboratory support has improved with scaling up of rapid diagnostic tests. Management of malaria as outpatients' management of malaria cases including referral and management of severe malaria is mostly done correctly according to Botswana treatment guidelines. The overall use of diagnostics is strengthening the use of rational management of drugs. Staff Training in Malaria Case Management is done annually and there is regular monitoring and supervision of malaria case management by DHT and NMCP.

Vector Control and Personal Protection
High level of commitment from government has been exhibited in sustaining IRS. Training of spray teams with spraying of all malaria endemic districts is being conducted on an annual basis from 2002 through to 2005. Community awareness activities on the importance of ITNs enhanced with an annual re- treatment campaign. Annual bioassays and biennial insecticide susceptibility monitoring studies to determine vector species and behaviour is being conducted.

Epidemic Preparedness and Response
The National and District epidemic preparedness plan. In addition the malaria contingency funds are maintained annually with provision of refresher training in epidemic preparedness and response. Epidemic containers are annual checked and restocked as appropriate. Weekly data is routinely collected as part of the notifiable disease surveillance activity in epidemic prone districts. The program has continued to maintain the existing partnerships and is striving to bring in new partners.

IEC/Advocacy
Family Welfare Educators (FWEs) are the main information providers at community level. Antimalarials are not available at community level according to the national policy. As regards, Knowledge and attitudes, the programme has managed to ensure that for posters present information was mostly in Setswana. The NMCP continues to support the Commemoration of SADC and Africa malaria days.

Monitoring and Evaluation, Surveillance and Operational Research
All districts conduct surveillance and provide weekly reports to the central level. Efficacy studies on anti-malaria, bio essay and susceptibility studies are conducted annually and a survey on ITMs usage in the community was done in 2005. Bioassays and susceptibility studies conducted on annual basis. Training in service training on malaria data implementation of Integrated Disease Surveillance was done.

2.2.2 Challenges and Gaps:

Despite the successful implementation of the 2002-2005, the programme had its own challenges as regards implementation. Some of the challenges encountered by programme:

Programme Management and Coordination
Lack of comprehensive malaria policy at national level makes it difficult for the program to address issues not contained in the specific guideline. Lack of staffing makes it difficult to conduct supervisory visits coupled with lack of program specific vehicles. Inadequate partnership participation as well as non-participation in other sub regional malaria activities beside SAMC annual conference remains. Strengthening malaria control component in the curriculum for pre-service training. The programme has also been affected by high staff attrition at all levels especially staffing at lower levels and the non-availability of malaria focal persons.

Disease Management, Malaria Drugs and Supplies
Botswana government policy of mobility of health workers requires regular refresher training in case management as regular annual trainings may not be adequate. In addition there are inadequate treatment and laboratory guidelines including treatment charts in health facilities and lack of IEC guidelines at community level. As malaria case management cuts across programmes, there is inadequate collaboration between sister units of IMCI, Making Pregnancy Safer and HIV programmes. The private practitioners do not follow malaria treatment guidelines. Regarding information flow, there is inadequate malaria information within IDSR with

malaria chemoprophylaxis being largely not incorporated in the reporting system. Malaria diagnosis remains critical in the management of cases. Laboratory results delay especially for remote clinics impeding case management. Case management support supervision including monitoring requires improvement.

Vector Control and Personal Protection.

The lack of Vector Control policy is impeding implementation of vector control programmes in the country. In addition the changing national malaria epidemiology requires to be reviewed. The issue of staff at central level especially entomologists remains critical for overall implementation and supervision. At community level, net pricing is considered too high and with IEC for vector control being inadequate. ITNs production at CBO level is still done in one district. Information flow from the district to the programme is also poor. In view of the importance of IRS, there is need for a comprehensive IRS survey.

Epidemic Preparedness, Response and Control

The programme has strong malaria epidemic and response strategy; however, epidemic post-mortems still remain a challenge. Due to regional variations in transmission rates, development of different thresholds is critical for the detection of malaria epidemics. The issue of thresholds still remains critical for detect if epidemics and unless these are operational feasible detection becomes a challenge and hence may require review. Supportive supervision also remains inadequate. Partnerships in Epidemic Response and Preparedness still remain a big challenge.

I.E.C. / Advocacy

Inadequate IEC material used at the level of the community, lack of malaria posters in public places/shops and health institutions, lack of community champions for malaria control, Inadequate information on functionality of the village health committees and poor information on malaria symptoms and signs at community level still remain great challenges for IEC and advocacy.

Monitoring and Evaluation Research and Surveillance

This component is critical for programme monitoring of interventions at national level and also implementation at district level. However, there are inadequate management of data at district level. Lack of detailed monitoring plans at national level. The district annual malaria report, inadequate training and inadequate malaria reporting indicators remain a problem. Feedback from the national level to districts remains a problem. .The lack of a comprehensive malaria indicator survey to date is compounding the problem of reporting of core malaria indicators and malaria in pregnancy data. The programme requires to also strengthen its' research base for evidence based decision making.

2.3 Factors that may affect program implementation:

Programme Management and Coordination

- Shortage of human resource for delivering of services at all levels especially at lower level facility (clinics, health posts) and district hospitals.
- Inadequate communication and logistical support such as fax, radio communication, e-mail at all levels.

Case management and Prophylaxis

- In adequate laboratory technicians affecting reporting of malaria slides
- RDTs not viewed as diagnostic tools
- Inadequate follow up supervision after training and proper deployment of trained personnel
- Strengthening central medical stores' capacity for timely procurement and distribution of adequate anti malarial drugs.
- Ensuring high quality of malarial drugs in the country
- SP monotherapy
- Inadequate coordination of malaria prophylaxis especially in pregnancy.

Vector Control and Personal Protection

- Inadequate supplies of ITNs.
- Acceptability of ITNs to communities
- Lack of advocacy to distribute nets at no cost to vulnerable groups.

- Advocate for highly subsidized nets for the community.
- Improper use of ITNs
- Low coverage of indoor residual house spraying

Epidemic Preparedness Response

- New transmission areas due to changing malaria epidemiology
- Lack of malaria mapping to take into account changing malaria Epidemiology in Botswana

Information Education and Communication and Advocacy

- Lack of malaria communication strategy
- Lack of community participation and involvement of Village Health Committees
- Few stakeholders on IEC and community malaria control

Monitoring and Evaluation, surveillance and Operational Research

- Poor utilization of malaria data at district level
- Malaria Data Storage, Interpretation, Utilization, Dissemination at local level
- Incomplete malaria component in Integrated Disease Surveillance and Response to enable the monitoring of disease trends and early detection of outbreaks as well as reporting of malaria in pregnancy data
- Inadequate support of malaria sentinel sites for sensitivity studies
- Inadequate monitoring of data for Roll Back Malaria indicators

3.0 CHAPTER THREE – STRATEGIC FRAMEWORK 2006 – 2011

3.1 Introduction

The implementation of the 2002-2005 Malaria Strategic Plan scored major success in reducing malaria burden and mortality in Botswana, however, a lot still need to be done to reduce the burden further to a level where it will be no longer is a public health problem. As part of national programme review, the NMCP in 2005 conducted a national programme review of the implementation of the MSP to try and determine the impact of the intervention strategies on the ground.

Following the review, the programme organized a consensus meeting for development of the second generation malaria strategic plan utilizing the findings from the review and especially the gaps and challenges as the backbone on which to develop the new 2006-2011 malaria strategic plan. Given the time and resource limitations of the review, it is important that a full malaria indicator survey be conducted within the first year of implementing the new strategic plan whose results will help amend some of the base line indicators for 2005 and contribute to the development of evidence based annual plans.

The current level of malaria control in Botswana needs to be pushed to a new frontier. The level of IRS coverage requires to be improved to above 80% and the strategy for selection of areas to be sprayed reviewed given the evidence from the epidemic of 2006, which saw traditionally non-malarious areas record deaths from malaria. In addition it is important that the ITNs in the new MSP are given the public health value for the intervention to make impact on malaria transmission.

In line with the WHO recommendation of use of combination drugs, Botswana will need to use the new MSP as an opportunity and move towards introduction of ACTs which are not only extremely effective for malaria treatment but also have a gametocyte sterilizing effect thereby contributing to transmission blocking and further reduction of malaria transmission.

It is important to recognize the responsibility of government given the highly optimistic objectives of the new 2006-2010 strategic plan. Already, Government commitment to the overall support for malaria programming is exemplary, but this has to move to an even higher level given the lack of major partners in malaria control in Botswana. However, every opportunity within the life span of the strategic plan will be used to bring on board new partnerships whilst maintaining existing ones.

3.2 Strategic Focus Areas

Consensus was obtained to retain the six strategic areas from the 2002-2005 strategic plans. This was to ensure that the gaps and implementation challenges identified and associated with scaling up and accelerating each strategic area be addressed adequately.

The strategic areas of focus for implementing the 2006-2011 Malaria strategic plans remain as follows:

1. **Programme Management and Coordination** for effective programme implementation;
2. **Vector control and Personal Protection** through the use of residual house spraying and insecticides treated mosquito nets;
3. **Case Management and Prophylaxis** for prompt diagnosis and early treatment including prophylaxis in pregnant women and other risk groups;
4. **Information, education and Communication and Advocacy including Community Mobilization** for increased awareness and partner involvement;
5. **Monitoring and Evaluation, Surveillance and Research** to monitor programme performance and provide evidence for decision making:
6. **Epidemic Preparedness Response and Control** to ensure prompt and effective management of epidemics

The National Malaria Control Program draws its mission and vision from the overall Department of Public Health strategic foundations, which states; '**We shall lead in providing efficient, effective, compassionate and caring public health services which compares with global standards'.**

Vision

To have a Malaria free Botswana.

Mission

The National Malaria Control Programme is committed towards elimination of malaria in Botswana.

Goal

To effectively control malaria so that it ceases to be a major public health problem in Botswana.

Overall Objective

The purpose of the NMCP is to co-ordinate and support the delivery of effective malaria control interventions that will prevent and greatly reduce morbidity and mortality due to malaria leading to the possible elimination of the disease.

The targets for the2006-2011 MSP

Target	**Baseline 2005**	**Target 2011**
Maintain malaria deaths at below 15 per annum	24	10
Reduce malaria case fatality rate per 100 malaria confirmed cases by 25%	1.37	0.50
Maintain parasite prevalence ratios at below 2%	Not available	2.0%
Reduce incidence of confirmed malaria to below 10 per 1000 population at risk	24	10
Decrease malaria endemic districts to 3.	5	2
Increase ITNs coverage to above 60%	18%	>60%
Increase IRS coverage to above 80%	65%	>80%

3.3 Monitoring and evaluation

The Strategic Plan has defined targets and indicators to measure the impact of malaria control. These are designed to support systematic programme monitoring of implementation. In addition, for each strategy there are defined indicators with 2005 baseline data and 2011 targets (summarized in the Annex II). These core indicators will be used for monitoring and evaluating the Strategic Plan. The timing and monitoring of specific activities will be elucidated in the Annual Performance Plans and Reports. The Plans and Reports will also be used to track the indicators defined in the Strategic Plan. After two years (end 2008), a mid-term review will be conducted. At the end of the strategic planning period (end 2011), an evaluation will be carried out. The core indicators are in line with core RBM indicators. These core indicators are as described in Annex II.

3.4 Institutional Implementation Framework

Ministry of Health responsibility for Malaria Control

Malaria Control Financing

Malaria financing remains a prerogative of government at all levels. Ministry funding for malaria is done through mainline ministries, the Ministries of Health and Local Government. The Government of Botswana supports district financing. Over 95% of malaria financing is provided by the Botswana Government with WHO support especially in capacity building.

National Health Strategic Plan/Budget/Expenditure – trend over years Estimated Expenditure from the Consolidated and Development Funds for 2001/02 and 2005/06

Table: Showing National Health statistics Plan/ Expenditure Trend

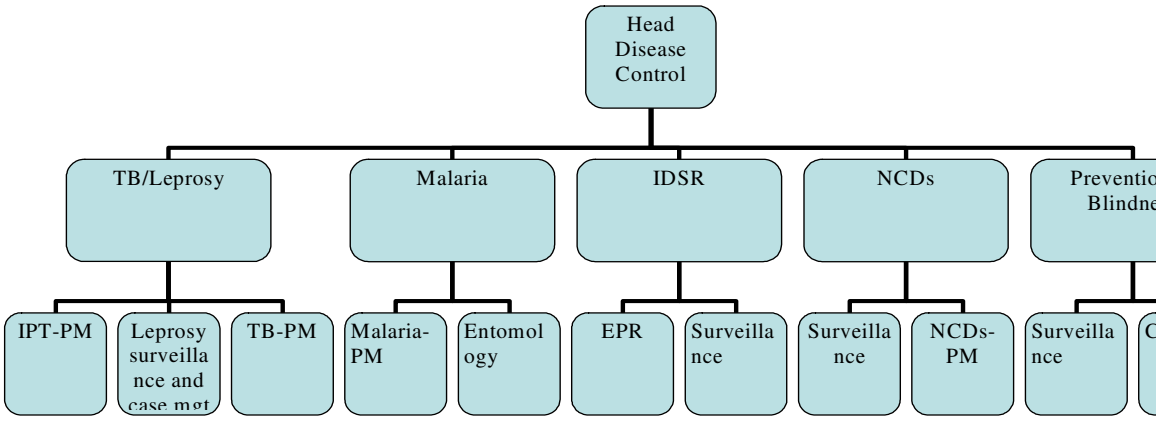
Type of Funding	2001/2002	2002/03	2003/04	2004/05	2005/06
Consolidated Fund	702,757,670	820,009,430	900,399,610	1,025,005,530	1,341,518,290
Development Fund	398,872,000	248,584,000	406,062,000	431,266,000	606,000,000

Health budget as percentage of total Government Budget

Total budgetary allocation to the Ministry of Health constitutes 8% of the total government budget, however the responsibility of Health service delivery is shared by Ministry of Local Government which carries the bulk of the Primary Health Care Services and their allocation on health combined with that of the MOH adds up to 15%.

In the Ministry the Malaria Control Program falls under the Department of Public Health in the Division of Disease Control.

Organogram of the Disease control division



4.0 CHAPTER FOUR – STRATEGIC FOCUS AREAS

4.1 STRATEGIC FOCUS AREA: - PROGRAMME MANAGEMENT AND COORDINATION

Broad objective:

To ensure efficient systematic implementation of quality malaria control through effective programme management and coordination by 2011.

Rationale:

Programme management and coordination is important for malaria control interventions to be properly implemented in Botswana. It is necessary to have effective co-ordination of activities at the national and district level. In addition, quality control and impact of malaria control activities throughout the country can be maintained by the NMCP through training, supervision, monitoring, periodic national reviews and evaluations. Partnerships are important for broadening the base of the RBM in Botswana. To this end, the NMCP needs to bring in new partners and strengthen existing partnerships.

Situation Analysis:

Malaria control in Botswana is co-ordinated by the Ministry of Health through NMCP. Malaria control implementations of activities have been decentralized to DHT level, where the activities have been integrated with other PHC Programmes. Malaria control activities at District level include among others Surveillance, Vector Control, Supervision, monitoring of case management and IEC, Advocacy and Community Mobilization. The inadequate human resource base and high staff attrition rates at the national and district levels constitutes a major problem and this contributes to lack of continuity and therefore, there is need for malaria focal person at district level. Malaria control programme receives significant financial support from Government, particularly for IRS, case management, and epidemic preparedness and response.

SWOT Analysis

Strengths	**Weaknesses**	**Opportunities**	**Threats**
• Existence of a clear structure and subsystems within the Ministry of Health and at district level for malaria control activities • Regular fora for consultation (Malaria Reference Group, Annual Malaria Conference etc) • Strong political support for malaria control • Supportive Government policy for primary health care strategies • Functional partnerships with Ministries of Local Government, Agriculture, BDF and Meteorological Services Department for inter-sectoral collaboration • Availability of health infrastructure • Decentralization of malaria control activities to the district level • Availability of IEC materials • Capacity building through annual training	• Shortage of skilled human resources at all levels • Inadequate distribution of IEC materials at district level. • Inadequate partnerships with research institutions, UN agencies and NGOs • Lack of malaria focal person at district level • Weak collaboration with partners • Lack of program specific travel budget	• Existence of potential partners, e.g. other government ministries, private sector, NGOs and civil society • Health sector reform • Existence of CBOs	• Staff attrition • Change in epidemiological picture • Other competing Health Programmes such as HIV/AIDS •

Interventions

- Staff development to improve performance
- Rregular training workshops for different health cadre
- Sstrengthen malaria component in pre-service training
- Strengthen existing partnerships and establishh new partnerships
- Strengthen inter-country malaria control (meetings and exchange visits for national and district staff)
- Maintain the Malaria Reference Group, Malaria Epidemic preparedness and response Committee and Annual Malaria Conference
- Prepare & produce Annual Reports at National and District level
- Conduct mid-term review
- Program evaluation at the end of 5 years

Summary of cost

Broad Interventions	**Cost**
Co-ordination of malaria control activities	
Planning, monitoring and supervision of activities	
Conduct periodic reviews and evaluation of the programme	
Strengthening existing partnerships and creating new partnerships	
Capacity building at National and District level	
TOTAL	

4.2 STRATEGIC FOCUS AREA: - VECTOR CONTROL AND PERSONAL PROTECTION

Broad Objective:

To prevent and reduce malaria transmission through the use of appropriate vector control interventions that will lead to substantial reduction in the incidence of malaria Botswana by 2011.

Rationale:

Indoor residual spraying (IRS) is the most effective method of chemical control for adult mosquito vectors of malaria. IRS is aimed at reducing the vector population and routine quality application with high coverage can lead to reduction in the intensity of transmission.

The use of ITMs has been shown to be highly effective in reducing malaria morbidity and mortality in a variety of epidemiological settings. Studies have shown that IRS and ITMs if effectively used together have a synergetic effect. When. At low coverage levels, ITMs only serve as a form of personal protection. However at high coverage levels, ITMs may also reduce vector density, and, hence, may then be regarded as a method of vector control.

Larviciding and Environmental management are generally only effective methods of vector control when breeding sites are limited in number and clearly defined. However, the success of environmental management as a malaria vector control intervention can only be effective with increased community involvement and participation.

Situation Analysis:

Vector control using IRS began in the 1950s. Currently, the national IRS coverage is 65% (targeted structures that were sprayed) and protects approximately 70% of the population who reside in malarious areas. The three-home system (cattle-post, Lands and Villages) makes achieving high IRS coverage rates difficult as structures are often locked during the spraying campaigns. There is currently high sensitivity to insecticides that are available for residual house spraying. However there is evidence of increasing resistance to pyrethroids used for IRS.

Since the early 1990s there have been a number ITN projects initiated by the NMCP in partnership with UNICEF and other agencies and organisations. These have served to increase bednet ownership, particularly in Chobe, Okavango,

Ngami and Tutume. However, net re-treatment rate has been low.

Several behavioral factors also compromise the effectiveness of IRS and ITNs. For IRS some of the factors contributing to low coverage are refusal by some households to allow spraying in sleeping huts and three home systems. Due to the high temperatures in summer, sleeping outside is common and this also serves to support transmission.

SWOT

Strengths	Weaknesses	Opportunities	Threats
• Availability of effective insecticides • IRS at no cost to the consumer • History of bed net usage • Existence of CBOs in ITN projects • Availability of ITNs at subsidized cost.	• Low IRS coverage • Low net re-treatment rate • Lack of vector control policy • Lack of standardization of Insecticides used for re-treatment • Low acceptance rate of IRS by community members • Inadequate supervision • Shortage of team supervisors • Inadequate Entomologists at National level.	• Availability of mapping tools • Partnerships with small manufacturing enterprises, retailers and social marketing organizations and CBOs • Availability of long-lasting nets and durable nets • Partnership with UNICEF, other UN agencies and NGOs for scaling up ITN use • Other government ministries with similar activities	• Reluctance of the community to accept IRS • Potential development of insecticide resistance (Pyrethroids) • Cultural factors affecting ITNs and IRS coverage (sleeping behavior, three-home system) • Government budget constraints • Changing National malaria epidemiology • Competing priorities (e.g. HIV/AIDS)

Interventions

- Indoor Residual Spraying
- Insecticide Treated Materials
- Environmental Management
- Personal Protection
- Screening of housing structures
- Larviciding
- ITNs distribution through ANC and ARV clinic
- Community malaria control activities

Summary of cost

Broad Interventions	Cost
Indoor Residual Spraying	
Cross Boarder Integrated Vector Control	
Malaria Epidemiological re-stratification	
Development of vector control Policy guidelines	
IEC for Community Mobilization	
Vector control Evaluation	
Environmental Management	
Insecticide Treated Materials	
TOTAL	

4.3 STRATEGIC FOCUS AREA: - CASE MANAGEMENT AND PROPHYLAXIS

Broad Objective:

To ensure effective malaria case management and chemoprophylaxis that will contribute to the reduction of morbidity and mortality in the identified risk groups and general population by 2011.

Rationale:

Case Management is one of the cornerstones of malaria control programme as it is able to significantly reduce morbidity and mortality due to malaria. The most vulnerable groups include: pregnant women, infants and young children, travellers to malaria endemic areas and people living with HIV/AIDS. In Botswana, due to the unstable nature of malaria transmission, the entire population is at risk of malaria. Patients presenting with malaria in this country are non-immune regardless of age, sex or area of residence and are therefore likely to develop complications due to severe malaria with associated high mortality. Hence, malaria case management remains critical in morbidity and mortality reduction.

Situational Analysis:

Government continues to invest in malaria case management. Currently the country still is using SP mono therapy as the first line treatment with quinine as second line. Chemoprophylaxis using CQ+Proguanil is being provided for all pregnant women attending ANC in endemic areas. Travelers from non- endemic to endemic districts are advised to take chemoprophylaxis. The policy on diagnosis is such that all suspected cases have RDT done and a blood slide taken. However, RDT results are not reported irrespective of whether they are positive or not. Clearly there is a need to stream line this to allow complimentarity between RDTs and microscopy slides.

The programme has continued to train health workers on an annual basis however, due to high attrition and staff transfers, this may not be adequate. Case management supervisory visits continue on an annual basis from central level but the district level hampered by lack of malaria focal points. Endemic districts are currently implementing malaria chemoprophylaxis in pregnant women even though its impact has not yet been assessed and information flow from the health facilities to the central level is inadequate.

SWOT

Strengths	**Weaknesses**	**Opportunities**	**Threats**
• Updated Guidelines and training Manuals available in all health facilities. • The SP study has been conducted every year. • All suspected malaria cases have a blood slide taken and/or RDT performed. • Availability of RDT in malaria endemic Districts from Hospital to Clinic level. • A system of Drug management is in place at all Health Facilities. • Presence of pharmaceutical units at DHT's, Referral, General and Primary Hospitals. • Training of Health workers done annually • Monitoring and supervision of malaria case management by DHT and NMCP is done on annual basis.	• Stock outs of RDT's • Lack of Lab facilities in remote health facilities • Delay to get results from Lab (7days) • Inadequate knowledge on case management by some health workers • Stock outs of prophylactic drugs in health facilities • Lack of refresher courses for Lab Techs in non-malaria endemic areas • Lack of IEC for case management at community level • Inadequate collaboration with sister MoH units (IMCI & Safe Motherhood & HIV, Nutrition etc) • Management of cases based on clinical grounds.	• IMCI programme in place in all districts • Potential partnerships with private practitioners. • Advent of ACTs • Tool for auditing malaria deaths is in place • Improve policy on RDTs use for confirmatory diagnosis	• Development of SP resistance in neighboring countries. • Staff attrition and shortage of manpower. • Poor adherence of private practitioners to treatment guidelines. • Impact of HIV/AIDS on malaria • SP use with resultant increase in gametocyte carriage in population • Lack of SP efficacy data. • Poor adherence to National Malaria Treatment Guidelines by private practioners

Interventions

- Chemoprophylaxis
- Diagnosis of malaria
- Case management
- IEC and Advocacy on case management
- Quality assurance in Malaria case management
- Operational Research
- Monitoring and supervision for case management
- Capacity building on case management

Summary of cost

Broad Interventions	**Cost in US$**
Chemo prophylaxis	**50 000**
Early diagnosis	
Appropriate case management	**1 200 000**
IEC and Advocacy on case management	**-**
Quality assurance in Malaria case management	**50 000**
Operational Research	**46 500**
Monitoring and supervision for case management	**97 000**
Capacity building on case management	**200 000**

4.4 STRATEGIC FOCUS AREA: - MONITORING AND EVALUATION, SURVEILLANCE AND OPERATIONAL RESEARCH

Broad Objective:

To ensure the existence of an effective surveillance system, which includes effective monitoring, and evaluation that is efficient and sensitive to monitor programme performance, detect malaria out breaks, depicts malaria trends and support research by 2011.

Rationale

Over 50% of the population of Botswana lives in malaria endemic areas. Due to the unstable nature of malaria transmission the entire population is at risk of developing severe malaria timely detection of epidemics. Existing and new information through surveys and operational research supports evidence-based planning; monitoring and evaluation to inform and strengthen programme interventions. The district and NMCP need to conduct active surveillance of confirmed cases in non-endemic areas and document malaria deaths yearly in order to improve our knowledge on the Epidemiology of malaria in the country.

Situation Analysis

The NMCP operates an effective weekly malaria surveillance system (using Form MH2007), which is timely and has a high coverage. This has been successfully used to detect malaria outbreaks at district level. There is a national malaria database that summarises the range of malaria data available. In addition, Health Mapper is used to map malaria data. At the district level, capacity building in malaria data management, mapping and analysis needs to be strengthened. Operational research has been limited to the routine monitoring of drug and insecticide efficacy. Partnership with national and international research institutions is currently lacking.

SWOT

Strengths	Weaknesses	Opportunities	Threats
• Weekly surveillance system • Functional IDSR • Programme reviews conducted • Good data management • Drug efficacy and insecticide resistance monitoring • Malaria database in place • Active collaboration with meteorological services. • The use of both clinical cases and confirmed cases for malaria surveillance • Rapid feedback to the districts	• Lack of comprehensive M & E plan • Inadequate malaria information in IDSR • Lack of Mapping capacity • Limited data analysis and utilisation at district level • Limited collaboration with research partners • Lack of Malaria stratification at the sub-district and health facility level • Lack of research agenda	• New strategic plan • Increased partnerships • Co-ordination with University of Botswana and other research partners • Availability of seasonal forecasts and rainfall difference images for forecasting and early warning • Health Mapped for data analysis at district level • Implementation of Integrated Disease Surveillance and Response	• Inadequate resources • Competing priorities with other programmes

Interventions

- Capacity building
- Facilitate the incorporation of malaria indicators in Integrated Disease Surveillance and Response
- Conducting a baseline survey (including parasite prevalence ratios, treatment-seeking behaviour, quality of case management)
- Geographical mapping of malaria transmission at the sub district level
- Maintaining the national malaria database and utilise it for evidence-based planning
- Reviewing epidemic thresholds
- Identifying research priorities
- Operational research
- Monitoring of drug and insecticide efficacy

Summary of cost

Broad interventions	Cost
Data management and health mapper	**60 000**
Strengthen Surveillance System	**20 000**
Operational Research	**200 000**
Monitoring and Supervision	**97 000**
Malaria Surveys	**500 000**
Capacity building	**200 000**
TOTAL	

4.5 STRATEGIC FOCUS AREA: - EPIDEMIC PREPAREDNESS, RESPONSE AND CONTROL

Broad objective:

To detect, respond and effectively control malaria epidemics within two weeks of onset of an outbreak in all districts by the year 2011.

Rationale:

The unstable pattern of malaria transmission means the risk of malaria outbreaks and epidemics is high, particularly following above normal rainfall. Moreover, districts and the NMCP need to be sufficiently prepared and have the capacity to respond when malaria outbreaks occur**.** . Consequently the country is prone to epidemics and therefore, it is important to be able to forecast and provide early warning for

Situation analysis:

Epidemic preparedness and response comprises appropriate planning for epidemic at central and district level. Currently the Government has committed resources to ensure response and control to epidemics is done efficiently. The districts through the District Disaster Committee access funds through district disaster committee. In addition, the district has a small budget for malaria contingency epidemic funds. Supportive supervision of all districts on epidemics on annual basis by requesting districts to draw and submit their epidemic preparedness plans annually with annual reviews of epidemic containers. All epidemics that were reported have been responded to within two weeks of onset, this reflects the level of preparedness in tackling malaria epidemics. Active surveillance to confirm cases in non-malaria transmission zone areas is carried out on regular basis. Documentation of annual epidemic post mortem and malaria contingency remains to be improved. The level of partnership is still low but the Botswana Defense Force and Department of Meteorology continues to provide valuable support to the NMCP.

SWOT

Strengths	**Weaknesses**	**Opportunities**	**Threats**
• Epidemic preparedness and response committee in place. • Epidemic containers monitored and maintained • Contingency funds available. • Community involvement and participation • Training on epidemic preparedness conducted yearly • Efficient drug supply and distribution system in place	• Lack of districts malaria threshold • Inadequate supportive supervision visits • Lack of district malaria contingency plan • Inadequate documentation of annual epidemic post mortems • Few partners • Shortage of manpower • Lack of trained staff to respond	• Partnership with Botswana Defence Force • Partnership with National Disaster Office • Partnership with Meteorological Department • Partnership with Chartered Standard Bank • Partnership with other ministries	• Occurrence of natural disasters (flooding) • Possible changing patterns of malaria transmission • Emergence of drug and insecticide resistance. • Global warming • Endemic malaria transmission in neighboring countries

Interventions

- Increase and strengthen partnerships.
- Maintain the epidemic containers.
- Increase allocation of malaria contingency funds.
- Provide continuous training in epidemic preparedness and response for health workers.
- Strengthen early warning system and surveillance

Summary of cost

Broad Interventions	Cost
Increase and strengthen partnerships	**50 000**
Malaria Epidemic post mortems	**70 000**
Maintain the epidemic containers.	**50 000**
Provide continuous training in epidemic preparedness and response for health workers	**200 000**
Strengthen early warning system and surveillance	**200 000**
TOTAL	

4.6 STRATEGIC FOCUS AREA: INFORMATION, EDUCATION COMMUNICATION AND ADVOCACY

Broad objective:

To keep malaria high on the political agenda, and to achieve active involvement of communities in malaria control by 2011**.**

Rationale:

For malaria to remain a public health priority, advocacy among politicians, policy-makers, partners and civil society is necessary. Active community participation can increase the effectiveness of malaria control efforts (e.g. ITMs). In addition, specific behavioral change is needed for some interventions (e.g. sleeping under treated nets and treatment seeking-behaviors). Innovative IEC initiatives can promote such behavioral change. Commitment of all members of the team is crucial if we are to see the successful implementation of the IEC, advocacy and community mobilization objectives.

Situation analysis:

IEC and advocacy plays a major role in ensuring that programmatic issues are understood at all levels. In addition IEC contributes significantly to community behavior change regarding programmatic interventions. IEC cuts across all interventions and contributes to the success of programmatic implementation. The programme has an IEC officer, even though the programme budget for IEC and advocacy is limited. In addition, there are no comprehensive IEC strategic policy guidelines on how best to promote IEC, advocacy and community mobilization for malaria control at all levels Currently there appears to be a piece meal approach in the implementation of IEC activities. There is need for a strong and integrated approach in the implementation of IEC at programme level. The new MSP will therefore look at ways of strengthening IEC and advocacy to ensure the challenges encountered in the implementation of Case management and vector control at community level are addressed.

Interventions

- Advocating for malaria control as a specific public health priority among politicians, partners and civil society.
- Strengthening community based mechanisms for action on malaria issues.
- Innovative IEC initiatives that raise individual, household and community awareness of malaria.
- IEC materials development
- Malaria in schools for increased awareness and behavior change

SWOT

Strengths	Weaknesses	Opportunities	Threats
• Production of IEC materials at national level. • Regular commemoration of SADC and Africa Malaria Days. • Collaboration with the health education unit. • Existence of well established community structures.	• Inadequate distribution of IEC materials at district level. • Lack of a comprehensive IEC/Advocacy document. • Inadequate functionality of the VHCs. • Inadequate of political commitment and support at district level. • Inadequate funding of IEC at district level. • Lack of community involvement in development of IEC materials. • Inadequate distribution of IEC materials at district level. • Lack of a comprehensive IEC/Advocacy document	• Involvement of partners with social marketing expertise • Use of new entry points into communities (e.g. schools) • Community involvement	• . • Inadequate involvement of the VHCs in malaria control. • Inadequate of political commitment and support at district level. • Inadequate funding of IEC at district level.

Summary of cost

Broad intervention	Cost
Advocacy and community involvement.	**190 400**
Malaria in schools and public places	**300 000**
Advocacy for malaria control among politicians, partners and civil society.	**160 000**
IEC and materials development	**121 600**
Innovative IEC initiatives for private sector support	-
TOTAL	

5.0 CHAPTER SIX – IMPLEMENTATION AND PLANNING MATRICES

5.1 Programme Management and Coordination: -Planning and Implementation Matrix

Intervention	Specific Objectives	Broad Activities	Targets	Indicators	Responsible	Cost
Co-ordination of malaria control activities and training at National & District level	1. To establish and maintain an effective support system from National to all Districts by 2011	Conduct support visits	All districts supported	Number of districts supported	NMCP DHTs	
	2. To provide capacity building for effective and efficient work force in all the Districts by 2011	Capacity development for health workers in malaria Develop and implement malaria policy Provide logistic support	All districts with competent health workers Malaria policy developed and being implemented Logistic support provided	Number of health workers trained Number of Malaria of districts implementing malaria policy.	NMCP DHTs	
Planning, monitoring and supervision of activities as well as conduct periodic reviews and evaluation of the programme	1. To conduct systematic and timely programme monitoring and supervision by 2011	Conduct supervisory support visits	District supervision undertaken	Number of supervisory district reports	MoH NMCP DHTs	
	2. To support compilation of comprehensive annual malaria reports at National and District level by 2011	Develop capacity in annual report writing	Districts able to produce annual malaria reports	Number of districts with district Annual reports available	MoH NMCP DHTs	
	3. To conduct mid-term review by 2008	Undertake programme reviews	Programme review by 2008	Number of programme reviews conducted	MoH NMCP DHTs	

Strengthening existing partnerships and creating new partnerships for rolling back malaria in Botswana	To strengthen multilateral approach at National and District level by 2011	Establish Collaborative initiatives	Collaborative initiatives established	Number of collaborative initiatives established	MoH NMCP DHTs	
	To strengthen inter-Country collaboration in malaria control by 2011	Establish collaboration in malaria control with all neighboring countries	Cross border initiative in Malaria control	Number of cross border collaborative initiatives established.	MoH NMCP DHTs	

5.2 Vector Control and Personal Protection: -Planning and Implementation Matrix

Interventions	**Specific Objective**	**Broad Activities**	**Targets**	**Indicators**	**Responsible**	**Cost**
Indoor Residual Spraying	To increase IRS coverage to above 80% in all spraying districts by 2011.	Intensify IEC campaigns Provide supervision and support to districts	Above 80% IRS coverage District support	Number of districts with IRS coverage above 80% Proportion of districts receiving supportive supervision	DHTs NMCP	
Cross Border Integrated Vector Control	To strengthen cross border collaboration in vector control by 2011.	Establish cross border collaboration with neighboring countries Hold Cross Boarder meetings annually	Three cross border initiatives established Meetings held	Number of cross border initiatives established. Number of meetings hosted.	NMCP DHTs	
Malaria Epidemiological re-stratification	To stratify vector control activities within zones according to new epidemiological pattern by 2011.	Utilization of epidemiological and meteorological data.	Conduct stratification	Stratification done	NMCP MET DEPT DHTs LOCAL Government	

Development of vector control Policy guidelines	To develop and implement malaria vector control policy guidelines by 2007.	Develop and implement Malaria Vector Control Policy	Policy developed	Proportion of districts implementing the new vector control policy	NMCP	
Community Mobilization	To strengthen community involvement and participation in vector control in all endemic districts by 2011.	Conduct district sensitization workshops for community leaders	Community leaders sensitized	Proportion of community leaders sensitized in malaria control	NMCP DHT CBO	
Vector control Evaluation	To evaluate the implementation of vector control interventions by 2008.	Conduct mid-term vector control household survey	Surveys conducted	Number of Vector control surveys conducted	NMCP DHTs	
Environmental Management	To have 80% of community leaders in malarious districts sensitized in malaria control by 2011 Strengthening partnerships with other key stakeholders in environmental health by 2011	Establish community-based partnerships for malaria vector control. Advocate for policy provision of construction to ensure environmental assessment for malaria control	80% coverage Policy provision provided	Proportion of districts with community based partnerships Proportion of developmental projects with environmental assessment for malaria control	NMCP DHTs CBOs MoH NMCP	

Insecticide Treated Materials	To increase the percentage of children sleeping under treated mosquito nets to above 60% by 2011.	Procure nets and distribution of treated nets at national and district level.	Above 60% 0f children sleeping under ITNs.	Proportion of children in malarious areas sleeping under ITNs	NMCP DHTs CBO	
	To increase the percentage of pregnant women sleeping under treated mosquito nets to above 60% by 2011.	Forging partnerships with retailers, social marketing organisations, UN agencies, NGOs and CBOs in the context of scaling up ITN use	Above 60% of Pregnant women sleeping under ITNs.	Proportion of pregnant women in malarious areas sleeping under ITNs		
	To increase the percentage of total population living in malarious areas sleeping under treated mosquito nets to above 60% by 2011.	Implementing the distribution of ITNs through antenatal and ARV clinics to high-risk groups.	Above 60% of total populations in endemic areas use ITNs.	Proportion of the total population in malarious areas sleeping under ITNs		
	To have 80% of HIV positive people enrolled on ARV program living in malarious areas use ITNs by 2011.	Distribution of nets free of charge to special groups in endemic districts once every 5 years.	80% of HIV people enrolled in ARV Programmes in malarious areas use ITNs.	Proportion of HIV people in ARV programmes in malarious areas sleeping under ITNs		
	To facilitate the extension of net production by CBOs to two other districts especially in Zone A by 2011.	Establish CBO in ITN production in two districts	Two CBO supported to produce nets	Number of CBOs supported to produce nets		
IEC for ITNs	To increase community awareness on the importance of ITNs in endemic areas by 2010.	Behavioural change activities (see Advocacy, IEC and community-based mobilisation strategy)	Awareness increased	Number of districts imp[lamenting BCC and awareness campaigns	NMCP DHTs	
	To conduct annual net re-treatment campaigns in all endemic districts by 2011.	Implementing annual net re-treatment campaigns	Annual re-treatment campaigns conducted			

5.3 Case Management and Prophylaxis:- Planning and Implementation Matrix

Intervention	Specific Objectives	Broad Activities	Targets	Indicators	Responsible	Cost
Chemoprophylaxis	To provide chemoprophylaxis to all pregnant women residing in endemic area attending ANC by 2011.	Provision of chemoprophylaxis to all pregnant women attending ANCs in endemic areas.	All pregnant women attending ANC in endemic areas	Proportion of pregnant women offered prophylaxis at ANC in endemic areas	MoH NMCP DHTs	
	To provide chemoprophylaxis to all travelers from non-endemic areas to endemic areas by 2011.	Provision of chemo prophylaxis to all travelers from non-endemic areas to endemic areas	All travelers from non endemic areas	Proportion of travelers from non-endemic areas given prophylaxis.		
Early Diagnosis	To ensure prompt diagnosis of all suspected cases of malaria at all levels by 2011.	Adequate diagnosis of all suspected cases	All suspected cases of malaria	Proportion of malaria cases correctly diagnosed within 24hrs of onset of fever	MoH NMCP DHT LG	
	To diagnose cases within 24 hours of onset of fever by 2011.	Strengthen laboratory capacity	All laboratories strengthened	Proportion of laboratories able to report malaria results within one hour		
		Increase availability of RDTs	All health facilities with RDTs	Percentage of health facilities using RDTs		

Availability of correct and effective anti-malaria treatment	To correctly manage 100% of malaria cases who consult at health facilities according to National Standard Treatment Guidelines by 2011.	Avail effective and appropriate anti-malarial medicines Build capacity of health workers on case management Comply with referral guidelines	All malaria cases correctly managed Capacity of Health workers built Referral guidelines Complied to	Proportion of malaria cases correctly managed according to National Standard Treatment Guidelines Number of health workers trained Number of malaria cases referred according to the guidelines.	NMCP DHT Hospitals	
Malaria mortality Audits	To have all health facilities conduct malaria mortality audits by 2011	Undertake audit capacity	All health facilities	Number of facilities conducting mortality audits	NMCP DHTs	
IEC, advocacy and community mobilization	To increase community awareness on the prevention and treatment of malaria by 2011	Avail IEC materials and advocate for malaria treatment and prevention	Community	Number of districts promoting BCC in for malaria case management	NMCP DHT Hospitals	
Partnerships in malaria case management	To increase the number of collaborative activities between IMCI, MPS and HIV and UNICEF by 2011	Conduct collaborative activities	Collaborative activities undertaken	Number of activity reports indicating collaborative activities undertaken	NMCP	
Supportive supervision	To conduct systematic supportive supervision and monitoring of case management at all levels by 2011	Conduct supportive supervion Conduct mid-term and final term health facility and community based surveys	Support visits conducted Health facility and community surveys conducted	Number of support visits conducted Number of surveys conducted	MoH NMCP DHTs	

Operational Research	To conduct operational research relevant to the implementation of malaria control in Botswana by 2011	Conduct annual drug efficacy studies on SP Conduct study on malaria in pregnancy Conduct drug efficacy studies as may be required to support drug policy	SP sensitivity study conducted MIP assessment conducted Other efficacy studies conducted	Report of SP sensitivity study available MIP assessment report Drug efficacy study reports available	NMCP	

5.4 Epidemic Preparedness, Response and Control Planning and Implementation Matrix

Interventions	Specific Objectives	Broad Activities	Targets	Indicators	Responsible	Cost
Appropriate planning at all levels.	To develop and implement malaria epidemic preparedness and response plans in all districts by 2011.	Develop malaria epidemic preparedness plan	All districts with plans in place fully implemented	Number of malarious districts implementation EPR plans	NMCP DHTs	
Early detection, timely response and control of malaria epidemics	To strengthen capacity for epidemic response in all districts by 2011. To detect and respond within two weeks to malaria epidemics by 2011. To conduct 2 support visits to all districts yearly by 2011.	Strengthen capacity Strengthen surveillance system Review the supervisory tools	Capacity for epidemic preparedness and response in place Surveillance system strengthened Tools reviewed	Proportion of malarious districts reporting fully prepared prior to each transmission season. Number of districts able to detect and respond to epidemics within two weeks Number of support visits conducted	NMCP DHTs Hospitals	
Malaria epidemic containers	To maintain existing malaria containers by 2011.	Review epidemic containers on an annual basis in all malaria endemic districts	Epidemic containers reviewed	Proportion of epidemic containers reviewed and restocked	NMCP DHT	
Malaria partnerships in epidemic control	To establish and strengthen malaria partnerships in epidemic preparedness and response by 2011.	Strengthen existing and establish new partnerships	Partnerships established and strengthened	Number of partners involved in EPR	NMCP DHTs	
Documentation, evaluation and reporting of malaria epidemics	To provide within 4 weeks of the end of the epidemic information on the level of response by all districts by 2011.	Build capacity in malaria epidemic post mortem	Report available within four weeks of specified time frame	Number of districts able to provide epidemic reports within four weeks	NMCP DHTs	

5.5 Monitoring and Evaluation, Surveillance and Research Planning and Implementation Matrix

Interventions	Specific Objectives	Broad Activities	Targets	Indicators	Responsible	Cost
Sensitive surveillance system	To strengthen surveillance system in all districts by 2011.	Strengthen Weekly reporting system Strengthen case base reporting of malaria Build capacity on data management Periodic review of data collection tools.	All District Health Teams and the private Practitioners All data collection tools reviewed	No. of districts with functional weekly surveillance systems. Availability of reviewed tools	NMCP DHT	
Operational Research	To conduct operational research in three key programme intervention areas by 2011.	Research needs assessment Develop Research agenda	Research in 3 operational research areas Research agenda developed	Proportion of research issues	NMCP University DHT	
Collaborative efforts in Research and surveillance	To establish and strengthen collaboration in monitoring, evaluation and research with three stakeholders in malaria control by 2011.	Conduct Consultative and collaborative meetings	Involvement of institutions	Number of institutions s with collaborative initiatives with the NMCP	NMCP Partners	
Malaria Surveys	To conduct two malaria indicator surveys by 2011.	Plan for the survey Implement malaria indicator survey	Two malaria indicator survey conducted	Number of malaria indicator surveys conducted	NMCP DHT CSO Others	

5.6 Advocacy, information, Education and Communication including Community Mobilization: - Planning and Implementation Matrix

Interventions	Specific Objectives	Broad Activities	Targets	Indicators	Responsible	Cost
IEC, Advocacy and community mobilization strategic direction	To develop and implement a comprehensive IEC/Advocacy document by 2011.	Develop a strategic IEC policy guideline document	IEC strategic policy guideline developed	Availability of IEC strategic policy.	MoH NMCP	
Materials development and malaria days commemoration	To support IEC material development to ensure enhance availability of materials in both private and public places by 2011	Develop relevant IEC materials across strategic focus areas	IEC Materials in all strategic focus areas	Number of strategic focus areas with IEC materials developed.	MoH NMCP	
Community mobilization	To strengthen team work among health workers and the community at district level by 2011.	Develop innovative IEC interventions across strategic focus areas to support behavior change at community level	Innovative interventions across all strategic focus areas	Number of districts with community based intervention promoting behavior change.	NMCP DHTs CBO	
Malaria in Schools	To support introduction of malaria in school health programme for behavior change by 2011.	Develop programme for malaria advocacy in schools	Schools Health Programs	Number of schools with malaria incorporated in school health	MoH NMC DHTs Mo Education	

6.0 MONITRING AND EVALUATION PLAN

The overall MSP will be monitored within the context of the existing M&E plan of the Ministry of Health. Given the nature of the MSP and the high expectation of the same, a number of surveys will be conducted to complement Ministry of Health M&E plan. In addition, some tools s will be developed to allow collection of appropriate malaria data. Extra indicators will need to be included on the IDSR indicators and within the context of HMIS for timely collection of information from the districts. As some districts are quite remote with radios and tele - facilities not being frequently functional, there is strong recommendation that such facilities be strengthened to enhance reporting at all hospitals and districts. In addition, Public Health Directors need to regularly take stock of the situation in their regions to ensure data reporting is going on as required to the different levels. Malaria specific surveys will be conducted in consultation with The Central Statistics Offices especially as regards the MIS. All opportunities to include malaria indicators in non malaria survey will be utilized. The Evaluation plan looks at how each of the interventions in the different areas of work will be tracked. The tracking of activities within each intervention area has been defined in the implementation and planning matrices for each area of work. The monitoring and evaluation plan will focus on ensuring that each intervention is being systematically implemented.

Narrative Summary	Indicators	Data sources	Frequency of collection	Responsible	Dissemination of results	Assumptions
PROGRAMME MANAGEMENT AND COORDINATION						
General Objective 1: **To ensure efficient systematic implementation of quality malaria control through effective programme management and coordination by 2011.**	**Number of focal points recruited/appointed to run programme areas of work at central and regional level**	**Programme review report**	**Quarterly** **Half yearly** **Yearly**	**NMCP, MoH**	**Yearly**	**Programme functioning well with adequate staffing levels and economy of the country remains stable.**
Planning, monitoring and supervision of activities as well as conduct periodic reviews and evaluation of the programme	Number of districts supported with planning, supervision and training of health workers.	Reports Surveys	Yearly Half yearly	NMCP DHTs	Yearly	
Strengthening existing partnerships and creating new partnerships for rolling back malaria in Botswana	Number of new partnerships created	Reports	Yearly Half yearly	MoH NMCP DHTs	Yearly	
Planning, monitoring and supervision of activities as well as conduct periodic reviews and evaluation of the programme	Number of supervisory visits and programmatic reviews conducted	Reports	Yearly Half yearly	MoH NMCP DHTs	Yearly	
Malaria cross Boarder initiatives with neighboring countries	Number of cross border collaborative initiatives established.	Reports	Yearly Half yearly	MoH NMCP DHTs	Yearly	
VECTOR CONTROL AND PEROSNNAL PROTECTION						

General Objective 2: **To prevent and reduce malaria transmission through the use of appropriate vector control interventions that will lead to substantial reduction in the incidence of malaria Botswana by 2011.**	**Number of districts using appropriate vector control intervention as recommended by NMCP**	**Reports** **Surveys**	**Half yearly and yearly**	**MoH** **NMCP** **CBO** **DHTs** **MoEducation**	**Yearly**	**Government support and commitment continues and is increased to meet the new targets of elimination**
Indoor Residual Spraying	Proportion of districts with IRS coverage above 80%	Reports Surveys	Yearly	MoH NMCP DHTs	Yearly	
Cross Border Integrated Vector Control	Number of cross border initiatives established.	Reports	Half yearly Yearly	MoH NMCP DHTs	Yearly	
Malaria Epidemiological re-stratification	Stratification done	Reports	Yearly	MoH NMCP DHTs	Yearly	
Development of vector control Policy guidelines	Proportion of districts implementing the new vector control policy	Reports	Half yearly Yearly	MoH NMCP DHTs	Yearly	
Environmental Management	Proportion of districts implementing management policy	Reports Surveys	Half yearly Yearly	MoH NMCP DHTs	Yearly	
Insecticide Treated Materials	Proportion of the total population in malarious areas sleeping under ITNs	Surveys	Yearly	MoH NMCP	Yearly	
CASE MANAGEMENT AND PROHYLAXIS						
General objective 3 **To ensure effective malaria case management and chemoprophylaxis that will contribute to the reduction of morbidity and mortality in the identified risk groups and general population by 2011.**	**Proportion of identified risk groups and general population receiving effective and correct treatment within 24hrs of onset of fever**	**HMIS** **IDSR** **Monthly Reports** **Surveys**	**Weekly** **Monthly** **Quarterly** **Half yearly** **Yearly**	**NMCP** **DHTs** **Health Information unit**	**Weekly** **Monthly** **Quarterly**	**Government adopts best practices for malaria case management and supports funding for its implementation.**
Chemoprophylaxis	Proportion of pregnant women offered prophylaxis at ANC in endemic areas and travelers from non-endemic areas given prophylaxis.	HMIS IDSR Surveys	Weekly Monthly Quarterly	NMCP DHTs	Monthly	

Early Diagnosis	Proportion of malaria cases correctly diagnosed within 24hrs of onset of fever with laboratory facilities to diagnose malaria.	HMIS IDSR	Weekly Monthly Quarterly Yearly	NMCP DHTs	Monthly	
Availability of correct and effective anti-malaria treatment	Proportion of malaria cases correctly managed according to National Standard Treatment Guidelines.	HMIS IDSR Surveys	Weekly Monthly Quarterly	NMCP DHTs	Monthly	
Malaria Mortality Audits	Number of facilities conducting mortality audits	Reports	Weekly Monthly	NMCP DHTs	Weekly Monthly	
Partnerships in malaria case management	Proportion of new partners in malaria control	Reports	Monthly Quarterly	NMCP DHTs	Quarterly	
EPIDEMIC PREPAREDNESS AND CONTROL						
General Objective 4 To detect, respond and effectively control malaria epidemics within two weeks of onset of an outbreak in all districts by the year 2011.	**Proportion of districts able to detect, respond and effectively control malaria epidemics within two weeks of an out break.**	**Activity reports, Meeting reports**	**Monthly, Quarterly Half yearly Yearly**	**MoH NMCP CBO DHTs MoEducation**	**Monthly, Quarterly Half yearly Yearly**	**Current level of preparedness and control remains and are further enhanced with increased support from GoB**
Appropriate planning at all levels.	Number of malarious districts implementation EPR plan.	Meeting Report	Yearly Half yearly	MoH, NMCP DHT	Yearly Half yearly	
Early detection, timely response and control of malaria epidemics	Number of districts able to detect and respond to epidemics within two weeks	Activity reports	Monthly,	NMCP DHTs	Monthly,	
Malaria epidemic containers	Proportion of epidemic containers reviewed and restocked	Activity reports	Yearly Half yearly	NMCP	Yearly Half yearly	
Documentation, evaluation and reporting of malaria epidemics	Number of districts able to provide epidemic reports within four weeks	Surveys Reports	Monthly	NMCP, DHTs	Monthly	
Malaria partnerships in epidemic control	Number of partners involved in EPR	Activity Reports	Half yearly Yearly	NMCP DHTs	Half yearly Yearly	
MONITRING AND EVALUATION						

General Objective 5 **To ensure the existence of an effective surveillance system, which includes effective monitoring, and evaluation that is efficient and sensitive to monitor programme performance, detect malaria out breaks, depicts malaria trends and support research by 2011**	**Proportion of districts with an effective surveillance system and with regular reporting of surveillance information**	**IDSR** **HMIS** **Surveys** **Reports**	**Weekly** **Monthly** **Quarterly** **Half yearly**	**MoH** **NMCP** **CBO** **DHTs**	**Yearly**	**District capacity in data management and communication system strengthened**
Sensitive surveillance system	No. of districts with functional weekly surveillance systems.	IDSR HMIS Surveys	Weekly Monthly Quarterly Half yearly	MoH NMCP CBO DHTs	Monthly Quarterly Half yearly Yearly	
Operational Research	Proportion of research issues undertaken	Activity reports, Meeting reports	Monthly, Yearly	NMCP Partners DHTs	Half yearly Yearly	
Collaborative efforts in Research and surveillance	Number of institutions s with collaborative initiatives with the NMCP	Activity reports, Meeting reports	Monthly, Yearly	NMCP Partners DHTs	Half early Yearly	
Malaria Surveys	Number of malaria surveys conducted	Activity reports, Meeting reports	Monthly, Yearly	MoH NMCP DHTs Partners	Yearly	
INFORMATION, EDUCATION AND COMMUNICATION INCLUIDNG BEHAVIOR CHANGE COMMUNICATION						
Main Objective 6: **To keep malaria high on the political agenda, and to achieve active involvement of communities in malaria control by 2011.**	**Proportion of increased malaria specific funding overtime in line with high political commitment for malaria control**	**Activity reports,** **Meeting reports**	**Monthly,** **Quarterly** **Yearly**	**MoH** **NMCP** **CBO** **DHTs** **MoEducation**	**Yearly**	**A IEC focal point / or health education specialist in MoH priorities malaria**
IEC, Advocacy and community mobilization strategic direction	Availability of IEC strategic policy.	Meeting Report	Yearly	MoH NMCP	Yearly	
Materials development and malaria days commemoration	Number of strategic focus areas with IEC materials developed.	Activity reports	Quarterly	. MoH NMCP	Quarterly	
Community mobilization	Number of districts with community based intervention promoting behavior change.	Activity reports	Quarterly	NMCP DHTs CBO	Quarterly	

Malaria in Schools	Development of malaria in schools health curricula.	Activity Reports	Quarterly	MoH NMCP Mo Education	Yearly	

ANNEXURE

I. Cases and Mortality 1995-2005

Year	Unconfirmed cases	Confirmed cases *	Deaths	Case fatality rate* (%)
1994	24189	5164	34	0.65
1995	16469	2338	19	0.81
1996	80004	25 743	250	0.97
1997	98770	21686	124	0.57
1998	59428	5687	22	0.39
1999	72802	12754	55	0.43
2000	64880	7758	20	0.25
2001	48237	4716	29	0.61
2002	28858	1283	15	1.16
2003	22418	1811	10	0.55
2004	22404	3453	19	0.55

II Derived Core Indicators for monitoring 2006-2011 MSP Implementations

Programme Management
Malaria policy in developed and being implemented
Number of supervisory district and district annual reports available
Number of programme reviews conducted
Number of collaborative initiatives established
Number of cross boarder collaborative initiatives established.
Vector Control
60% 0f children sleeping under ITNs.
60% of Pregnant women sleeping under ITNs.
60% of total populations in endemic areas use ITNs.
80% of HIV people enrolled in ARV Programmes in malarious areas use ITNs.
Case Management and Prophylaxis
Proportion of pregnant women offered prophylaxis at ANC
Proportion of malaria cases correctly diagnosed within 24hrs of onset of fever
Proportion of laboratories able to report malaria results within one hour
Proportion of uncomplicated malaria correctly managed according to national STG
Proportion of Severe malaria cases correctly managed according to national STG at health facilities.
Case fatality rate from severe malaria per 1000 confirmed cases
Epidemics and Response
Proportion of districts able to detect and respond to epidemics within two weeks
Proportion of health facility able to detect out breaks and respond within two weeks
Number of districts able to provide epidemic reports with two weeks
Monitoring and Evaluation
No. of districts with functional weekly surveillance systems.
Number of malaria indicator surveys conducted
IEC Advocacy and Community Mobilization
IEC strategic policy developed and implemented.
Number of districts with community based intervention promoting behavior change

Annex: III

Table 3: Employment Levels Report Ministry of Health

Department	Established Workforce	Current Employees	Employees in inactive positions	Employees in overstaffed positions	Posts Vacant	Employees to be hired	Percentage Variance
AIDS Prevention and Care	96	82	0	0	14	14	14.6%
Clinical Services	8,346	7,402	1	42	987	944	11.3%
Health Sector Relations and Partnerships	21	16	0	0	5	5	23.8%
Ministry Management	914	870	0	1	45	45	4.8%
Policy Plan. Monitoring and Evaluat.	24	17	0	0	7	7	29.2%
Public Health	473	403	0	0	70	70	14.8%
Entire Ministry	9,874		1	43	1,128	1,084	11.0%

Source: CPMS-MPBR 06 July 2006.

Annex IV

HEALTH FACILITIES BY TYPE AND DISTRICT

District	Referral Hospital	General Hospital	Primary Hospital	Clinics with beds	Clinics with no beds	Total clinics	Health Posts with nurse	Health Posts no nurse	Total H/Posts	Total H/Facilities	Mobile Stops
	2005								**2006**		
Ngamiland	-	2	-	5	6	**11**	19	-	**19**	32	68
North-east	-	-	1	7	7	**14**	24	3	**27**	42	13
Serowe/Palapye	-	1	1	4	18	**22**	30	2	**32**	56	24
Bobirwa	-	-	2	6	2	**8**	12	1	**13**	23	22
Kweneng-East	-	1	1	5	15	**20**	22	1	**23**	45	46
Southern	-	1	-	5	8	**13**	12	6	**18**	32	31
Gantsi	-	-	1	5	-	**5**	16	1	**17**	23	352
Mahalapye	-	1	1	7	8	**15**	29	-	**29**	46	25
Kgatleng	-	1	-	5	7	**12**	17	1	**18**	31	46
Chobe	-	-	1	2	1	**3**	12	-	**12**	16	2
Kgalagadi-South	-	-	1	5	1	**6**	15	-	**15**	22	16
Tutume	-	-	2	9	8	**17**	4	21	**25**	44	29
Boteti	-	1	2	2	10	**12**	9	3	**12**	27	65
Okavango	-	-	1	6	4	**10**	15	1	**16**	27	30
Gaborone	1	1	-	5	20	**25**	-	-	**0**	27	-
Francistown	1	-	-	3	13	**16**	4	-	**4**	21	-
South East	-	1	-	5	5	**10**	3	1	**4**	15	36

Lobatse	1		1			-	1	6	**7**	-		-		-	9		-							
S/Phikwe		-	2			-	2	8	**10**	-		-		-	12		-							
Kweneng West		-		-	1		4	4	**8**	11		2		**13**	22		27							
Mabutsane		-		-		-	3	1	**4**	9		-		**9**	13		6							
Jwaneng		-	1			-	1	4	**5**	-		-		-	6		-							
GoodHope		-		-	1		5	4	**9**	17		9		**26**	36		20							
Kgalagadi North		-		-	1		3	-	**3**	10		1		**11**	15		3							
Grand Total	**3**		**14**		**17**		**105**	**160**	**265**	**290**		**53**		**343**	**642**		**861**							

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Proportion of Severe malaria cases correctly managed according to national STG at health facilities.
Case fatality rate from severe malaria per 1000 confirmed cases
Epidemics and Response
Proportion of districts able to detect and respond to epidemics within two weeks
Proportion of health facility able to detect out breaks and respond within two weeks
Number of districts able to provide epidemic reports with two weeks
Monitoring and Evaluation
No. of districts with functional weekly surveillance systems.
Number of malaria indicator surveys conducted
IEC Advocacy and Community Mobilization
IEC strategic policy developed and implemented.
Number of districts with community based intervention promoting behavior change

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Annex IV

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S/Phikwe		-	2			-	2	8	**10**	-		-		-	12		-	
Kweneng West		-		-	1		4	4	**8**	11		2	**13**		22		27	
Mabutsane		-		-		-	3	1	**4**	9		-	**9**		13		6	
Jwaneng		-	1			-	1	4	**5**	-		-		-	6		-	
GoodHope		-		-	1		5	4	**9**	17		9	**26**		36		20	
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