

GHANA

ROLL BACK

MALARIA

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ROLL BACK MALARIA STRATEGIC PLAN FOR GHANA 2000-2010

INTRODUCTION

Background

The malaria burden is a challenge to human development. It is both a cause and consequence of under-development. In Ghana, malaria is the number one cause of morbidity accounting for about 40% of all OPD attendance. It is also the leading cause of mortality in children under five years, a significant cause of adult morbidity, and the leading cause of workdays lost due to illnesses. According to Morrow in a study on the relative importance of different disease problems, malaria was found to be the single most important cause of loss of healthy life of all diseases in Ghana in 1984.

Malaria is more than a health issue as the inactivities of other sectors may increase or decrease the malaria disease burden. In addition malaria impacts adversely on productivity of all sectors of the economy. All sectors therefore need to work together to reduce the social and economic impact of malaria.

Though malaria control activities in Ghana started in the pre-independence era just before the Second World War, historically malaria control has been the purview of the Ministry of Health sometimes to the exclusion of other stakeholders. Further more, various groups and organizations are and have consequently been working independently of each other on issues relevant to malaria control. Malaria control efforts have been fragmented, uncoordinated, and in some cases antagonistic, rather than synergistic.

The Director General of WHO, as a global effort to control malaria, announced the roll back malaria (RBM) initiative in 1998. Roll back malaria is based on partners working together to an agreed plan; intense action against malaria at the community level based on good evidence and focused on results; high level political backing leading to substantial increases in resources for health development; and strategic investments in better tools. A key principle of the roll back malaria initiative is therefore to make malaria control a truly developmental issue and increase participation in malaria control through bringing key stakeholders to work together in concert based on their comparative strengths.

Ghana perceives the principles of RBM as being in consonance with the overall goals of its Vision 2020 developmental plan. The principles also accord with the objectives of the Medium Term Health Strategy of the Ministry of Health: increasing access, improving quality and efficiency in service delivery and building partnership in the context of overall sector-wide development.

On account of the above, the office of the President of Ghana through the Ministry of Health responded positively to an invitation by the Director General of WHO to participate in the Global effort to roll back malaria.

The country was then privileged to participate in field testing the tools for introducing RBM into countries, which was then followed by an RBM consultative meeting in Abidjan. The team from Ghana that attended the meeting was constituted into an interim Task Force to develop a plan for introducing RBM into the country.

The inception process included a desktop situation analysis of malaria and its control in Ghana from colonial times to the present including all research work on the disease relevant to the country. A number of sensitisation and consensus building meetings with various stakeholders were also held in Accra, Kumasi and Tamale in addition to individual contacts with development partners to build partnership. Four working groups were then constituted to draft a strategic plan for the implementation of RBM in Ghana. The draft document was discussed in a National Forum of all stakeholders and later reviewed by a WHO consultant from the RBM secretariat ; it was finalised into this strategic document for rolling back malaria in Ghana.

Purpose of Document

This document is a result of a consultative process involving major stakeholders from public and private sectors including NGOs. It seeks to put roll back malaria on the national socio-economic developmental agenda by emphasizing in a single document the contributions and responsibilities of the major stakeholders to malaria and malaria control in the hope of putting malaria firmly on their respective agendas. The document finally seeks to establish an explicit and coherent framework of strategies to guide implementation and action of key stakeholders and for achieving clearly defined malaria control targets.

The design of this document is based on the principle that RBM is a pathfinder to strengthen other disease control and programme activities.

SITUATION ANALYSIS

Epidemiological Analysis

Malaria is hyper-endemic in Ghana with crude parasite rates ranging from 10 to 70%. Only three species of *Plasmodium* are present. These are a) *P. falciparum* (80-90%), b) *P. malariae* (20-36%), and c) *P. ovale* (0.15%). Mixed infections of *P. falciparum* and *P. malariae* are not uncommon.

The principal vectors are the *Anopheles gambiae* complex and *Anopheles funestus*, accounting for 95% of all catches. *Anopheles gambiae* s.s. of the complex predominates and transcends across the country. *Anopheles arabiensis* and *Anopheles melas* also exist but in small proportions.

Malaria is the single most important cause of morbidity in Ghana (GHAT, 1981). It accounts for 40% of all outpatient attendance (MOH 1993), with children under the age of

five years accounting for 40% of these. Research work from the Kassena-Nakana district in the Upper East Region estimated that malaria accounted for over 25% of under-five mortality in Northern Ghana (Binka et al, 1994).

Malaria control interventions being implemented in Ghana include case management, personal protection including chemoprophylaxis in pregnancy, and environmental management. These are implemented essentially within an integrated fashion.

Health Sector Analysis

The government of Ghana is committed to improving the health of all people living in Ghana. Such a broad goal encompasses many specific objectives for individuals and populations e.g. increased life expectancy, reduction in avoidable deaths and improvement in quality of life. Recognizing that, there are never enough resources to make what is technically possible universally available, a rethinking and restructuring of priorities is inevitable.

Malaria has been identified as one of the priority diseases targeted for control in the medium term. The coverage of specific malaria control interventions has however been constrained by limited geographical and financial access to basic health services, inadequate quality of health services in both public and clinical care services, inadequate funding of health services, inefficient allocation of resources, and poor community, intersectoral and private sector participation.

In this section there is an analysis of the delivery, management and stakeholder within the health sector. The purpose is to provide an understanding of the context for rolling back malaria and to inform strategy development.

Organisation of Health Services Delivery

Health services in Ghana are delivered in primary, secondary and tertiary health systems. The primary health care system is equivalent to the district health system. It comprises all institutions (clinics, health centres and hospitals) and individuals whether private, public or traditional. All districts have also been subdivided into 4-6 subdistricts with each subdistrict covering a defined geographic area of 20,000-30,000 people.

The health centre is responsible for providing clinical, public health and maternity services to the catchment population using a combination of clinic-based, regular outreach and mass campaigns in close collaboration with communities, community institutions and leaders and village based health workers and health institutions.

The district hospital serves as the first referral point in the primary health service. They provide clinical (outpatient and inpatient) and maternity services and serve as back up for health centres in the district. The regional hospital is the second referral level. It acts as

the technical focal point for specialised clinical and diagnostic care in broad specialised areas like medicine, general surgery, paediatrics and obstetrics and gynaecology.

The teaching hospitals form the apex of specialised care in the country. They are the leading training and research institutions, and offer undergraduate and postgraduate training for doctors and other professions.

Management of Health Services

Health management in Ghana is fairly decentralised within the MOH, a nested approach involving District Health Management Teams (DHMTs), Regional Health Management Teams (RHMTs) and headquarters. Complimenting this arrangements are institutional / health facility management teams. Each of these management levels is a Budget and management centre i.e. they are responsible for a defined programme of work supported by a defined operational budget.

As part of the health reform process, there are plans to establish a Ghana health service, which will be an autonomous government agency responsible for service delivery thus leaving the ministry of health to focus on health policy and regulation. The relationship between the Ghana health service and the district assemblies has raised a lot of concerns and issues, which need to be clarified. Particularly, whether DHMTs will be part of the district assemblies and will receive their budgets from the district composite budgets.

Currently, a sector-wide approach to health delivery exists in Ghana. The principles underlying this the implementation of the Sector Wide Approaches in Ghana include an agreement between Government of Ghana and health partners on an agreed and co-ordinated programme of work, an integrated approach to funding and common implementation and evaluation arrangements.

Under this arrangement, the MOH prepares an annual programme of work, which is funded from Government of Ghana (GOG) funds, internally generated funds and pooled donor funds. The MOH and partners meet twice a year to review and plan sector-wide performance.

A few donors, for various reasons are however out of the common pot and continue to earmark funds. And even for those contributing to the pot, most of them earmark a proportion of their funds and disburse out of the common pot.

Stakeholder Analysis

TABLE 1: STAKEHOLDER ANALYSIS OF PARTNERS

Community

Name	Role in RBM	Comparative Advantage	Potential Benefits to RBM	Potential Benefits to Stakeholder
Individuals and Households	Primary Stakeholders, take individual level action	Early detection and Management at home. Early detection of danger signs and appropriate referral.	Acceptance of RBM Willingness to take part in RBM, Demand for RBM interventions Community knowledge and resources	Reduction in malaria burden Increase productivity and reduced poverty Increased knowledge of RBM
Unit Committees	Political authority, explain RBM to community, and social mobilization	Surveillance, monitoring and multiple prevention, enforcement of legislation	Increased community political support and commitment to RBM, Institutionalise RBM within the community	Visible successes at tackling community problems, recognition and enhanced image of committee
Opinion Leaders, chiefs and elders	Traditional authority and their role is Social mobilisation	Social mobilisation	Product champions, power to influence community thinking	Same as above
Groups e.g. employees, religious groups	Social authorities and social mobilisation	Peer pressure and education	Facilitate access to target groups and community participation in RBM	Knowledge, Information and Empowerment of group, increased interest in group and increased membership
Community				Empowerment and skills for community action

Public Sector

Name	Role in RBM	Comparative Advantage	Potential Benefits to RBM	Potential Benefit to Stakeholder
MDAs national, regional including NADMO and security agencies	Policy formulation, Integrate RBM into Planning framework, M&E,	Give direction and legitimization, create enabling environment for	Institutionalising Intersectoral approach to RBM, Policy and strategy linkages	Improved intersectoral linkages, improved effectiveness in achieving stated objectives of MDAs, increased

	regulation, resource mobilisation and allocation	decentralised institutions		productivity, reduced burden of illness, reduced staff time lost. Each MDA to identify potential benefits and improved outcomes etc. e.g. increased enrolment and attendance and educational attainment in the case of MOE
District Assemblies and decentralised departments	Implementing agencies, translating national policy into district plans, coordinating effective district level response, enact bye laws, resource mobilisation and M&E	Resource mobilisation, political commitment	Effective coordination, facilitate Institutionalising RBM at district level, support to MDAs, more resources for RBM	Enhanced image of district assemblies, Improved performance of their statutory functions, catalyst for actions on other health and environmental issues, enhanced performance may attract more resources
Parliament	Enact laws and approve loans and budgets, allocate MPs fund	Political commitment, agent of change	Legislations favorable to RBM e.g. the Exemption of nets and insecticides from taxes and tariffs, Product champions of RBM and people's health, catalyse community based activities, increase access to different sources of resources including MPs fund	Improved health of constituency, an issue for consultation in constituency
Media (Public and Private)	Analysis, Dissemination,	Access to information channels	Improved access to information channels and	Reputation as RBM advocate, enhanced knowledge of health

	advocacy and public education		agenda setters, source of adverts	and environmental issues, advertising revenue
Health Care Providers	Provision of health care including health education	Wide network of health facilities; Large manpower resource.	Advocates and product champions, delivery of RBM interventions, favorable budgetary / resource allocation to RBM	Knowledge and skills, improved job satisfaction from improved outcomes

Parastatal

Name	Role in RBM	Comparative Advantage	Potential benefit to RBM	Potential benefit to Stakeholder
Providers SSNIT SIC VRA	Provide environmental and medical services, make resources available for health	Good quality health services	Increase institutional and financial resources for RBM, enhance credibility for RBM e.g. adverts sponsored by SSNIT, comprehensive implementing of RBM interventions within and outside their network	Recognition for people centered activity/ investment in people

Private Sector, Civil Society and NGOs

Name	Role in RBM	Comparative Advantage	Potential Benefits to RBM	Potential Benefits to Stakeholder
Providers				
Industry	Product development, manufacturing distribution Provision of services, marketing	Innovative and client centered	Strategic investments in Malaria prevention and control activities	Profits and enhanced corporate image on being socially minded
Research Org (Public and	Knowledge generation and product	Wide skills and expertise	Development of new drugs and materials, market	Industry sustainability, national and

private)	development, basic and operational research		research, systems and social research, needs assessment	international credibility
NGOs	Advocacy, Service provision, mobilise resources	Innovative at targeting and implementation e.g. gender, community participation	Participatory skills, extra funding, access to network of expertise	Access to funding, improved results, recognition

Development Partners

Name	Role in RBM	Comparative Advantage	Potential Benefits to RBM	Potential benefits to Stakeholder
Development Partners	Resource mobilisation, facilitate policy development, information on best practices and access to network of expertise	Flexible, muscle in policy agenda, international perspective	Increase resources, focus on results, and poverty focus	Improved outcomes, increased development and poverty reduction, accomplished missions

ROLL BACK MALARIA OBJECTIVES, STRATEGIES AND ACTIVITIES

GOAL

The overall goal of RBM in Ghana is to facilitate human development by reducing the malaria disease burden by 50% by 2010.

This goal is to be achieved through overall health sector development, improved strategic investments in malaria control, and increased coverage of malaria treatment and prevention interventions, especially at the community level.

COMPONENT STRATEGIES

- Improved case management
- Multiple prevention
- Focused research
- Improved partnerships.

STRATEGY ONE: IMPROVED CASE MANAGEMENT

The major concern is that, no matter what is done to prevent the occurrence of malaria, people will still be infected and have malaria, especially in our tropical environment. It is therefore necessary to ensure that caretakers/parents are able to recognize symptoms and signs of malaria and respond appropriately. Health care workers should also have the knowledge and skills to manage all cases of malaria well, including complications, to reduce morbidity and mortality due to malaria.

Specific concerns relevant to case management include:

- ◆ Poor knowledge or ignorance of the cause, prevention and management of malaria among parents and caretakers
- High case specific mortality attributable to malaria
- Mismanagement of cases of malaria in health facilities
- Poor accessibility of basic services for the sick especially in rural areas
- Poorly developed referral system at all levels
- Inadequate laboratory support in terms of skills and facilities, especially in health centres
- Weak surveillance of diseases especially at community level.

The Overall Objective of improving case management is to ensure that symptoms and signs of malaria are recognised early and appropriate management is provided promptly at individual, family, community and facility levels.

Specific Targets by the end of 2010 are:

- ◆ 80% of caretakers and parents in rural areas and 90% in urban areas will be able to recognise early symptoms and signs of malaria

- ◆ 80% of caretakers and parents in rural areas and 90% in urban areas will respond appropriately to cases of malaria they identify.
- ◆ Quality of health care services for the management of all cases of malaria will be improved in 90% of health facilities.
- ◆ Physical accessibility to basic services will increase from about 60% to 90%

PRIMARY INTERVENTIONS FOR CASE MANAGEMENT

- ◆ Early case detection and rapid treatment for malaria at all levels from household to referral health facility level
- ◆ Appropriate response to malaria
- ◆ Provision of Adequate Quality Care
- ◆ Ensuring effective and equitable access to health services

OPERATIONAL APPROACHES FOR PRIMARY INTERVENTIONS

1.1. EARLY RECOGNITION OF FEVER AND EARLY TREATMENT WITH FIRST LINE ANTI-MALARIA DRUGS

1.1.1. Improved Home-Based Care

Caretakers/parents have been used with success in Ghana and elsewhere for the treatment of children with diarrhea using Oral Rehydration Solutions and it is known that majority of them will attempt to treat their sick wards for simple fever before seeking help from outside. (*Agyepong et al, Marfo et al, ...*)

Studies in Greater Accra and Upper East regions have demonstrated that community based education empowers caretakers to make appropriate diagnosis of simple malaria and also seek for right treatment. (*Quaye et al, Quainoo et al, Agyepong et al*)

Studies have shown that though there are misconceptions about causation of malaria, symptoms and signs of the disease are readily described by caretakers. (Only about 29% of 100 caretakers could link malaria with mosquito in one study, in rural Ghana (Watling et al. 1995).

Care takers and parents will be educated on:

- ◆ The causation of malaria,
- ◆ How to recognise early signs and symptoms of malaria, including danger signs in children and
- ◆ How to provide appropriate management.

Their competence for early recognition, treatment and appropriate referral shall be developed through sustained Information Education and Communication [IEC] (mass media and inter-personal) using multi-channel approaches appropriate to each level.

The focus however shall be at the community level using all appropriate channels of communication and agents, including women's groups, religious groups, unit committees and assembly personnel.

Chloroquine shall remain the first line drug of choice at home level as it has been proven still efficacious in Ghana. A national survey in 1992 on chloroquine resistance showed the following rates: coastal zone- 17.1-22.1%; savanna zone- 8.6-10%; forest zone- 3.1-6.3%. Most of the resistance was at R1 and R11 levels. Recent studies by NMIMR provided similar picture [].

Monitoring of anti-malaria drug resistance is on going and shall continue with RBM so that the necessary policy changes in drug use shall be effected should resistance levels reach about 25%.

Specific Activities for Improving Home-based Care

- ◆ Development of national IEC strategy on malaria
- ◆ Identification of existing IEC materials on home-based care
- ◆ Modification or development of IEC materials for CWCs, ANCs, outreach sessions.
- ◆ Development of IEC messages for radio, television airing.
- ◆ Airing of messages through radio, television and print media at national level
- ◆ IEC campaigns at district and community levels

1.1.2. Community Based Health Service Initiative(CBHSI)

This will aim at bringing first contact close to the household through creation of single person health clinics at community level.

It involves placing trained community health nurses or similar cadres on government payroll in communities in simple facilities (with accommodation) provided in partnership with the communities.

The project has been successfully piloted in Navrongo Health Research Unit [improved coverages etc] and the MOH has decided to adopt it for countrywide implementation. Accessibility for basic services is currently estimated at 60%.

RBM is to assist taking implementation to scale for the remaining 40% of population who do not have access to basic health services by providing logistic support and through advocacy.

Specific Activities for CBHSI

- ◆ Undertake advocacy activities in support of CBHS Initiative
- ◆ Training of Community based health workers (CBHW's) in malaria case management
- ◆ Provision of logistic support e.g. Motor bikes
- ◆ Supervision of CBHWs

1.1.3. Strengthen Competence of Informal Providers from Other Sectors

Teachers and Agric Extension officers, for instance, can be found in most communities in Ghana in places where health workers are absent. Such officers are potential service providers if given the proper training and orientation. In Ghana TBAs with little education have been trained to provide maternity services and simple management of fever. A study in the Nzema East district of Western region on school treatment of malaria using primary school teachers as providers found that appropriate malaria diagnosis were made and correct treatment were given by the teachers after training. (*Afenyadu et al,....*)

There is an on-going School Health Education Programme (SHEP), which trains teachers to assist health workers in service delivery especially targetted at school children. RBM shall support the implementation of this initiative by strengthening the competence of these informal providers especially in places where there are no health workers.

Specific Activities for Strengthening Competence Of Informal Providers

- ◆ Training of teachers, agricultural extension officers on case management of simple malaria.
- ◆ Support National SHEP secretariat to monitor SHEP countrywide

1.2.ENSURE APPROPRIATE RESPONSE (REFERRAL)

Appropriate management of cases of malaria whether at home or in health facilities requires that the caregivers are given the skills and knowledge to detect cases which are above their competence.

They must also know what to do before referring to the next level for further management and where to seek for such help.

Three operational approaches are proposed to address the issue.

- ◆ Communication for referral facilitated by activities of community surveillance volunteers.
- ◆ Communication for referral improved by use of radio and other networks
- ◆ Communication for referral improved by use of an ambulance system

1.2.1. Communication for Referral Facilitated by Activities of Community Surveillance Volunteers.

A Community-Based Surveillance system, using community volunteers to detect and report unusual events and locally important disease conditions to the sub-district team, has been successfully pilot-tested in the Northern region of Ghana for over a year with support from UNICEF.

The MOH has reviewed and adopted it for countrywide implementation as part of the surveillance system. It was found that the reporting and investigation of disease conditions improved significantly at the community level through activities of these community volunteers.

RBM shall assist in taking it to scale in order to establish a linkage between caretakers and the formal health workers at sub-district level.

Specific Activities

- ◆ Purchase of 50 motorbikes for districts to monitor CBS volunteers

1.2.2. Communication for Referral Improved by Use of Radio and Other Networks

It is important to establish communication linkage between various levels as part of measures to improve referral of cases. A pilot programme has been established in the Volta region with DiFID support and it has been found very useful in passing on information and requesting for assistance. It is the Ministry's intention to take it to scale and RBM shall support this initiative.

Specific Activities

- ◆ Participation of RBM team in development of suitable communication network between levels
- ◆ Advocacy for establishment of communication network

1.2.3. Communication for Referral Improved by Use of an Ambulance System

The concept for this intervention is being developed by the Ministry and is currently being tested in Ashanti and Western regions.

RBM intends to support the development and implementation of an appropriate ambulance system to facilitate referrals.

Specific Activities

- ◆ Participation of RBM team in development of suitable ambulance system
- ◆ Advocacy for its implementation

1.3. IMPROVE QUALITY OF CARE

A *major objective* of the MTHS is to improve the quality of health care services provided especially in our health facilities. A number of initiatives have already been put in place to address problems associated with quality.

The RBM Initiative will link up with most of the existing initiatives and strengthen them directly or through advocacy actions.

The following *approaches* shall be adopted to ensure quality of case management

- ◆ Ensure skill adequacy of providers
- ◆ Ensure adequate diagnostic support capacity for cases of complicated malaria through functional laboratory systems.

- ◆ Monitor quality and effectiveness of drugs
- ◆ Ensure appropriate packaging and formulation of anti-malaria drugs
- ◆ Institutionalisation of quality assurance systems
- ◆ Ensure clinical supervision by higher level institutions
- ◆ Appropriate incentive structure for workers throughout the entire sector
- ◆ Develop Appropriate Health Information System

1.3.1. Ensure Skill Adequacy of Providers

Currently the Ministry has adopted the IMCI approach for in-service training of service providers in the management of the sick child. This is because of the realisation that at the peripheral level health workers have to deal with cases of malaria, ARI, diarrhoea, measles and malnutrition together and it is not always easy to distinguish them from each other at that level. Together, these diseases constitute about 65% of all diseases seen at OPD.

In 1981, the Ghana Health Assessment Team study showed that malaria, measles, childhood pneumonia, sickle cell disease and severe malnutrition collectively accounted for 34% of healthy life lost due to all diseases (GHAT 1981).

The IMCI process is currently at the adaptation stage and shall be gradually implemented in selected districts before moving to scale. RBM shall facilitate this process in the selected districts and support its countrywide implementation later.

In the meantime health workers shall be provided with appropriate skills for managing complicated malaria in “non-IMCI districts” and also support the introduction of IMCI in the basic curriculum of some training institutions such as for nurses and doctors.

Specific Activities

- ◆ Revision of existing training and treatment modules on management of simple and complicated malaria.
- ◆ Production of training materials and treatment guidelines.
- ◆ Training of doctors, nurses/midwives, pharmacists, medical assistants etc. in management of simple, severe and complicated malaria.
- ◆ Advocacy for implementation of IMCI

1.3.2. Ensure Adequate Diagnostic Support Capacity for Cases of Complicated Malaria through Functional Laboratory Systems.

This is relevant especially at district and regional hospitals that serve as referral centres for the lower levels to facilitate differential diagnosis of severe and complicated malaria. The

Biomedical Engineering Unit has already prepared a standard list and some hospitals have already been equipped with basic equipment. [..coverage].

RBM shall support equipping the remaining hospitals and improve the skills of laboratory technicians in laboratory diagnosis of malaria and other parasitic diseases. Already, fifty-five (55) laboratory technicians from all the regions have been trained in laboratory diagnosis of malaria.

Specific Activities

- ◆ Identify facilities requiring laboratory services
- ◆ Provide laboratory equipment for 20 district hospitals
- ◆ Train laboratory personnel in laboratory diagnosis of malaria.

1.3.3. Monitor Quality and Effectiveness of Drugs

A National Drug Programme (NDP) has been set up by the MOH to be responsible for ensuring drug quality. The NDP is to be supported to run a special quality monitoring exercise in relation to RBM.

A number of herbal preparations have been scientifically tested at Akuapim Mampong Herbal Research Centre and found efficacious in the treatment of malaria. The research centre at Mampong shall be supported to continue testing and monitor the efficacy of herbal preparations in conjunction with the directorate of herbal medicine.

Specific Activities

- ◆ Undertake studies into quality and efficacy of anti-malaria drugs
- ◆ Advocacy to support work of NDP
- ◆ Develop national drug policy on malaria
- ◆ Research into efficacy of herbal preparations by Mampong Akuapim and Noguchi research centres.

1.3.4. Ensure appropriate packaging and formulation of anti-malaria drugs

An operational research conducted in Brong Ahafo established that pre-packaging anti-malaria drugs improved compliance, reduced cost to patients by 50% and reduced waiting time at the dispensaries. (Yeboa-Antwi et al,....)

A similar study found that mothers found pre-packaged tablets more acceptable, convenient and easier to administer compared with syrup. (Ansah,E..).

RBM shall support taking this to scale in public and private facilities as part of training and educational activities for health personnel, especially pharmacists and chemical sellers.

Specific Activities

- ◆ ***Ensuring the acceptance and adaptation of pre-packaging by health facilities (issues of minimum cost per pack..)***
- ◆ Advocacy activities targeted at chemical sellers and pharmacists etc.

1.3.5. Institutionalisation of Quality Assurance Systems

A number of quality assurance programmes, especially in infection control, have been developed in Eastern and Volta regions especially in the area of infection control. The ICD wants to establish an effective quality assurance programme in all hospitals. RBM shall assist adaptation of existing systems and support their countrywide implementation.

Specific Activities

- ◆ Support monitoring of Quality Assurance Programmes in hospitals
- ◆ Advocacy for institutionalisation of QAPs in health institutions

1.3.6. Ensure Clinical Supervision by Higher Level Institutions

One weakness of the health system is lack of clinical supervision of lower level staff by higher level staff. A system whereby clinical teams have been constituted to provide technical support services to some hospitals is currently being developed by the ICD. This however has very limited coverage. RBM shall assist in adapting the current system and take it to scale.

Specific Activities

- ◆ Involvement of RBM team in establishing clinical supervision systems
- ◆ Support monitoring of clinical supervision system

1.3.7. Appropriate Incentive Structure for Workers Throughout the Entire Sector

Lack of motivation of health workers adversely affects the quality of care given by health workers. A suitable incentive system to motivate staff is yet to be developed to the satisfaction of all. RBM shall assist in exploring a suitable system.

Specific Activity

- ◆ Advocacy for development of appropriate incentive system

1.3.8. Develop Appropriate Health Information System (HIS)

The objective is to assure that health facilities shall be reporting regularly and accurately on age and sex-specific malaria morbidity and mortality as part of an integrated HIS.

A key philosophy of the RBM initiative is to pursue evidence- based decision making and action. The health information system is key to this and in the Ghanaian context needs to be strengthened to reflect the peculiar needs of malaria control.

Unfortunately, an appropriate HIS is yet to be developed even though a number of such systems have been piloted and are being used in some regions. RBM shall contribute to the selection and development of a suitable HIS.

Specific Activities

- ◆ Advocacy for development of suitable HIS
- ◆ Establish database on malaria
- ◆ Develop appropriate user-friendly tools to capture relevant data on malaria.

1.4.ENSURE EFFECTIVE AND EQUITABLE ACCESS TO HEALTH SERVICES

A major problem militating against reducing morbidity and mortality is the limited geographical access and coverage of services, especially in rural and hard-to-reach areas of the country. Recently during the NID exercise it was realised that a number of villages in “overseas areas” of the Northern, Volta, Eastern and Brong Ahafo regions have never been reached with any health services.

To address this problem, there are plans of expanding the coverage of basic health services by supporting the countrywide introduction of the Community-Based Health Service Initiative based on the Navrongo Experience, strengthen outreach services, work through other sectors and strengthen the informal sector.

The following approaches will be followed to achieve objective of improving access:

- ◆ Expand the Community-based health Initiative
- ◆ Strengthen mobile outreach from existing health facilities
- ◆ Collaborate with other sectors
- ◆ Strengthen informal sector
- ◆ Facilitate access to private practitioners

1.4.1.Expand the Community-based Health Initiative

(See 1.1.2. above).

1.4.2.Strengthen mobile outreach from existing facilities

From 1996 to 1998 the number of outreach services has increased from 6677 to 10249 or from 7 per facility to 11. This has contributed greatly to a systematic increase in immunisation coverage in Ghana from 52% in 1995 to 68% in 1998 for DPT3.

Where appropriate, such as places with poor accessibility, such mobile outreach programmes shall be strengthened to provide integrated basic services for children who are brought to such clinics usually for vaccinations.

Specific Activities

- ◆ Provide logistic support for outreach activities

1.4.3. Work Through Other Sectors

(See 1.1.3. above).

1.4.4. Strengthen Informal Sector

Chemical sellers are widely available in many parts of the country. About 15% of respondents in a district in Ghana sent their sick children to chemical sellers for mild malaria.

A programme to train them to ensure that they provide the correct medication for simple malaria was recently undertaken. In all 2608 of targeted 2983 chemical sellers in 5 regions were trained in the treatment of simple malaria.

Studies have also shown that about 4% --- of rural caretakers resort to herbal traditional healers for simple fevers.

RBM shall support the training of these chemical sellers. The directorate for alternative medicine will also be supported to monitor the activities of traditional practitioners.

Specific Activities

- ◆ Support to directorate for alternative medicine to monitor activities of herbal practitioners
- ◆ Meetings with Association of Chemical sellers on their practice once a year
- ◆ Training of chemical sellers and private pharmacies.

1.4.5. Facilitate access to Private Practitioners

In areas where nearest facility is private (medical practitioners, nurses, medical assistants), RBM shall facilitate access to these services for all in the area. This is in line with the MOH's MTHS, which encourages development of the private sector.

The ministry, in line with this principle, has provided a number of cold-chain equipment to designated private clinics and maternity homes for the provision of vaccination services. The concept is not fully developed yet in the area of case management though a form of contract arrangement with such facilities has been proposed.

RBM shall facilitate the development and implementation of suitable arrangements and concepts in this area.

Specific Activities

- ◆ Support Unit responsible for Private Practitioners in monitoring and coordination
- ◆ Participation in development of suitable concept to facilitate access to services provided by private practitioners

STRATEGY TWO: MULTIPLE PREVENTION INTERVENTIONS

Malaria is hyper-endemic in the country, therefore the overall aim is to reduce man-vector contact as much as possible. Use of ITM's and chemoprophylaxis are the main pillars of prevention. Source reduction such as larviciding, and outdoor residual spraying is not feasible except in identifiable and targeted areas.

The **overall objective** is to reduce man-vector contact and as much as possible make the environment unsuitable for mosquito breeding.

Specific Targets

- ◆ *Increase the number of people especially children and pregnant women sleeping under an adequately treated net from about 4% to 70% by 2010*

- ◆ All Pregnant women shall be on appropriate chemoprophylaxis by 2010.

THE MAIN PRIMARY INTERVENTIONS UNDER THIS COMPONENT SHALL BE:

- Promote use of Insecticide-Treated Materials and Nets (ITMN's)
- Drainage, Mosquito proofing and General sanitation
- Larviciding (biological and chemical) [Targeted]
- In-door, outdoor residual spraying (adulticiding) [Targeted]
- Chemoprophylaxis for pregnant women and non-immunes

2.1.PROMOTING USE OF ITMs

ITMs have been shown to reduce all cause mortality by 25%-50% in parts of Africa , and are highly cost effective. The small-scale ITM implementation projects of the 1990's have failed to offer sustainable delivery of ITMs other than in very small areas.

The new larger scale social marketing programmes, in east and southern Africa are selling many ITMs, and are achieving creditable retreatment rates; however, they are still heavily donor dependant. Some countries with strong or developing traditions of mosquito net use already have a thriving commercial market; local Tanzanian manufacturers are selling one million nets each year.

The use of ITMs especially bednets, has been tested in Navrongo Research institute and found to reduce overall childhood mortality by 17% in Ghana (Binkah et. al. 1996). It was also found in that study that the estimated cost per child year protected was US\$8.8 and cost per death averted was US\$2,003.

The cost per impregnated bednet per year was US\$2.4 and cost per person protected was US\$1.2. (Binkah et al. 1997). This compares with the average cost of treating malaria episode (including indirect cost and the opportunity costs of travel) of US\$8.67 or 3.7 days of male output and 4.7 days of female output (Asenso-Okyere et. al. 1997). The study recommended that promotion for the use of ITN should be part of a package of high priority interventions for children.

A unique and innovative project is being developed in Ghana with support from USAID. The goal of the project is to reduce the amount of deaths and suffering caused by malaria, especially in young children and pregnant women, by increasing demand for insecticide treated materials (ITMs) and ensuring their availability, through the sustainable marketing of ITMs in Ghana. From its inception, this project has been developed by a partnership, which includes GSMF, the Ministry of Health (MOH), local and international non-governmental organizations (BASICS, PATH Canada, UNICEF), local funding partners and the commercial sector.

It is the aim of this project to create a demand for both ITMs and retreatment and then for the commercial sector to service this demand. The essence of this project is the development of partnerships between key public and commercial players, which have different, though complimentary, reasons for promoting a common goal, that of increasing the use of ITMs in Ghana.

This strategy has worked well in the fields of contraceptives, salt iodization, ORS and hand washing soap. The Health Partners in Ghana, especially DfID, have strongly expressed their willingness to support this project, and indeed have already provided Technical Assistance to support the proposal development. BASICS and PATH Canada have also provided considerable TA in the past.

The project will create demand by developing and commissioning an integrated (multi-faceted) consumer oriented campaign based on solid market research which will result in improved knowledge, changed attitudes and modified behavior so the consumer will perceive the benefit of what is being offered and have easy access to the product.

A situational analysis in Ghana has shown that there is a well-developed commercial sector of manufacturers and distributors interested in expanding their product lines to include ITMs. These include insecticide and mosquito net manufacturers and suppliers as well as manufacturers and distributors of anti mosquito products, both locally and internationally.

OBJECTIVE OF ITMs

Increase the number of people especially children and pregnant women sleeping under an adequately treated net from about 4% to 70% by 2010

2.1.1. National Demand Creation Campaigns

Use of bednets varies considerably in Ghana, ranging from about 4.4% in northern Ghana (Aikins et. al. 1994) to as much as 50-80% in one district in Greater Accra (Chinebuah 1999). In general, there is higher bednet ownership and use in rural than in urban areas[Current level of use, knowledge etc see DHS-1998].

A recent study focused on the availability and marketing of anti-malarials in the country. A review of newspaper advertisements of anti-malarials in the Daily Graphic (Ghana's Biggest Selling Newspaper) where majority of the manufacturers and/or agents advertise their goods and services was undertaken. The review covered the period of 1995 to July 1999.

The review indicates that majority of advertisement manufacturers/agents placed in the Daily Graphic for the last four and half years was on mosquito coils (62%), aerosols (22%), mosquito coils and aerosols combined adverts (7%), insecticide (9%) and electric mosquito repellent (less than 1%). It confirms the current low advertising rate for ITMs. The number of advertisements in the newspapers increased by the years with 50% of them only in the first half of 1999.

The main strategy to create demand for ITMs is through the private-public partnership described above to be funded with initial support by USAID. RBM shall assist to take this to scale.

The MOH's network of clinical and public health facilities and manpower and District assemblies shall also be assisted to create demand for ITMs as part of their normal activities.

The RBM programme shall support the demonstration of actual use of ITMs in strategic institutions like hospitals, hotels and schools. About 14,400 nets have been supplied to identified hospitals throughout the country to be used in paediatric and maternity wards for demonstration purpose. It is hoped that caretakers and mothers shall be encouraged to demand for ITMs once they have been exposed to its use.

A similar exercise to promote the use of ITMs in schools and in the hospitality industry is currently being pursued by the commercial partners and this shall be supported by RBM.

Specific Activities

- ◆ Development of policy on ITMs
- ◆ Printing of policy on ITMs
- ◆ Production of radio and TV commercials
- ◆ Production of Print materials
- ◆ Media Placement (radio, TV, Print)
- ◆ Road Shows at community level

- ◆ Promotional activities by MOH's network of facilities and personnel
- ◆ Promotion of ITMs through informal sector-schools, hotels, district assemblies
- ◆ Advocacy to include ITMs in school curriculum
- ◆ Celebration of Malaria Awareness Months

2.1.2. Ensure Availability of Bednets and Appropriate Insecticides

Under the partnership arrangement described above, the commercial sector shall take primary responsibility for the supply and distribution of bednets and insecticides as they have comparative advantage in this area.

There are a number of major companies involved in the importation of these materials and they have already identified their own distribution and retail channels. Some of these companies are Agrimat, Chemico, Bio Medics, Vestergaard-Frausen, Starwin Products, Huger, Chemagro, Marcrich GH and Verde Trading Ltd.

RBM shall support their work through sharing of information and linking them to potential agents. Local manufacturing of nets shall also be promoted.

Specific Activities

- ◆ Advocacy and promotional activities to link users with commercial sector
- ◆ Promote local manufacture of nets

2.1.3. Make ITMs Affordable

Currently, a treated bednet costs about C30,000 and re-treatment costs C5000 per net. This is not affordable to the majority of people who need them. A number of measures shall be undertaken to make ITMs relatively affordable to many. Advocacy for tax and tariff waivers on bednets and insecticides shall continue. Already the Ministry has been able to pass a memo on this through cabinet to Ministry of Finance, which has promised to pass it to parliament for the waiver.

Local production of bednets shall also be promoted. Already, one manufacturing company has shown interest in such a venture.

RBM shall support the development of subsidy strategies and consensus building on them for the poor.

Specific Activities

- ◆ Advocate for tax waiver on nets and insecticides
- ◆ Development of subsidising strategies and building consensus on how to reach the poor with affordable nets.

2.1.4. Promote Re-treatment of used ITMs

According to current information ITMs have to be re-treated after 6-9 months or after 3 washes, depending on the insecticide used. It is therefore important that users are educated on

this and re-treatment services made available. Already regional teams have been trained in re-treatment techniques in all regions and they shall be supported to act as training and information centres for re-treatment. Community-based net treatment services shall be promoted in partnership with communities, District Assemblies and the commercial sector.

RBM shall also support the introduction of ITM and re-treatment in nursing and other school curricula.

Specific Activities

- ◆ Identification of community agents
- ◆ Adaptation of training materials
- ◆ Printing of training materials
- ◆ Training of community agents and others on net re-treatment
- ◆ Establishment of community and facility-based re-treatment services

2.2. DRAINAGE, MOSQUITO PROOFING, GENERAL SANITATION

Malaria transmission in Ghana can be stratified into 5 distinct epidemiological types, namely: -

- **Tropical Rain Forest** - covering the middle forest zones of Ashanti, Eastern, Western, Brong Ahafo and Central Regions.
- **Coastal Lagoons and Mangrove Swamps** of Volta, Central, Western and Greater Accra Regions.
- **Savannah** - Coastal Savannah of the Greater Accra and the Northern Savannah of Northern, Upper West and Upper East Regions.
- **Urban Areas**, and
- **Development-related areas** such as irrigation projects and small scale mining areas

The epidemiological stratification above is based mainly on studies carried out in the country in the pre-independence era, dating as far back as the 1930s (Colbourne and Wright, 1955a,b). The creation of the Volta Lake in the early 1960s and the establishment of economic activities (i.e. mining and irrigation schemes) across the countryside have modified the epidemiology of malaria transmission considerably. Furthermore, the rainfall pattern in parts of the Eastern and Brong Ahafo regions has been influenced by the loss of the tropical forest through intensified logging and farming activities.

Recent rural-to-urban migration in search of economic and educational opportunities has created densely populated communities, especially in the peri-urban areas, with the attendant increase in human activity and adverse effects on the environment. The unsatisfactory management of the environment in these areas has resulted in artificial collections of water, which support the breeding of the vectors, especially after the rains.

Even though environmental management has only limited value in malaria control, it is important for the control of other vector-borne diseases like filariasis and Yellow fever that are prevalent also in Ghana. All sanitation-related diseases like cholera, diarrhoea and viral hepatitis are also greatly reduced through application of environmental management interventions.

In the spirit of RBM as a pathfinder to strengthen other disease control activities, environmental management initiatives shall be supported in urban areas mainly through advocacy activities as part of the overall strategy to roll back malaria.

The Public Health Department of the Metropolitan and Municipal Assemblies (formerly City Councils) in the country have for decades been responsible for sanitation management and environmental hygiene of urban areas. The Metropolitan and Municipal Assemblies have Environmental Officer (formerly known as “*Town Councillors*” i.e. Health Inspectors), who conduct periodic house-to-house inspections. Sanitary and environmental hygiene offenders are charged and prosecuted at local courts and tribunals.

The Ministry of Local Government and Rural Development has recently launched the National Environmental Sanitation Policy and the Expanded Sanitation Inspection & Compliance Enforcement (ESICOME) programme for sanitation management. It is being anticipated that an enabling environment would be created, for the development and enforcement of appropriate laws and byelaws enforced to enhance their work.

A national Environmental Sanitation Council has been recently constituted under the MLGRD to see to the implementation of ESICOME/Sanitation Policy.

The MLGRD has introduced an ESICOME project, which is an offshoot of a National Environmental Sanitation policy that it has developed. The policy is to be implemented by Environmental Health Officers in the districts. An Urban Env. Sanitation Project (UESP) is also in place that looks at waste management and drain construction in selected urban areas.

A day’s forum on environmental management in respect of malaria was held in Accra in September 1999, bringing together all stakeholders to deliberate on way forward. In the spirit of RBM that seeks to use malaria control as a pathfinder to strengthen other disease control activities, RBM shall support the implementation of ESICOME/UESP in partnership with MOLGRD. Specific interventions shall include general cleanliness, filling up of borrow pits, ditches, irrigation ponds and canals, especially in urban, mining, irrigation and other development areas. These measures shall directly benefit control of water and sanitation-related diseases.

In addition, advocacy meetings shall be held with Ministry of Works and Housing, TDCs, and District Administrations to ensure that new and old houses are screened against mosquitoes.

Specific Activities

- ◆ Advocacy to promote implementation of ESICOME/Environment Sanitation Policy
- ◆ Organisation of review meetings on Environmental management on malaria yearly.
- ◆ Advocacy meetings with MDAs on screening of houses against mosquitoes.

2.3. LARVICIDING (BIOLOGICAL AND CHEMICAL)

Biological control

The Institute of Aquatic Biology, now Water Research Institute, has over a decade been working on the biological control of mosquito populations. Their work has focused on laboratory isolation of bacteria strains toxic to mosquito larvae, phenotypic characterization and serotyping, alkali-solubilization of protein toxins, protein analysis, preparation of antisera, immunoblot analysis, bioassays with mosquito larvae and tissue culture assays. These studies has produced 10 isolates of Bacillus sphaericus in the country known to be very toxic to mosquito larvae (Ofori, 1997).

The B. sphaericus is notably well adapted to polluted waters such as polluted urban drains and lagoons. Over 30 virulent strains have been isolated that are most active against Culex followed by Anopheles.

Field trials with some of these local strains, yielded larval mortalities of the order of 90 – 100% in fields supporting populations of Anopheles and Culex larvae. The local strains were also found to be safe to a wide range of aquatic invertebrates including some natural enemies of mosquitoes – water bug, beetle and others that naturally suppress the population densities on the mosquito larvae. Currently more trials are taking place in some parts of the Akuse and Ashiaman rice fields.

Ofori (1997) observed that B. sphaericus used in conjunction with larvivorous fish such as the local guppy (Pecilia reticulata) which has proved effective against mosquito larvae would yield best results. Guppies abound in our drains and can be cultured easily as biocontrol agents given their high reproduction and rapid maturation rates. They can tolerate high levels of organic pollution, salinity and temperature. Their small size (i.e. 3 – 6 cm) enables them to penetrate shallow weedy areas to seek out larvae.

Though biological control can be used to control mosquitoes, stimulating interest in microbial insecticides in Ghana has not attracted much attention from investors. This is apparently due to the large capital outlay and funding for biological control measures and the inability to develop microbial insecticide into marketable product (Ofori, 1997). RBM shall support pursuing research into this area of biological control.

CHEMICAL

The Atomic Energy Commission, is using radio-active rays to sterilise mosquitoes and it is the intention of RBM to collaborate with this project.

Specific Activities

- ◆ Identification of major breeding sites in urban and development areas
- ◆ Limited larviciding of selected breeding sites and focal spraying of houses
- ◆ Support legislation of in-door residual spraying in hotels and other public places
- ◆ Support meetings with hospitality industry and other stakeholders.
- ◆ Advocacy activities

2.4. IN-DOOR RESIDUAL SPRAYING & BIOLOGICAL CONTROL

In-door residual spraying with new insecticides on the market is able to keep mosquitoes away for about 4 months. There are a number of private agencies currently providing this type of service, especially in some urban areas. Limited larviciding of selected breeding sites of mosquitoes coupled with limited focal spraying around these sites, especially in urban areas, have proven successful in controlling the mosquito population. The nuisance factor cannot be lightly dismissed and it is an expressed concern of the highest political authorities in Ghana.

In a study on the use of bednets in Ghana, 40-60% of those who used nets said they used them on account of the nuisance of mosquitoes. The added benefit of undertaking limited vector control measures shall be reduction in the incidence of Filariasis and Yellow fever, which are also endemic in Ghana.

The Public Health Departments of the Metropolitan and Municipal Assemblies are equipped with manual and motorised spraying pumps for aerial spraying. Focal spraying is normally undertaken in slums, swampy areas, areas around man-made “ponds” created by building/construction and mining activities etc. Mining companies and other companies sited around swampy areas (primarily mosquito breeding sites) usually engage their services. The Metropolitan and Municipal Assemblies do recognise that their focal spraying activities are grossly inadequate due to lack of personnel, equipment, training, funds and more importantly lack of appropriate laws and bye-laws for prosecuting sanitary and environmental offenders.

RBM shall therefore support vector control measures (such as limited larviciding, spraying) in line with its principle of being a pathfinder for the control of other diseases, through appropriate public and private partnerships as an adjunct to ITMs.

2.5. CHEMOPROPHYLAXIS

Effective chemoprophylaxis in pregnancy is known to reduce the impact of malaria on low birth weight, infant mortality and reduce severe malaria in pregnancy (WHO/MAL/96.1075 Rev. 1).

A study in 1993 indicated that about 64% of expatriates in Ghana interviewed were taking regular malaria chemoprophylaxis.

The policy of MOH is to provide free chloroquine at all public facilities for pregnant women. RBM shall support the implementation of this policy. It shall also encourage private practitioners (including midwives) to provide chemoprophylaxis for pregnant women. RBM shall also provide information through immigration department and port authority for immigrants in to the country on need for chemoprophylaxis.

Specific Activities

- ◆ Advocacy for use of chemoprophylaxis during pregnancy
- ◆ Development of fliers for immigrants
- ◆ Review meetings on chemoprophylaxis drug policy
- ◆ Dissemination meetings on new policy

STRATEGY THREE: RESEARCH AND DEVELOPMENT

Primary Interventions

- Increased availability of funds for research
- Focused research agenda with emphasis on results
- Capacity development for operations research
- Improved dissemination and utilisation of research

Operational Approaches for Primary Interventions

3.1. Increased Availability of Funds for Research

3.1.1. Set aside Research Budget

A major reason why research is not done is the fact that funds for research are not easy to come by. Even when available it is not easily accessible. Though there is a budget line in regional and district health budgets the amount allocated into it by managers is usually too small to make an impact.

RBM shall contribute to the funding of priority research by setting aside a special research fund for operational research.

SPECIFIC ACTIVITIES

Establish research fund for priority research in collaboration with Health Research Unit.

3.1.2. Link up Researchers to Funding Agencies

Another strategy shall be to link up researchers with funding agencies that may express interest in funding certain research projects.

SPECIFIC ACTIVITIES

Linking researchers with funding agencies through advocacy activities.

3.2. *Focused research agenda with emphasis on operations research*

There is an on going Ghana-Dutch research collaborative initiative under the health research Unit, which is partly looking at how various stakeholders (policy makers, research community, community etc) come by their research agendas and implement them. This is to lead to a 5-year POW to be developed for implementation.

RBM shall support the development and implementation of this research collaborative project with special focus on operations research.

SPECIFIC ACTIVITIES

Participation of RBM team in development of POW for Ghana-Dutch research project in partnership with HRU.

3.3. *Capacity development*

RBM shall support capacity building research projects such as envisioned in the Ghana-Dutch project mentioned above.

SPECIFIC ACTIVITIES

- ◆ Training in malaria specific research
- ◆ Attend international conferences and workshops
- ◆ Provision of computers and other logistic items
- ◆ Participation in Ghana-Dutch capacity building project.

3.4. *Improved Dissemination and Utilisation of Results*

Many health managers even after struggling to perform some useful research find it difficult to write their work for publication or have adequate forum to disseminate their findings. Not surprisingly, research findings are not used by those who need them.

During the desktop review of work done on malaria in Ghana, one finding was the non-availability of copies of either published or non-published research works. A number of strategies shall be adopted to improve dissemination and utilisation of research findings.

3.4.1. Forum for dissemination of research findings

RBM shall support the organisation of forums for researchers to present their works to stakeholders

SPECIFIC ACTIVITIES

- ◆ Organise a forum once a year for researchers to present work on malaria

3.4.2. Scientific journals

RBM shall subscribe to peer review journals.

SPECIFIC ACTIVITIES

- ◆ Subscription to international journals
- ◆ Distribution of relevant materials on malaria research

3.4.3. Formal coordination mechanisms between research institutions, Universities, MOH departments, communities etc shall be developed to improve dissemination and utilisation of research findings.

SPECIFIC ACTIVITIES

- ◆ Twice yearly coordinating meetings of stakeholders
- ◆ Produce and disseminate reports on meeting to all stake holders

3.4.4. Establish RBM newsletter to share information on malaria and malaria-related activities

SPECIFIC ACTIVITIES

- ◆ Put in place an editorial board
- ◆ Solicit for input, articles, reports from regions, districts, other health-related sectors, NGO's etc.
- ◆ Produce newsletters and disseminate (distribution: adopt the TB or Guinea Worm approach)
- ◆ Get feedback form readers to improve upon quality

STRATEGY FOUR: CREATE AND SUSTAIN PARTNERSHIP

RBM will focus on creating and sustaining partnerships for malaria control. The immediate output from developing a partnership between the major stakeholders is to establish a social movement that is supported by a well-coordinated national action to roll back malaria.

PRIMARY INTERVENTIONS

- ◆ Functional Partnerships and partnership mechanisms between departments and programmes within health sector.
- ◆ Functional Partnerships and Partnership mechanisms with and between development agencies

- ◆ Functional partnerships and mechanisms with and between government sectors
- ◆ Functional Partnership and mechanisms with and between NGOs, private sectors and informal sectors
- ◆ Functional partnership with the community and traditional health providers

OPERATIONAL APPROACHES FOR PRIMARY INTERVENTIONS

4.1. Functional Partnerships and partnership mechanisms between departments and programmes within health sector.

4.1.1. Agreed Plans of Action

RBM secretariat has already linked up with a number of other relevant Divisions, units and programmes within the Health sector to solicit their input into the Initiative. RBM shall further collaborate with these and others within the health sector during the design and implementation of Plans and action. Some of these are:

- IMCI, coordinated by Child Health unit, for capacity building aspect of case management
- CBS, coordinated by surveillance unit, for improving referral and reporting
- CBHS, coordinated by task force under Navrongo Team, to improve access to services
- NDP, in respect of drug quality and other aspects of drug availability etc
- Health Education Unit, for IEC component
- ICD, for quality assurance aspect and clinical support
- HRU, for research coordination.

RBM shall operate within the existing regional and district structures of MOH for implementation of Plans of Action. Regional and District health administrations shall be encouraged to incorporate relevant aspects of the Agreed plans in their annual plans of actions. This is already partly being done through MTEF budgeting of the Ministry.

SPECIFIC ACTIVITIES

- ◆ Participation of RBM team in design of other programmes and initiatives relevant to malaria control and management.
- ◆ Advocacy for success of these programmes

4.2. Functional Partnerships and Partnership Mechanisms with and between Development Agencies

During the sensitisation and consensus-building phase, a number of development partners were contacted individually and as a group to obtain their support and participation in the RBM initiative. Some of them financially supported aspects of the inception process while others actively participated in working groups that developed the draft RBM strategic document.

All the major health partners in Ghana have constituted a monthly forum during which important issues on health and health services are discussed. The RBM secretariat was invited

to officially present the RBM concept during one of the monthly meetings of all the partners. There is the need to foster and further strengthen the collaboration that is developing.

4.2.1. Representative Consultative bodies

A national Coordinating Committee has been established at the national level comprising representatives of the development partners (World Bank, DiFID, WHO), Ministry of Local Gov't, Ministry of finance, Ministry of Environment, Science & Technology, Plan International, and members of National Technical Committee on Malaria. This followed suggestions made during the first of the sensitisation and consensus building meetings in Accra.

The Coordinating body is to coordinate the activities of RBM during the development and implementation phases. MOH has been mandated to serve as the secretariat for the body. RBM shall support the coordinating functions of the National Coordinating committee.

SPECIFIC ACTIVITIES

- ◆ Quarterly meetings of National Coordinating Committee
- ◆ Meetings of sub-committee of NCC

4.2.2. Agreed plans of work

Annual plans of action shall be developed and monitored in consultation with development partners

SPECIFIC ACTIVITIES

- ◆ Preparation of annual POW

4.2.2. Regular feedback

The RBM secretariat shall provide quarterly progress report to all development partners.

SPECIFIC ACTIVITIES

- ◆ Preparation of quarterly and annual reports
- ◆ Printing and distribution of reports

4.3. *Functional Partnership and Partnership Mechanisms with and between Government Sectors*

4.3.1. MOUs and agreed POW

Relevant government sectors such as MOE and MTGRD that shall be supported to perform agreed POW shall sign MOUs with the Coordinating body to perform specified activities and account for them. [MOE and SHEP; MLGRD and ESICOME; CSIR and biological control...]

SPECIFIC ACTIVITIES

- ◆ Development of MOUs

4.3.2. Project champions

Project champions shall be identified in relevant sectors to champion the cause of RBM at all levels.

SPECIFIC ACTIVITIES

- ◆ Selection of RBM product champions in relevant MDAs at various levels
- ◆ Advocacy and coordinating activities of product champions

4.3.3. Consultative bodies

Representatives of relevant sectors shall serve on the coordinating bodies at all levels.

4.4. Functional Partnership and Partnership Mechanisms with and between NGOs, Private Sectors and Informal Sectors

4.4.1. Relevant activities shall be contracted out to suitable NGOs or private sectors depending on their comparative advantage. [advertising agencies and IEC; Noguchi and other research agencies and research].

Specific Activities

- ◆ Development of contract documents
- ◆ Monitoring of implementation of contracts

4.5. Functional Partnership with the Communities and Traditional Health Providers

4.5.1. Partnership with Traditional Health Sector

Specific Activities

- ◆ Establish links with the Director of traditional medicine at MOH
- ◆ Support research into herbs for managing malaria (by CSIR and others..)
- ◆ Involve traditional birth attendants in malaria management

4.5.2. Strengthen Partnership with Communities

Specific Activities

- ◆ Strengthen/facilitate the formation of district health committees (which are to be formed under the Ghana health service).
- ◆ Encourage and support links with unit committees and district assemblies with the health sector at the sub-district and district levels respectively.
- ◆ Empower communities to take informed decision. This will be achieved through the CBHI. “Influential and respected” people for example, soothsayers, will be made allies in the dissemination of malaria information.

	<p>3. Quality of treatment for malaria improved.</p>	<p>3. Revision of existing training modules and treatment guidelines on management of simple and complicated malaria. Production of training materials and treatment guidelines. Training of doctors, nurses/midwives, pharmacists, medical assistants, etc. Training of chemical sellers and private pharmacies. Advocacy for implementation of IMCI. Identify facilities requiring laboratory services. Provide laboratory equipment for 20 district hospitals. Train laboratory personnel in laboratory diagnosis of malaria. Undertake studies into quality and efficacy of anti-malaria drugs. Advocacy to support work of NDP. Development of drug policy on malaria. Research into efficacy of herbal preparations by Mampong Akuapim/Noguchi. Advocacy activities targeted at chemical sellers and pharmacists etc. Support monitoring of Quality Assurance Programmes (QAPs) in hospitals. Advocacy for institutionalisation of QAPs in health institutions. Involvement of RBM team in establishing clinical supervision systems Support monitoring of clinical supervision system Advocacy for development of appropriate incentive system. Advocacy for development of suitable HIS. Establish database on malaria. Develop appropriate user-friendly tools to capture relevant data on malaria.</p>
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	4. Basic services accessible to the sick.	4. Provide logistic support for outreach activities. Support to directorate for alternative medicine to monitor activities of herbal practitioners. Meetings with Association of Chemical sellers on their practice once a year. Support Unit responsible for Private Practitioners in monitoring and coordination. Participation in development of suitable concept to facilitate access to services provided by private practitioners.
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MAIN COMPONENT STRATEGIES	MAIN EXPECTED OUTPUTS	MAIN ACTIVITIES
B) USE OF MULTIPLE PREVENTION STRATEGIES	1. Increased use of ITMs by children and pregnant women	1. Development of policy on ITMs. Printing of policy on ITMs. Production of radio and TV commercials. Production of Print materials. Media Placement (radio, TV, Print). Road Shows at community level. Promotional activities by MOH's network of facilities and personnel. Celebration of Malaria Awareness Months Promotion of ITMs through informal sector-schools, hotels, district assemblies. Advocacy to include ITMs in school curriculum. Advocacy and promotional activities to link users with commercial sector Promote local manufacture of nets. Advocate for tax waiver on nets and insecticides. Development of subsidising strategies and building consensus on how to reach the poor with affordable nets. Identification of community agents for re-treatment of ITMs. Adaptation of training materials. Printing of training materials. Training of community agents and others on net re-treatment. Establishment of community and facility-based re-

	<p>2. Improved drainage, mosquito-proofing of houses and general sanitation</p> <p>3. Reduction of mosquito population through in-door residual spraying and larviciding.</p> <p>4. Chemoprophylaxis used regularly during pregnancy.</p>	<p>treatment services.</p> <p>2. Advocacy to promote implementation of ESICOME/Environment Sanitation Policy. Organisation of review meetings on Environmental management on malaria yearly. Advocacy meetings with MDAs on screening of houses against mosquitoes.</p> <p>3. Identification of major breeding sites in urban and development areas. Limited larviciding of selected breeding sites and focal spraying. Support legislation of in-door residual spraying in hotels and other public places. Support meetings with hospitality industry and other stakeholders.</p> <p>4. Advocacy for use of chemoprophylaxis during pregnancy. Development of fliers for immigrants. Review meetings on chemoprophylaxis drug policy. Dissemination meetings on new policy.</p>
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MAIN	MAIN EXPECTED	MAIN ACTIVITIES
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COMPONENT STRATEGIES	OUTPUTS	
C. PRIORITY ATTENTION TO RESEARCH AND DEVELOPMENT	<p>1. Increased availability of funds for research.</p> <p>2. Focused research agenda available with emphasis on operations research.</p> <p>3. Improved dissemination and utilisation of results.</p> <p>4. Capacity in malaria research improved.</p>	<p>1. Establish research fund for priority research. Linking researchers with funding agencies.</p> <p>2. Participation of RBM team in development of POW for Ghana-Dutch research project.</p> <p>3. Organise a forum once a year for researchers to present work on malaria. Subscription to international journals. Distribution of relevant materials on malaria research. Twice yearly coordinating meetings of stakeholders. Establishment of RBM newsletter.</p> <p>4. Training in malaria specific research. Attend international conferences and workshops.</p>

MAIN COMPONENT STRATEGIES	MAIN EXPECTED OUTPUTS	MAIN ACTIVITIES
D) CREATE AND SUSTAIN PARTNERSHIP	<p>1. Functional Partnerships and partnership mechanisms between departments and programmes within health sector.</p> <p>2. Functional Partnerships and Partnership mechanisms with and between development agencies.</p> <p>3. Functional Partnership and Partnership mechanisms with and</p>	<p>1. Participation of RBM team in design of other programmes and initiatives relevant to malaria control and management. Advocacy for success of these programmes.</p> <p>2. Quarterly meetings of National Consultative Committee. Preparation of annual POW. Preparation of quarterly and annual reports. Printing and distribution of reports.</p> <p>3. Development of MOUs. Selection of RBM product champions in relevant MDAs at various levels. Advocacy and coordinating activities of product</p>

	<p>between government sectors.</p> <p>4. Functional Partnership and Partnership mechanisms with and between NGOs, private sectors and informal sectors.</p>	<p>champions.</p> <p>4. Development of contract documents. Monitoring of implementation of contracts.</p>
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Management and Implementation Arrangements

The implementation of RBM interventions and activities will be at all levels i.e. national, regional, district and community levels, and will essentially be the responsibility of partners. The management arrangements will therefore focus on brokering and coordinating the partnership rather than implementing specific malaria control interventions. Specifically, the management structures at each level of the health delivery system will focus on:

1. Creating a level playing field for partners' participation in RBM activities
2. Provide a strategic direction on RBM and coordinate partners activities
3. Develop annual RBM plans in the context of the RBM strategic plan
4. Support partner organisations and institutions, and communities to develop and implement programmes that are consistent with their mandates and contribute to RBM.
5. Mobilize political, institutional and community support for RBM
6. Mobilize, manage and account for resources allocated to RBM
7. Organise annual participatory planning and evaluation meetings

At the national level, there will be a national RBM coordinating committee, which is multi-sectoral in orientation and includes representatives from the private sector. The committee will be supported by a secretariat housed within the public health division of MOH and the national technical committee on Malaria will be a subcommittee of the RBM committee. The RBM secretariat shall communicate all decisions and resolutions to other sector Ministers and institutions through the Minister of Health.

The membership of the committee will be representatives from institutions rather than individuals. It is therefore expected that, the representatives will develop and institutionalise mechanisms for reporting back on RBM activities within their respective organisations.

The national level committee will develop guidelines, and provide support to the regional and district level committees

Existing intersectoral health committees at the district and regional levels will ensure that RBM functions are performed by, and reconciled between institutions. The focus at these levels will be on ensuring that, a process for RBM coordination is established rather than structures.

The RHMT and DHMTs will act as the secretariat to the committees. They will however communicate all decisions and resolutions to partners through the regional minister and district chief executives.

MONITORING AND EVALUATION

The Monitoring and Evaluation Process

Monitoring and evaluation of RBM will be taken forward in three independent but related components:

- Routine monitoring of the programme activities and outputs
- Periodic evaluation of programme outcomes and impact, and efficacy of drugs and insecticides
- Annual programme reviews

Routine Monitoring of Programme Activities and Outputs

The focus will be on monitoring of planned activities within the programme of work for the period, and agreements between partners. It will draw on the existing information and reporting systems of partners and will be driven by a core set of agreed indicators that covers the content of partnership contracts or MOUs, outputs, and systems development and performance.

Under this component, every partner will be expected to report to the district secretariat each quarter on the progress of activities and outputs in their relevant RBM programme of work. These will be recompiled, analyzed and submitted to the regional secretariat where it will be recompiled and submitted to the national level secretariat.

At each level, these reports and planned programme of work will form the basis of committee meetings.

Periodic Evaluations

These evaluations will be commissioned periodically by the national RBM coordinating committee to attempt to answer whether the RBM has achieved the desired epidemiological and socio-economic impact, human and vector behavior relevant for malaria control and the continuous efficacy of drugs, insecticides etc.

Programme Reviews

This component will form the overall strategic review of RBM and will be carried forward jointly by the local RBM committees and external team of experts. This review will be carried out annually, mid term and end of term. These reviews will draw on the information generated from routine monitoring as well as evaluation studies that have been commissioned.

The programme reviews will start with district reviews, followed by regional reviews and end with a national review of RBM. While the district and regional reviews will essentially be

internal reviews the national review will be carried forward jointly by the MOH and external experts.

These reviews will assess the performance of RBM at all levels of the health delivery system. Specific areas of the review will include technical and operational impact of RBM, as well as the economics, financing and systems development and performance of the RBM. The reviews will culminate at all the levels, (district and regional and national levels), with stakeholder meetings that will form a basis for replanning for the next year.

INDICATORS AND THEIR MEASUREMENT

IMPACT OF RBM

Indicators	Means of verification	Frequency	Relevant Level
% Reduction in malaria Mortality	Review of Hospital Records	Annual Monitoring of Trends from sentinel sites. Comprehensive Assessment every 3-5 yrs	All levels National Level
% Reduction in Severe Malaria in Children <5 yrs on admission.	-do-	-do-	-do-
% Reduction in Severe malaria in Pregnancy	-do-	-do-	-do-

PROCESS INDICATORS

A. FOR CASE MANAGEMENT

i. Early Recognition and Prompt Treatment of Fever

Indicators	Means of Verification	Frequency	Relevant Level
Proportion of Health facilities with IEC materials and training materials on home-based care.	Review of records	Annually	National
Proportion of targeted CBHW's trained in malaria case management	Review training reports	Annually	All levels
Proportion of targeted teachers, extension officers etc, who were trained in malaria	Review training reports	Annually	All levels

case management			
Number of health institutions with the requisite logistics for supervising CBHW's	Review of records	Annually	All levels
Proportion of planned supervisions (to CBHW's), undertaken by supervising level. (health institution).	Review supervisory reports	Half-yearly	Regional and district levels

II. Ensuring Appropriate Referral

Indicators	Means of Verification	Frequency	Relevant Level
Proportion of health facilities with the appropriate logistics (ambulance, communication system etc.) for referral.	Review of records	Annually	National

iii. Improving Quality of Care

Indicators	Means of Verification	Frequency	Relevant Level
Proportion of health facilities with training materials (on simple and severe malaria case management)	Review institution reports/ records	Annually	National
Percentage of targeted health workers (doctors, pharmacists, nurses, medical assistants, laboratory technicians) given in-service training on malaria management (simple and severe)	Review institution reports/ records	Annually	National
Number of health facilities with national drug policy and treatment guidelines on malaria	Review institution reports/ records	Periodic???	National
Proportion of trained	Institutional survey,	Two-yearly	

health workers who can correctly apply criteria for diagnosing and treating patients in target group	exit interviews of patients		
Proportion of health facilities with no stock-out of anti-malaria drugs in the previous three months	Review of records at health facilities	Annually	All levels
Proportion of health facilities with user-friendly reporting formats for capturing malaria data	Review records	Annually	All levels
Proportion of the health facilities with user-friendly forms, whose monthly reports are received at the next higher level of health system within 10 days after end of the report month	Institutional interviews	Quarterly	All levels

OUTCOME INDICATORS: CASE MANAGEMENT

i. Early Recognition and Treatment Of Fever

Indicators	Means of verification	Frequency	Relevant Level
% of mothers / caretakers who know signs and symptoms of severe malaria	Community Surveys	Annual	All levels but coordinated by the national level
% of children <5 years with fever treated correctly at home	Community Surveys	Annual	All levels but coordinated by the national level

ii. Ensuring Appropriate Referral

Indicators	Means of Verification	Frequency	Relevant Level
Proportion of health workers who refer patients of target groups (with malaria-related cause), according to	Review institutional records	Annually	All levels coordinated by national level.

the national criteria for referral.			
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iii. Improving Quality of Care

Indicators	Means of verification	Frequency	Relevant Level
% Severe malaria cases treated according to policy	Review of Hospital records	Annual	-do-
% of health workers managing fever according to policy	Institutional Survey	Annual	All levels but coordinated by national level
Proportion of facilities by category with adequate equipment, drugs and logistics to assure quality of care	Institutional Survey	Annual	All levels but coordinated by national level

iv. Increase Access to Health Services

Indicators	Means of verification	Frequency	Relevant level
Proportion of patients among those for whom anti-malaria drugs were prescribed, who: -were able to obtain full treatment dose prescribed -were able to afford cost of treatment	Survey	Annually	All levels coordinated by National level
Proportion of communities with a source of anti-malaria drugs accessible within less than one hour's walk	Survey	Annually	All levels coordinated by National Level

PROCESS INDICATORS: MULTIPLE PREVENTION

Indicators	Means of verification	Frequency	Relevant Level Responsible
Availability (or not) of Policy on ITM's			
% of chn <5 yrs sleeping under ITNs	Household Surveys	Annual	All levels but coordinated by the

% of pregnant women sleeping under ITNs			national level
Number of targeted hotels, public places carrying out Indoor residual spraying	Survey	Annual	All levels
Proportion of targeted breeding sites with larviciding carried out	Special survey	Annual	National
Availability/coverage of nets, insecticides and net treatment sites	Market Surveys	Quarterly	All levels but coordinated by national level
% of health facilities providing chemoprophylaxis during ANC according to policy	Institutional Survey	Annual	All levels but coordinated by national level

OUTCOME INDICATORS: MULTIPLE PREVENTION

ITN. Re-treatment rate	Household survey	Annually	All levels but coordinated by the national level
% of pregnant women on chemoprophylaxis	Routine reporting from health facilities/ Annual Surveys	Monthly Annual	All levels National Level
% of health facilities with chemoprophylaxis at ANC and outreach centres according to policy	Institutional Survey	Annual	All levels but coordinated by national level
Entomological Inoculation rate	Special Survey	Annually	National Level

PROCESS INDICATORS: FOCUSED RESEARCH

Indicators	Means of verification	Frequency	Person Responsible
Availability of research Agenda	Review of Annual Plans	Annually	National Level
Availability of Research fund	Review of RBM budget and expenditure returns	Half Annually	National Level
% total budget allocated and disbursed for malaria specific/RBM related research	Review of plans of action and expenditure returns	Annually	All levels but coordinated by National Level

% of health facilities and institutions with capacity (fund, logistics, skills) for carrying out malaria-related research	Institutional survey	Annually	National
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OUTCOME INDICATORS: FOCUSED RESEARCH

% of planned research Commissioned and carried out	Review of minutes and TORs for research	Half Annually	National Level
Proportion of completed researches disseminated through forum, publications etc	Review publications. Interview researchers.	Two yearly	National level
Proportion of targeted stakeholders who regularly receive RBM newsletter.	Interview stakeholders	Annually	National level
Proportion of completed researches incorporated into policy.	Review policy documents	Two yearly	National level

PROCESS INDICATORS: PARTNERSHIP BUILDING

Indicators	Means of verification	Frequency	Person Responsible
% of scheduled coordinating committee meetings held	Review of minutes of meetings	Quarterly	National Level
Proportion of health talks (notably malaria), delivered by identified key community personnel	Review reports	Annually	District and sub-district levels, coordinated by national level.
Number of Unit committee and assembly meetings deliberating on health issues (notably malaria)	Review minutes of meetings of committees	Annually	-do-

OUTCOME INDICATORS: PARTNERSHIP BUILDING

% of targeted partnership	Review of reports	Monthly	National Level
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committees established (for year one only)			
% of partners achieving their RBM targets in MOU	Review of partners reports	Monthly	All Levels
Resources mobilized through the partnership by source	Review of records	Annually	All levels and aggregated at national level
Types/categories of partnerships/linkages established	Review of MOUs and minutes	Half yearly	All levels but aggregated at national level
Number of established CBHI's still functioning	Community Survey	Annually	All levels but aggregated at national level
Number of functioning CBHI's with community support of any type.	Community Survey	Annually	All levels but aggregated at national level

Research Areas Relevant to Monitoring and Evaluation

1. Efficacy studies of available anti-malarial drugs and implications for treatment policy.
2. Efficacy studies of available insecticides
3. KAP studies on use of ITN's
4. Vector density and bionomics in Ghana
5. Socio-economic evaluation of RBM
6. Biological control of mosquitoes
7. Age/sex-specific mortality and morbidity due to malaria
8. Efficacy studies on herbal preparations.