## DETERMINING POLICY ADEQUACY AND LEVELS OF IMPLEMENTATION FOR THE ATTAINMENT OF THE MILLENNIUM HEALTH GOALS: THE CASE OF MALARIA CONTROL IN UGANDA

# A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY OF MAKERERE UNIVERSITY

BY

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### **DEDICATION**

This work is dedicated to my late mother Victoria Nankinga Lubanga, my late father Isaya Lubanga, and late maternal grandmother Yuliya Nabasirye; all of whom never lived to cerebrate with me the completion of my doctoral program and get the joy out of their contributions to my education..

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## ABBREVIATIONS AND ACRONYMS

ACT	Artemisinin Combination Therapy
AED	Academy for Educational Development
AIM	African Initiative for Malaria Control
AQ	Amodiaquine
CAH	Community action for health
CBO	Community based organization
CDA	Critical discourse analysis
CDD	Community drug distributor
CDO	Community Development Officer
CHW	Community health worker
COU	Church of Uganda
СМ	Celebral malaria
CQ	Chloroquine
DDT	Dichloro-diphenyl-trichlorethane
DHT	District health team
DHMT	District health medical team
FDS	Full direct subsidy
FY	Financial year
GDP	Gross domestic product
GOU	Government of Uganda
HIV/AIDS	Human immune virus/Acquire immune deficiency syndrome
HBMF	Home based management of fever
HBM	Health belief model
HSSP	Health sector strategic plan
HSD	Health sub district
HSR	Health sector reform
HMIS	Health management information system
HC	Health centre $(5, 4, 3, 2)$
IMCI	Integrated management of childhood infections
IMF	International Monetary Fund
IRC	International Water and Sanitation Centre
IRS	Indoor residual spraying
ITN	Insectide treated net
IVS	Indirect voucher subsidy
IPT	Intermittent presumptive treatment
IEC	Information, education and communication
KAB	Knowledge, attitude, behaviour
KAP	Knowledge, attitude, practices
LC	Local council (1, 2, 3, 4, 5)
LGDP	Local Government Development Program (1, 2)
LLIN	Long lasting insectide net
MDGs	Millennium development goals
МНСР	Minimum Health care package
MoFPED	Ministry of Finance Planning and Economic Development

MoH	Ministry of Health
MTEF	Medium term expenditure framework
NAADS	National Agricultural Advisory Services
NDA	National Drug Authority
NEMA	National Environment Management Authority
NGO	Non-governmental organization
NMS	National Medical Stores
OPD	Out patient department (of health centres)
ORS	Oral re-hydration therapy
PEAP	Poverty eradication action plan
PHC	Primary health care
PSU	Public social utilities
PSS	Personal social services
PDS	Partial direct subsidy
PIASCY	Presidential Initiative on AIDs Strategy for communication to
	Youths
PMTCT	Prevention of mother to child transmission
RBM	Roll Back Malaria
RDT	Rapid diagnostic tests
SIDA	Swedish International Development Agency
SCOUL	Sugar Corporation of Uganda Limited
SCF	Save the Children Fund
SP	Sulfadoxine/pyrimethamine (fansidar)
SPSS	Statistical Package for the Social Sciences
SSA	Sub Saharan Africa
ТВ	Tuberculosis
TBA	Traditional birth attendant
UBOS	Uganda Bureau of Statistics
UNMHCP	Uganda National Minimum Health Care Package
UDHS	Uganda demographic health survey
UPE	Universal primary education
UN	United nations
UNAS	Uganda National Academy of Sciences
UNICEF	United Nations International Children Education Fund
UNDP	United Nations Development Program
VHT	Village health committee
WB	World Bank
WHO	World Health Organisation

### **DEFINITION OF SOME TERMS**

**Prevalence**: The number of instances of a given illness/disease in a given population at a designated time.

**Incidence**: the number of new cases of illnesses/disease in a defined population, within a specified period of time.

**Endemic or stable malaria**: When there is a constant incidence of cases over a period of many successive years.

**Epidemic**: The occurrence in a community or region of cases of an illness, specific health related behaviour, or other health related events in excess of normal expectancy.

**Holo-endemic**: Intense year round malaria transmission, where populations' level of immunity reaches a high level after early childhood.

**Hyper-endemic**: Seasonal transmission, where the level of immunity offers little protection from disease no matter the age group.

Accessibility: Absence of obstacles that block entry to the service delivery network. The obstacles could be geographical location, administrative rituals, eligibility policy, or language among others.

Accountability: Being held responsible for outcomes from the provision or non-provision of health care services.

### ABSTRACT

Uganda and Sub-Saharan African (SSA) countries in general, are not making headway in achieving the health related Millennium Development Goals (MDGs) and especially reducing the under-five child mortality. While there are different ways to mitigate this problem including improving the economic growth of countries, policy choices are considered critical in determining improvement of social welfare and achieving sustainable development. This study investigated whether disease control policy was adequate to achieve the desired social goals. This was done by studying the household illness/disease experiences and health care system implementation experiences. Implementation experiences were used to interrogate policy because the two are iterative elements in a continuous loop each informing the other. Implementation success depends on the robustness of a policy; and, therefore, a need to determine the elements that inform an adequate policy. Malaria control in Uganda was used as the case of study for extrapolation to other common diseases that afflict children in SSA. Because of the iterative relationship between policy and implementation, malaria control implementation guidelines were broadly considered as policy.

The study used the Implementation Theory, the Life Model Theory, the Human Rights Perspective, the Health Belief Model, and Community Organization concepts as analysis tools. Qualitative and quantitative methods, theories, and data were triangulated in a complementary and integrative manner within a cross-sectional retrospective design. The study of the implementation experiences was carried out in Mukono and Mpigi districts of Uganda covering a sample of 543 of rural and urban households and 138 health workers and other significant people. Data was collected using personal interviews with child carers, unstructured interviews with key informants, and document reviews. A critical discourse analysis of the policy documents was done to understand the key ideas, the underlying theories, the values, assumptions and the extent it addressed the households' illness/disease control needs, and values. The needs and values were distilled from the household illness, management, and service utilization experiences.

Findings have revealed that the disease control policy does not have the capacity to control and prevent the most prevalent diseases in SSA because it of its inadequacy, deficient implementation of the curative, preventive and promotive services, and poor household, community and institutional organization for disease control. The main reasons for policy inadequacy are: - a) the limited scope in problem construction with a tendency to use the biomedical model which emphasizes the individual level risk factors relegating the environmental factors; b) failures to fully address the implementation challenges and threats pertaining to curative and preventive strategies; c) inability to support the different health care systems in accordance with their availability, capacities, comparative advantage to manage uncomplicated and severe conditions, and people's health care seeking values and preferences of a health care provider. Policy does not also adequately provide for social organization, social capital development and empowerment of the health care systems including the households – which factors were found to be risk factors in the sustainance of high morbidity, mortality and disability. Implementation efforts are directed at the provision of curative care and less at primary prevention and

health promotion. Incidentally, curative care is beset with many problems hampering its ability to avert many preventable deaths.

One major underlying explanation for the policy inadequacy is the top-down perspective used to construct the problem. This perspective fails to fully address the constructions of the sufferers of the problem which construction slightly differs from that of the experts. Subsequently, the restricted problem construction ends up limiting the social responses, the actors, the processes, and finally the outcomes. The policy tends to focus attention more on disease and less on health; on individual health and not population health. The disease focus tends to engage more the health workers and less other professions and social service sectors contrary to primary health care (PHC) and health sector reform (HSR) precepts. Communities are less likely to participate in improving their own health because the problem construction does not give them the opportunity. Local governments are less likely to be committed to ensuring people's right to health, and feel accountable for each child's death because of the perception that illness is a personal problem.

The study recommends that there is need to combine the top-bottom and bottom-up approaches during policy formulation processes. It also provides very specific recommendations which are packaged in a framework for designing an adequate policy. The framework consists of content elements, processes, values and an underlying community organization theory for designing a new policy and reformulation of an existing policy. The framework suggests a bigger role for other professionals especially the social workers with an ability to contribute to problem construction with the public health workers; community organization, behavioural and attitude change of service beneficiaries. However, this framework needs to be tested out with other common health problems to assess its validity and reliability in relation to achieving certain outcomes.

### **CHAPTER ONE**

# POLICY ADEQUACY AND ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT HEALTH GOALS IN SUB-SAHARAN AFRICA

#### **1.1 Concerns prompting the study**

There are many policies being made in all social service sectors by government departments in Sub-Saharan African (SSA) countries. For example, within the Ugandan health sector, one would find broad national policies, strategic plans, as well as disease specific policies. Examples of disease entities with specific policies are malaria, and HIV/AIDS. There are also policies targeting conditions of population groups such as children, youths, persons in the reproductive age groups. There are policies on human resource development; and also policies on technology or commodities used in the management and prevention of disease transmission - such as insecticide treated nets and condoms. There are policies addressing intervention strategies like medical treatment, and information, education and communication (IEC). There are policies for service delivery structures and systems such as hospitals and community health workers.

There are many policies because there are also many social problems inflicting humanity. Some of the problems may be new while others may be re-emerging. As a policy is implemented and challenges identified; and as the understanding and constructions of social problems and technology change, these have often called for policy re-formulation-indicating new strategies, and problem solving approaches. The separation of the policy making function from social service implementation (Mills, et al 2001) which is widely practiced in many decentralized SSA countries is increasingly turning policy making into an industry. The specialised function of policy-making by central governments is creating greater zeal to conceive and make policies each passing day in the 21<sup>st</sup> Century more than was the case in earlier centuries.

One implication of likening policy making to an industry is that policy is informed by specified or standardized inputs, processes, actors, and outputs all of which are influenced by the context (Walt and Gilson 1994). Although policy making may follow

similar processes of issue search, filtration, definition, forecasting and priority setting, objective and option analysis, implementation analysis, evaluation, policy succession and termination (Hogwood and Gunn 1984), policy content is bound to be different in places with varied social-cultural, economic and political contexts. This implies that a policy proven to be effective in resolving a problem in one context may not necessarily be the most appropriate to resolving the same problem in another. This calls for individualized policy making taking into account the unique person-environment interactions; thus the interest in the subject area of policy adequacy.

Furthermore, it is common knowledge in policy analysis that how well a social problem is defined and who defines the problem will determine the policy content, implementation, and whether the social problem is solved or not solved to achieve the desired outcomes (Parsons, 1995, Chambers 1993, Hogwood and Gunn 1984). In SSA most remedial measures to problems affecting many people are conceived and designed by technical people in central government departments being confirmed by politicians in national parliaments. Some policies are generated by presidents in their campaign manifestos or state of nation communiqués; while some policies have their origin in the spheres of bilateral donors or multi-national agencies like World Health Organisation (WHO) or the United Nations (UN), the World Bank, United Nations International Children Fund (UNICEF), and International Monetary Fund (IMF) (Okuonzi and Macrae 1995). Generally, most policies including the Millennium Development Goals were generated from the top and passed down to national and sub-regional governments for implementation. This observation raised interest in the subject of policy adequacy given that many people who define the problems do not live in the social economic contexts in which problems are experienced or occur.

Policy has been characterized by international development agencies as a major tool for improving social welfare or the quality of life of the people (UNDP 2003). *Policy choices and structural factors* are reported by UNDP to mediate between economic growth, poverty reductions, and human development. According to the UNDP (2003), it is argued that, "with the *'right' policies*, countries can advance human development even

with low incomes. Policy makers need to focus public policies and investments on noneconomic outcomes even as they focus on growth" (UNDP 2003a:60). The potency of policy is evidenced by developed countries like Japan, Sweden, Norway, the Netherlands, and France which have better health status indicators than Britain because they combined economic growth and social policy focusing on people. The combination is reported to have reduced mortality faster in the above countries than in Britain and the United States of America which depended more on economic growth (MoFPED, 2003). There are also developing countries which have been able to translate relatively low incomes into human development. These include:- Ghana, Cuba, Sri Lanka, India (Kerala State) and Costa Rica, The Republic of Korea, Malaysia and Mauritius (MoFPED 2003, UNDP 2003, Mills et al 2001). Some of these high performing countries like Sri Lanka combined rapid economic progress and social progress – and now have high performing economies.

Given the potency of policy to improve people's quality of life, and given that actually many SSA countries have policies on all aspects of life, it is wondered why SSA countries have some of the poorest health status indicators in the world. SSA countries have some of the lowest life expectancy in the world estimated at 52 years; lower than that of the other developing countries whose life expectancy is 64 years. While the world is midway to the 15-year period set for the attainment of the Millennium Development Goals (MDGs), performance reports have consistently indicated that SSA countries are off track to meet every MDG. Some SSA countries are stagnant or reversing while for others, the social progress made is uneven leaving behind some population groups and regions. Some countries have made significant progress just on a few goals which still need replication and scaling up (UN 2007, 2005, 2003). Many of SSA countries are unlikely to achieve the set goals and targets by 2015.

Of the measurable Goals that the developing countries and SSA in particular are finding hardest to achieve is the one for child mortality – a two-thirds reduction by 2015. Out of the estimated 10.1 million children who die before their fifth birthday every year, 41% occur in SSA and 34% in South Asia. Although the World Summit for Children in 1990,

called upon countries to reduce child mortality to below 70 deaths per 1000 live births by the year 2000, this did not happen for SSA. Under-five child death figures stood at a high of 166 per 1000 live births in 2005 against 185 in 1990 (UNDP 2007a). Therefore, SSA trails behind other continents with 17% of its children being unable to reach age five. Today, child mortality in SSA is twenty nine fold that of developed countries whose average is estimated to be 6 per 1000 live births (Black et al 2003). It is projected that at the current pace most SSA countries will not be able to cut child deaths by twothirds for almost 150 years until 2165. This is, despite the positive political commitments made at both the national and international levels to reduce child deaths and their causes.

Many of the children in SSA are dying from preventable causes – such as dehydration, hunger, and disease. Common diseases causing child mortality include malaria, acute respiratory conditions, HIV/AIDs, and tuberculosis. Non-high technology interventions such as antibiotics, basic hygiene, and health education exist and yet for broad systematic reasons, such solutions remain out of reach of millions of poor people (UNDP 2003). Experience of premature deaths deprives people of their capabilities to achieve their potentials and to contribute to the development of their families, communities and the nation.

### **1.2 Meaning of policy**

Policy has many meanings. For example, Hogwood and Gunn (1984) specifies ten uses of the term policy; that is, policy as: a label for a field of activity, an expression of general purpose or desired state of affairs, specific proposals, decisions of government, formal authorization, a programme, an output, an outcome, a theory or model, and a process. This study adopted the elements of a *programme* and *outcome*. These concepts are best packaged and presented in Walt's definition which was used by the study.

Policy is a series of more or less related activities and their intended and unintended consequences for those concerned...Policy involves the decision to act on some particular problem, but includes subsequent decisions relating to its implementation, and enforcement. Policy should involve more than intention or intent - it should represent what governments actually do. However, given that government's choice <u>not</u> to do something may represent a policy, policy must include what governments say they will do, what they actually do and what they decide <u>not</u> to do (Walt 1994:41).

Parsons (1995) stresses that a policy is more than an intended course of action; something which is carried out in the practice of implementation or administration. Policy is both a means and an end. Because of this, policy is both a technical and a political or interactional activity. The choices at the level of policy are in a large measure choice of values in the sense that they determine the purposes that are to be served and the benefits to be sought. They involve a judgment regarding the desirable social outcomes. Decisions are further made about strategies, ends and means, and how policy is to be implemented and evaluated. The essential properties of a policy are continuity over time, institutionalization in the form of a law, regulation or statement of principle, and most importantly, provision of an explicit guide to future actions (Perlman and Gurin 1972). Policy may be documented; or as Walt (1994) indicates, it may be unwritten as in the situation where government chooses not to do anything about a problem.

Policy analysis<sup>1</sup> literature indicates that policy formulation is always preceded by problem recognition and definition, structuring, ordering, locating it within certain boundaries, and giving it a name. Social problems are essentially the result of a political process because the constructions are basically done by an influential group after a realization that a social condition threatens its values, the condition affects a large number of people, and it can be remedied by collective action (Brueggemann 1996, Chambers 1993).

Chambers (1993) lists four dimensions that need to be considered when doing a social problem analysis. These are: identify the way the problem is defined; identify the causes to which the problem is attributed (its antecedents) and its most serious consequences; identify the values – the ideology that makes the events of concern to be defined as a problem; and identify who gains and suffers from the existence of the problem. Major outputs of the problem analysis are a statement of the policy goals and objectives, a qualitative judgment of a policy or program. The qualitative judgment is made against the needs and causal analysis implied in the conclusions of the study of a social problem.

<sup>&</sup>lt;sup>1</sup> Policy analysis is concerned with the knowledge about the formation of policy and implementation (Parsons 1995:20).

Although social policies are designed to solve social problems, the policies and programs can create their own social problems (Chambers 1993, Vedung 2005). Decision-making about problems and social actions can take place at the national level by high policy actors, at the sub-region levels and their institutions. Whatever the influence of international or global agenda-setting, the locus of decision making remains the national state (Parsons 1995).

Important elements of a potentially effective policy are sensitivity to context, actors, processes and content (Walt and Gilson 1994). In terms of content, a policy is said to have six operating characteristics namely: goals and objectives, benefits/services, entitlement rules, administrative or organizational structure for service delivery, financing method, and interactions among them (Chambers 1993). The goals and objectives represent the ends that a policy attempts to achieve; while the services or programs (the solution to the problem), the service delivery systems, and the resources comprise the means. Chambers (ibid) distinguishes between manifest (stated) and latent (unstated/hidden) goals. He cautions that policy analysis should be based on the manifest goals. Goals and objectives should be evaluated according to whether they are concerned with means or outcomes, and whether they are clear, measurable, incorporating the defined social problem and whether the services can produce an impact on the causal factors believed to produce the social problem.

Chambers (1993) also lists 12 types of services which he further classifies into "general services" or benefits and "specific services". Examples of the general services are the universally given services like education and health. Specific services are targeted at specific vulnerable population groups. Examples of these are cash or material goods, subsidies, and government loan guarantees etc. Among the general services are what he calls the personal social services (PSS), public social utilities (PSU) and hybrid PSS/PSU. Personal social services (also called the soft benefits) are characterized by: 1) face to face contact with the client/user/customer; 2) individualization of services; 3) broad administrative and professional discretion; 4) service to citizens with unexpected problems; 5) benefits the acceptance of which can be required legally; 6) delivery of

intangible service; and 7) enforcement of social control or the amelioration of personal catastrophe. The opposite of all these (save the last) define the dimensions of public social utilities.

Policy making can be done from the top (top-bottom approach) or bottom (bottom-up approach). The top-bottom approach to policy making involves undertaking rationally, procedural decisions of selecting goals and courses of action which will best achieve the values and purposes. The top-down decisions can be made by the elite, professionals, key groups in society (corporatism), and other societal structures on behalf of the nation (Parsons 1995). The top-down theorists believe that policies are shaped and implemented in a systematic way and that the policy process can be understood as a series of stages from agenda setting and initiation through implementation and evaluation. They tend to focus on explaining the factors that get in the way of a policy delivering its intended outcomes, highlighting the difficulties that arise from the devolution of responsibilities for implementation to administrators and managers (Parsons 1995, Hogwood and Gunn 1984).

The major limitation of the top-down approach is the tendency to give scant attention to implementation perceiving it to be the final and least significant (Newman 2002). Top-down policies are also associated with a lot of inequalities between people and places in nations (Bond 2006) and have a tendency for abstraction from the social, political and economic contexts (Antrobus 2003). It has also been pointed out that the hierarchical unduly optimistic expectations are more likely to suffer disappointment in situations of implementation complexities. Another major criticism levied against this model is the difficulty to obtain and analyse all the information and options when considering a problem. Most policies made in SSA countries including the Millennium Declaration are, however, top-down having been hatched by the elites in international settings and then passed over to individual countries for implementation. Subsequently, most policies implemented in SSA are conceived at the national level and passed down to local governments for implementation.

The bottom-top approach suggests the participation of local people in policy making. The local people include individuals mobilizing themselves into interest groups or communities (also called interest groups or communities), neighbourhood associations, and community level organisations (Lowery et al 2008, Squazzoni 2008). In the policy analysis literature, this has been called pluralism or pluralist democracy (a normative framework for decision making) (Parsons 1995). The bottom-up theorists view policy-making as an incremental, interactive process in which policies are shaped and reshaped in line with local pressures and circumstances. Implementation is viewed as an integral part of the policy making process rather than as the final stage subject to formal administrative processes (Lindblom and Woodhouse 1993, Barret and Fudge 1981, Lipsky, 1980). Implementation is a reflection of communal interest whereby potential clientele are proposing a policy that will directly affect them rather than having a policy imposed on them by a policy maker with selected narrow interests. The bottom-up orientation is also more conducive to a democratic approach to policy implementation process than the top-down or command model (Peter deLeon and Linda deLeon 2002).

Pluralist politics has, however, been criticized that it is never played on a level playing field. Decisions tend to be biased in favour of the powerful to the disadvantage of the less powerful and less-well resourced. This calls for the creation of a more participative open and fairer democracy (Dahl and Lindblom 1979). Involvement of implementers and service beneficiaries in policy making may also be quite slow and expensive. Nonetheless, this study used the bottom-up approach to policy making model largely because of its equal focus on policy and implementation.

### 1.3 Meaning of implementation and its relationship with policy

The most common meaning of implementation is to carry out, to accomplish, to fulfill, produce or complete (Brynard 2005). Implementation is both an outcome and a process. As a noun, implementation is the state of having achieved the policy goals; while the verb to implement, is a process. The fact that the policy goals are not achieved does not mean that the process does not take place. To understand why the policy goals are not being achieved there is a need to understand the process of implementation so that it can be

influenced to achieve the policy goals. The most detailed definition of implementation has been provided by Mazmanian and Sabartier (1983:20-21).

Implementation is the carrying out of a basic policy decision, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. Ideally, that decision identifies the problem(s) to be addressed, stipulates the objectives to be pursued, and, in a variety of ways structures the implementation process. The process normally runs through a number of stages beginning with passage of the basic statute, followed by policy outputs (decisions) of the implementing agencies, the compliance of target groups with those decisions, the actual impacts of agency decisions, and finally, important revisions in the basic statute.

The above definition indicates that policy goes through stages of legitimating by the implementers, interpretations, choosing aspects to implement and to leave out and revising the original policy or law. Thus, what happens at the implementation stage will influence the actual policy outcome. Conversely, the probability of a successful outcome will be increased if thought is given at the policy design stage to potential problems of implementation (Hogwood and Gunn 1984:198). In other words, explanations for policy failure can best be discerned by analyzing implementation - non implementation and unsuccessful implementation. Unsuccessful implementation occurs when a policy is carried out in full but the policy still fails to achieve the desired outcomes may be due to undesirable environmental forces. Non-implementation means that the policy was not executed as intended due various factors such as un-cooperativeness, or the best efforts of implementers could not overcome obstacles to effective implementation. But policy can also be bad when it is based on inadequate information, defective reasoning or unrealistic assumptions (Hogwood and Gunn 1984). Corollary, because of interpretation problems, environmental influences and other problems, implementation can never be perfect<sup>2</sup>.

<sup>&</sup>lt;sup>2</sup> Hogwood and Gunn (1984) provides 10 conditions that are essential for perfect implementation all of which are difficult to fulfill. They are: a) the circumstances external to the implementing agency do not impose crippling constraints; b) that adequate time and resources are available; c) that the required combination of resources is actually available; d) that the policy to be implemented is based upon a valid theory of cause and effect; e) that the relationship between cause and effect is direct and there are few intervening links; f) that dependency relationships are minimal; g) that there is understanding of and agreement on objectives; h) that tasks are fully specified in correct sequence; i) that there is perfect compliance.

Other views on implementation indicate that there is no single best implementation strategy and that the best strategy is contextual in terms of what contingencies surround the policy issues and how they can best be addressed in terms of implementation (deLeon and deLeon 2002). The contextual element in implementation was also identified when policy was being discussed above. It is because of this understanding that the study investigates levels of policy implementation in the context of Uganda, a sub-Saharan African country. For purposes of this study, therefore, policy implementation was defined as the "accomplishment of policy objectives through the planning and programming of operations and projects so that agreed upon outcomes and desired impacts are achieved" (Brynard 2005). Effective implementation needs to use appropriate organizational structures matching organizational tasks and environments. There is also need for careful planning of appropriate procedures, and management; influencing human behaviour and attitudes, and being sensitive to power realities (the ability of groups opposed to the policy to block efforts of its supporters) (Hogwood and Gunn 1984).

A large proportion of implementation activities in the social service sectors involve provision of services to persons. Provision of personal social services involves case management. There are three approaches to case management:- a) acting as a broker of services identifying client needs according to their direct requests, locating organisations that offer relevant services, and referring clients to them; b) undertaking therapist roles as well as actively pursuing monitoring and evaluation of treatment provision and benefits; c) organizing services and focus resources on assessed strengths and assets of the client and his/her social network. Important goals in case management are to ensure service access and accountability for outcomes (Chambers 1993, Devas and Grant 2003).

#### 1.4 Meaning and importance of the Millennium Development Goals

The study was concerned with the MDGs because the Goals form the springboard of policies of developing countries. Besides, the MDGs were jointly agreed on presidents from both the developing and developed countries of the world in New York in 2000. The Millennium Development Goals represent a renewed commitment of the international community to overcome extreme poverty in its many dimensions – income poverty, hunger, disease, lack of adequate shelter, and exclusion; while promoting gender

equality, education, and environmental sustainability for populations in the 21<sup>st</sup> Century. The United Nations defines the MDGs as "concrete measures for judging performance through a set of inter-related commitments, goals, and targets of development, governance, peace, security, and human rights" (UNDP 2007b:3). They place the human well-being and poverty reduction at the centre of global development objectives.

The MDGs comprise of 8 goals, 18 targets and 48 indicators. They aim, between 1990 (the base year) and 2015 to: reduce extreme poverty and hunger by half; promote universal primary education; promote gender equality and empower women; reduce infant mortality and child mortality by two-thirds; maternal mortality by three quarters; combat malaria, HIV/AIDs and other diseases; and promote environmental sustainability. Each goal and target addresses an aspect of poverty, and "ideally all goals should be viewed together because they are mutually reinforcing" (IRC 2004:13). The 8<sup>th</sup> goal, global partnership to promote development – is concerned with establishing and maintaining an effective partnership between developing and developed countries to attain the MDGs (UNDP 2003, IRC 2004).

Goals place demands on all actors to identify new actions and resources so that they can be reached. For example, with regard to resources, governments of developing countries were to devote up to 20 per cent of their budgets to education, 15 per cent to health, 10 per cent to agriculture and 0.5 percent to water and sanitation<sup>3</sup>. The G8 countries and the international community were to contribute 0.7 per cent of their gross national product and double development assistance to Africa. Success was not to be judged by simply achieving the Goals on time. Halving poverty by 2015 would not be the end of the road, because countries must continue to halve it again and again. National ownership is not just government ownership. Actions were to be taken by communities, local authorities,

<sup>&</sup>lt;sup>3</sup> Towards the end of the write up of this thesis, however, it was learnt that during the 3<sup>rd</sup> Joint Annual Meeting of the African Union and Economic Commission for Africa Conference held in Lilongwe, Malawi between 29<sup>th</sup> and 30 March 2010, the African Ministers of Finance Planning and Economic Development, decided to abandon the MDG budgetary targets, and the common position on the MDGs and to delete these from the Ministers' conference report. Backtracking on the MDGs aspirations may have a lot of negative consequences on social welfare of the people of Africa, affecting the little has been achieved (Pambazuka News, 2010-04-22, Issue 478) (ahpernet@googlegroups.com)

and civil society groups (UNDP 2003). By showing progress or lack of it, the MDGs inspire debate and policy action locally, nationally and globally.

The Goals are not only development aspirations but they are also claimable *rights;* the rights of each person on the planet to health, education, shelter, security as pledged in the Universal Declaration of Human Rights and the UN Millennium Declaration (UNDP 2007b, 2005a). This means that taking action to achieve them is an obligation, and that there should be protection and promotion of their realization. International human rights law requires that states must move expeditiously and effectively as possible towards the realization of the *right to the highest attainable standard of health*, with particular regard to those living in poverty, other disadvantaged groups and individuals. These steps must be deliberate, concrete and targeted taking into account the national and international resources at the disposal of the state. It is however, noted that most countries are not doing all they can within their available resources to progressively realize *the right to the highest attainable standard of health* (Hunt 2007).

### 1.5 The Millennium Development Health Goals and their relationship with others

The MDGs give prominence to health. Of the eight MDGs, four are related to health: Goal 4 (to reduce child mortality); Goal 5 (to improve maternal health); Goal 6 (to combat HIV/AIDs, tuberculosis, malaria and other diseases) and Goal 7 (to ensure environmental sustainability, including reducing by half the proportion of people without access to safe drinking water. The remaining goals are also related or have a direct impact on health. Health is central to the MDGs because it is central to poverty reduction and development. Good health is not just an outcome of poverty reduction and development but it is the way of achieving them. Actually, SIDA characterizes health as "wealth" and a "key to development" (SIDA 2002 a, b). SIDA states that "health and illness are among the most important factors that decide whether development will spiral upwards or downwards" (SIDA 2002b:2). This relationship is further illustrated by Claeson and others (2002:203) with these words:

Ill health, malnutrition, and high fertility are often reasons why households end up in poverty, or sink further into it if they are already poor. The illness of the household breadwinner and the consequent loss of income can undermine a poor household's ability to cope financially. Out of pocket payments for health services – especially hospital care can make the difference between a household being poor or not. High fertility additionally places extra financial burden on households, by diluting the resources available to other household members and by constraining earning opportunities, especially of women.

The same authors also indicate that poverty is a cause of ill health (Claeson et al 2002:203).

Poor countries and poor people suffer from a multiplicity of deprivations which translate into levels of ill health that far exceed the population average. Most obviously, they lack financial resources to pay for health services, food, clean water, good sanitation, and other key inputs to producing good health. It is not just lack of income that causes the high levels of poor health among poor people, however, the health facilities serving them are often dilapidated, inaccessible, inadequately stocked with basic medicines, and run by poorly trained staff. Furthermore, the poor are also disadvantaged by lack of knowledge about prevention and when to seek health care. They also tend to live in communities that have weak institutions and have social norms that are not conducive to good health. In short poor people are caught in a vicious circle: their poverty breeds ill health and this in turn conspires to keep them poor.

SSA countries are reportedly facing enormous poverty – both economic and human poverty. Economies have not grown in the majority of the countries making 41% of the populations to live on US \$1 a day or less, a situation characterized as extreme poverty (UN 2007). It is indicated that unless things improve, it will take SSA until 2147 to halve extreme poverty (UNDP 2003). Improvements in health generate significant economic returns. Inversely, high infant mortality rates have been associated with lower economic growth. For example, incomes of countries with infant mortality rates<sup>4</sup> of above 150 per 1000 live births had incomes grow by an average of 0.1% a year; while those with death rates between 100 and 150 grew by an average of 1.0% a year. Countries with rates below 100 grew by an average of 3.7% (UNDP 2003). The higher the infant mortality is also reported to play a role in reducing fertility rates (Midgely 1999). Thus, countries with better health conditions are systematically more successful in achieving higher economic growth. Moreover, economic growth provides more resources to invest in education and health and those investments contribute to higher growth.

<sup>&</sup>lt;sup>4</sup> Infant mortality is a general proxy for overall disease levels (UNDP 2003).

Health, education and standards of living (GDP per capita) are also closely linked and together they constitute *human development*<sup>5</sup>. Education helps improve health and good health contributes to better education. The relationships between the two are well discussed in many sources (Aday 2005, Midgely 1999, UNDP 2003). More than being a source of knowledge, education promotes better hygiene and increases the use of health services. For example, educated girls and women are likely to marry later, have fewer children, seek medical attention sooner for themselves and their children, and provide better care and nutrition for their children. Such behaviour reduces the probability of disease and increases the odds of children surviving past age five. Over time, reduced child mortality leads to smaller families and increased contraceptive use – lowering overall fertility. Safe water and adequate sanitation also determine health outcomes. By reducing infectious diseases, they improve children's nutritional status and increase their learning abilities.

*Human development* constitutes one of the four pillars targeted in the attainment of sustainable development. The other three pillars existing in synergistic relationships are economic dimension (resources, capital, labour); environmental dimension (physical, chemical and biological changes) and institutional dimension (policy options and measures) (UNDP 2007b). Essential conditions for human development are environmental sustainability, equity, and an enabling global economic environment. (UNDP 2003a, UNDP 2005a, Midgley 1999). Human development as represented by the human development index (HDI)<sup>6</sup> usually moves steadily upwards, though usually slowly because three of its key components – literacy, school enrollment rates and life expectancy take time to change. When the HDI falls, it indicates a crisis with nations depleting their basis for development – people, the real wealth (UNDP 2003).

<sup>&</sup>lt;sup>5</sup> In social work and other development literature, human development has also been called "social

welfare", "social well-being", "levels of living of society", and "social progress" (Midgely 1999). <sup>6</sup> Human development Index (HDI) is a composite measure embracing longevity, (measured by life expectancy i.e. a long and a health life, knowledge (measured by education attainment : adult literacy and gross enrollment in the ratio of two-thirds and one third, respectively) ; and a decent standard of living ( represented by GDP per capita measured in terms of purchasing power parity – PPP) (UNDP 2007b).

### 1.6 Challenges in the attainment of health Goals and ameliorative strategies

A number of reasons both extra and intra have been advanced explaining the reasons behind the failure of SSA countries to make substantive progress towards the attainment of the health-related Goals. The extra reasons include: failed economic growth, income inequalities, and failure to invest adequately in health and education. Economic growth has reportedly failed because of poor governance. Poor governance comprised of corruption; incompetence; unaccountability to citizens; inadequate sound economic policies, disrespect of human rights, dys-functioning institutions and poor democracy. Other extra reasons are severe structural problems involving the international trade, external debts; income inequality, violence and conflicts, and smallness of countries (UNDP 2005a, 2003). The intra health sector reasons given for failing to attain the health related Goals are: HIV/AIDS epidemic, inadequate resources, inequity, human resource crisis, minimal popular participation in service delivery, and inefficient management of health care systems (UNDP 2005a, 2003, WHO 2007, 2006, Ogilvie et al 2007, Mackintosh et al 2006, Green 2006, Mehrotra 2006).

Governments are reportedly not spending enough on overall health, and especially on basic health; and yet achievement of health goals is relative to the resources that are invested in the sector. The current median per capita health budget in Africa is US\$6 per annum, which is inadequate compared with a World Health Organization recommended estimate of US\$60 per capita requirement for good basic health care, representing significant resource gaps for health. Only five countries in SSA namely South Africa, Botswana, Namibia, Seychelles, and Mauritius, spend the recommended US \$60 or more per capita on health (Sanders et al 2003).

Health sectors of developing countries do not only experience poor financing, but are also characterized by inequity of budgetary allocations (Gwatkin 2000). The poorest people receive less of government spending on primary health care than higher social economic groups. For example, it is reported that the poorest 20% of the people in countries with the highest child mortality (above 140) get less than 15% of government health budgets. In a good performing country like Costa Rica, the poorest 20% receive 43%. Inequity in

budgetary allocations is attributed mostly to the existence of vertical programs such as child immunization, HIV/AIDS, tuberculosis, and malaria. Resources are reportedly concentrated in these areas at the expense of the overall health system. Vertical programs are reportedly expensive to maintain and are greatly threatened when donor funds disappear. Vertical programs may be affordable and prudent only for diseases that offer reasonable possibility of eradication in a foreseeable period (Gwatkin ibid).

Another reason given for the unlikely hood of SSA to achieve the health Goals is what has been characterized as the *human resource crisis*. While it is the health workers who glue together the different inputs into a functioning health system, SSA has inadequate numbers of health workers varying in mix, quality, and performance (WHO 2007, 2006). Increases in population have not been matched by increases in health resources and in a number of countries the ratio of health professionals to population has remained stagnant or has even declined (WHO 2006). While it is estimated that SSA has 25% of the world's disease burden, it has only 1.3% of the world's health workforce. The workforce density is 0.8 per 1000 population, compared to a world average of 4.2 (WHO 2007). This falls far below the recommended health worker/population ratio of 2.5 per 1000 required to meet the MDGs (Mujanja, Kibuka and Dovlo 2005). In the 1980s, the doctor population ratio was 10,800 in developing countries compared to one doctor per 300 in industrialized countries. For the nurses, the ration was one nurse to 2100 persons compared to one nurse per 170 persons in high income countries (World Bank 1994).

Health worker shortages have been attributed to many factors including retrenchment, recruitment embargoes, and migrations or brain/skills drain. There has been an exodus of health professionals from the rural to urban areas of countries, and from developing countries to developed western countries. The problem of brain drain is reportedly worse with nurses who form the backbone of health care systems in SSA. This means that even if there is an infusion of substantial donor funding, lack of sufficient health workers makes achievement of the targeted MDGs unlikely (WHO 2007, 2006, Ogilvie et al 2007, Mackintosh et al 2006, Green 2006, Mehrotra 2006).

Poor governance and especially state failure to give local people opportunity to participate in service delivery and especially to voice their concerns has also been blamed for poor quality services, low performance, limited responsiveness and weak accountability. As a service financier and provider, the state delivers services in a top-down bureaucratic manner through sectoral line ministries down to the local level. It is argued that this manner of service delivery does not ensure synergy between interventions in a geographic location, and effectiveness of individual public services (Mehrotra 2006).

A number of strategies have been suggested to help countries work towards achieving the Goals. These include reducing poverty through economic growth, targeting resources to human development notably education and health; getting donors to increase their support, partnering up with the private sector for service delivery, and adopting *good policies*. Issues relating to policy choices have been dwelt on in section 1.1. The following sections briefly discuss advantages and limitations of economic growth, donor support and the free market strategies for the attainment of the MDHGs.

Reduction in poverty means that people are better able to live in healthful environments, obtain nutritious foods, and afford to seek and pay for medical care, among other things. Secondly, economic growth tends to increase government revenue. Because most investments in human development such as health come from the public sector, greater fiscal revenue is critical. In many developed countries, economic growth has been reckoned as a prerequisite for improving people's standards of living, health status and life expectancy. This was especially true for Great Britain where in a 200-year period, life expectancy rose from 30 years in 1730 to 61 in 1960. This improvement is known to have been due to rising living standards (incomes) and particularly the per capita nutritional consumption (MoFPED 2003).

Caution has, however, been given regarding the relationship between economic growth and public health; saying that it is a complex one. Rapid economic growth has always entailed serious disruptions: environmental, ideological and political which spills over into deprivation, disease and death (Szreter 1999). Experiences of industrialization impeded the delivery of health improvements following the introduction of industrialization in the nineteenth century Britain. It is also true that some governments may neglect investing in human development or discriminate in their provisions among population groups weakening the potential benefits of economic growth.

Another way of ensuring a movement towards the Goals is to get the donors to increase their support, to improve sector wide programmes. A sector wide approach is supposed to build an integrated programme that sets out policy objectives, *a comprehensive policy* framework, an investment and spending plan, as well as specification of funding commitments by governments and donors thus avoiding the weaknesses of the project approach<sup>7</sup> (UNDP 2003). The National Environmental Management Authority (NEMA) summarises the purported purposes of external aid in the following words:

In theory, foreign aid is presumed to be assistance intended to redress or correct capital deficiencies or inadequacies (financial, physical, and human) existing in poor nations. The expectation is that it will play two roles. The first is that it can be a means of inducing policies and programs, which lead to improved performance. That is, aid can be a 'midwife' of good planned programmes for promoting performance necessary for economic development (NEMA 2002:27)

Although external aid is claimed to have the qualities to induce appropriate policies and programs for improved social progress, this has not been so as indicated by the persistence of high child mortality in SSA.

The major reason for emphasizing the role of the private sector or market economics has roots in the nineteenth-century classical economic theory (which regards the market as the most efficient way of operating an economy); and in the limitations of the public health sector. The limitations include:- inefficiency, inequity, poor technological dynamism, unsatisfactory responsiveness to clients, poor quality public health services, weak management skills, distancing decision-making power from communities, reducing accountability with resultant health services that do not reflect local needs or preferences. The public sector is also alleged to exhibit low levels of labour and capital productivity;

<sup>&</sup>lt;sup>7</sup> The project approach weaknesses involve weak links to other sectors, geographical isolation, lack of ownership, and aid conditionality (UNDP 2003).

undeveloped incentive structures; the neglect of timely infrastructural maintenance; weak links between supply and demand; soft budget constraints; and poor financial risk management (UN and University of Lalaguna 1999, Mills et al 2001). The problems of the public health sector are worsened by an absence of competition with resultant lowering of the quantity and quality of health services (Mills et al 2001, Balunywa 2002).

These limitations have called for changes in policies, practices, and management systems within the health sector, which changes are also called the health sector reform. Other related reforms are called the New Public Management (NPM). The gist of the NPM is to let other actors like the private for profit and non-governmental agencies to provide the services while the government specializes in policy making, regulation, and purchasing the services. The government is to move from a concern to do towards a concern to ensure that things are done (Kaul 1997).

The private sector is associated with greater efficiency because being motivated by profit, it needs to produce efficiently. This is further augmented by competition. Competition sets off market forces of demand and supply making people demand goods of good quality and good price. This means that factors of production will be allocated to those businesses that are producing goods that are being demanded. As the private sector grows and performs efficiently, it will be able to achieve the social objectives commonly pursued by the public sector of provision of services, employment, and redistribution of wealth (Balunywa 2002).

Some of the major criticisms of the private market in the health sector include its tendency to discriminate people on the basis of ability to pay thus conflicting with the ideology of the right to health care and creating inequities in service distribution and use. It is also allegedly unable to accurately determine the level of need for a service and optimize the production of a service to satisfy it. It is unable to raise adequate funding for services requiring heavy investments (Green 2003, UN and University of Lalaguna 1999). Despite the limitations of both the public and private sectors, both provide and finance services in most SSA countries (Mwambu et al 2004).

#### 1.7 Dimensions and determinants of health

There are number of definitions and ways of perceiving *health* with different implications for health policy and planning (Zwi and Mills 1995). This study used the WHO definition which considers health as *a state of complete physical, mental and social well-being and not merely absence of disease or infirmity* (WHO 2006). Health is seen to relate not only to physical and mental health status, but also to social and economic relationships. The concept of health embraces health status, nutritional status, morbidity, fertility management, disability and mortality (Claeson et al 2002). The WHO definition has been criticized as a mirage - idealistic, unachievable, and un-measurable, although no alternative notion of health has achieved greater currency (Zwi and Mills 1995, Kemm and Close 1995, Dubos 1959).

A distinction is made between the positive dimension of health and the negative one of disease; between individual health and illness and population health. *Health care* (or service) which is a set of interventions that mainly address disease and sickness (Okuonzi 2000) is important in protecting *individual health* as opposed to *population health*. Treatment of disease benefits individuals tremendously but the benefits do not bring about dramatic overall improvement in population-based health (Okuonzi ibid, Aday 2005). Health care is the major function of the health sector. Health services and health professionals have always had three-fold tasks of curing, caring and preventing disease (Kemm and Close 1995).

It is argued that public health should shift attention from individuals and begin to study the characteristics of the population (Carderelli et al 2005). The major reason given for this is that the individual disease causes may not be the same as those of the population. Population health is influenced by social, economic, and physical environments, personal health practices, individual capacity, coping skills, human biology, early childhood development, and health services. The most important factors that bring about good health are outside and beyond the health sector (Carderelli et al 2005, Kemm and Close 1995, Jones 1994, Aday 2005, Mills et al 2001, Okuonzi 2000). The fundamental determinants of health and health disparities are characterized as representing essential
resources such as education, income, wealth, social support, physical and environmental resources, which are commonly grouped as natural capital, human capital (levels of education and skills); material capital (the distribution of wealth and income); social and cultural capital (quantity and quality of social ties, community values and empowerment) (Link and Phelan 1995). It is argued that unless there is capacity and willingness to achieve these health determinants by the other sectors and actors, the health sector alone cannot improve health (Okuonzi 2000).

There are also different perspectives on how health should be viewed by policy makers: as *a right*, a consumption good, or an investment (Green 2003). Each influences how one perceives the role of different actors in promoting health, and the relative roles of the individual, the state, the community and the private sector. This study adopted the perspective which perceives *health as a right*. This derives from the WHO Constitution which states that "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition" (WHO 2006:1). Believing health to be *a right* provides a basis for a strong government role in poverty and health damaging development activities, promoting equitable access to health care and assuring the quality of available services.

#### **1.8 Frameworks for health policy formulation**

Health policy formulation in developing countries is guided by two complementary frameworks: Primary Health Care (PHC), and the Health Sector Reform (HSR). Both are globally conceived and share an emphasis on service organization, and participation of individuals and communities in health promotion. They echo most elements of the critical values of the right to highest standard of health (Hunt 2007). PHC which was introduced in 1978 is promulgated as a universal framework with the means of attaining the World Health Organisation (WHO) goal of "Health for All" (Green 2003). Essentially, PHC was launched as a denunciation of the gross inequity in the health status of the people both between and within countries. These inequities have been described as being politically, socially and economically unacceptable (WHO/UNCEF 1978). Some of the characteristics of PHC are: affordability of care, accessibility (on equity lines),

appropriate care for the particular needs of a given population; treatment and prevention of illness; inter-sectoral collaboration for health promotion, and people's participation in decision making relating to health (WHO/UNCEF, 1978).

The element of the multi-sectoral approach to health promotion is the essential component of comprehensive primary health care. This has, however, been criticized that although it is laudable in intent, is unworkable leading to the application of selective PHC (Macdonald 2004, Green 2003). Critics have indicated that PHC has failed; not worked, or has been ignored largely due to a confusion in meaning. People have different ideas about it, and are doing different things some of which are in conflict with each other (Macdonald 2004, Sjaak van Der Geest et al 1990). One of the critics has come up with this definition which was also used in this study. "Primary health care means a system of medical care and promotion of health focused on the health needs of a given community, a whole care system dealing with the immediate presenting problem, but seeking to contribute to strategies to prevent the problem more upstream" (Macdonald 2004 : 286).

The second framework - HSR, refers to a package of policy measures affecting the organization, funding, and management of health systems (Zwi and Mills 1995, Cassels 1995, Møgedal et al 1995, Gwatkin 2002, Berman 1995). Health sector reform has been described as sustained, purposeful change to improve the efficiency, equity and effectiveness of the health sector (Berman 1995). It is concerned with changes in health policies as well as the implementing institutions. It focuses on defining priorities, refining policies, and reforming institutions through which those policies are implemented (Cassels 1995, Møgedal et al 1995). Common elements of HSR programmes in all countries include: separation of functions of the health sector, enhanced role of organizations outside the public sector, strengthening of market approaches to management and organizational relationships, decentralization, the need to set clear priorities and measure both the effectiveness of particular clinical interventions together with their cost.

Health sector functions include: policy setting, health care provision, financing, and regulation (Green 2003). The need to split functions arises out of the observations that some of these functions like regulation is undeveloped and that government need not carry out all the functions. The need to enhance the role of the NGO and private for profit, arises out of the observation that they are perceived as more efficient health care providers and the need for them to carry out functions for which they have *comparative advantage*. Health sector reforms are inextricably tied up with the New Public Management<sup>8</sup> (NPM) reforms.

It is argued that there is no single right model of how the health sector should be structured and universal solutions are unlikely to work or to be appropriate for different health care contexts (Mills et al 2001). A comprehensive, rational approach to reform would identify and analyse critical dysfunctions, test out whether they can be resolved within the framework of existing policy, structure and systems; and if not, to take steps to implement formal change. The design and analysis of HSR policies requires an understanding of the social, economic and political situation of the country, understanding of the health systems, sources of ideas and experience, information to guide resource allocation, and institutional key principles (Møgedal et al 1995, Cassels 1995).

Decentralization is another pertinent policy which has been implemented in SSA countries as a major institutional reform aimed at bringing services and decision making processes closer to the people. Decentralisation has taken two broad forms namely intergovernmental and economic / market decentralization. The latter encompasses:-

Privatization; contracts; fiscal decentralization; franchise systems; vouchers; voluntary services; self-delivery; market provision of services and goods as well as public private partnerships (Olowu 2001, Lijéron 1996, Rondinelli 1981). Inter-governmental decentralization takes three forms namely:- deconcentration, delegation, and devolution. Devolution is the real transfer of political power from higher to lower political or

<sup>&</sup>lt;sup>8</sup> The core of the NPM is government moving from a concern to do things, towards a concern to ensure that things are done (Mills et al 2001).

administrative levels. Delegation is the transfer of administrative responsibilities to lower levels, but not the political responsibility. De-concentration is geographical dispersions of state agencies and public administrative tasks, but keeping the hierarchical administrative and financial control (Villadsen 1999, Lijéron 1996). Some countries like Uganda have adopted a devolution form; while others like Zambia have adopted a delegation form. Each form has implications of service delivery structures, system management and empowerment for health promotion (Jeppsson and Okuonzi 2000).

Although decentralization has been implemented in different forms in SSA (Jeppsson and Okuonzi 2000), the policy claims to help grass-root institutions to identify their local problems and needs more easily and speedily, and implement tailor-made local solutions. It further claims to provide an opportunity for government and the private sector to interact at local levels in pursuit of mutually beneficial outcomes. Within the health sector, decentralisation is regarded as a necessary condition for the successful implementation of primary health care (PHC), improvements in health system performance, and accelerated development (Okuonzi and Lubanga 1997). It offers opportunity to empower individuals to take more responsibility for improving their own health and the health of status of their community. It is argued that since local officials know more about their specific health conditions, that they can make better decisions on how best to address those needs leading to the attainment of efficacy, equity, efficiency, quality of care, financial soundness and accountability, as well as local choice and priorities.

# 1.9 Social work and policy adequacy: a disclaimer

Policy adequacy may be looked at in different ways depending on the profession doing the analysis. For example, a medical professional may restrict one's assessment of policy on the health issues which falls directly in the armpits of their discipline and control - the health sector. On the other hand, a social worker would cover a broader ground of analysis. In this study, assessment of policy adequacy was done from the social work perspective. In this section, the study provides the social work professional context to help understand the choice of variables used in the analysis of policy adequacy. The section ends with a listing of issues which were used to assess policy adequacy. Unlike many professions, social work is an eclectic discipline with ability to input or cross fertilize other professional and sectoral activities. Analysis of problems experienced by individuals, families, communities, organisations and entire nations (policy practice) is always guided by the person-environment construct (Hare 2004). This basically means that the problems may emanate from the person and his/her needs or from the environment (social, physical or both). The 'person' may be an individual, family, community or society and an organisation. People are affected by their environments as they also affect the environments (Hare 2004, Germain and Gitterman 1996, World Bank 2006). The effects are bi-directional calling for adoption of a holistic view to analyse the sources of problems, and their dynamics; and subsequently find solutions to the problems.

In responding to problems of whatever size, social workers are required to involve the affected persons as well as the network of all significant people in the social environment of the affected person. The systems social workers work with have been characterized as the client, target, action and change agent systems (Pincus and Minahan 1973). This implies integration of ideas and resources during problem solving something which can be likened to the notion of multi-sectoral, multi-disciplinary approach to health promotion under PHC. Policy making and practice is likewise to identify responsibilities for all the actors to impact or have potential to impact on the problem solving process. In assessing policy adequacy therefore, it is questioned how well stakeholders are involved or are to be involved in problem solutions.

Social work is also a capacity building activity (Trevithick 2005). Capacity describes the personal resources or abilities that people have at their disposal (actual and present abilities) as well as potential or future capacity that can be developed or learned (Sheldon 1995). Capacities can change, can be enhanced, maintained, or deteriorate. To assess what is present or not present, needed or not needed in problem solving including policy practice, it is helpful to conceptualise this in terms of human and environmental capacities. These are strengths, limitations, and resourcefulness. Capacity assessment

can be done at the level of the persons affected by the problem; at the level of the change agents such as the health workers, or social workers; and of the social cultural environments including agencies and organisations currently managing the problem and those with potential to influence positively or negatively the direction and effectiveness of problem solving (Trevithick 2005). This study analysed policy adequacy by looking at the extent existing policy addresses capacity issues and particularly organizational capacity. Assessment of capacity issues of health care systems also directly analyses policy implementation levels. The two move hand in hand.

Social work is a human rights profession in the sense that it has historically been involved in fighting for human rights causes. Its mission and values are compatible with the second-generation rights of economic, social and cultural rights indicated in the Universal Declaration of the Human Rights (UDHR) (Healy 2008, Healy 2007). Articles 22 and 25 of the UDHR are particularly relevant as they spell out the important social and economic rights to basic needs and services. For example, article 25 indicates that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control" (UN 1948:). Corollary, social work mission is to help people and especially the poor, the oppressed, the weak, and disadvantaged to meet their needs and build their capacities for sustained problem solving.

Social work helping actions are guided by the professional values as well as the values of the people who seek services. The social work values embrace the importance of social justice (Trevithick 2005, Hare 2004). This study has preferred to call values of people *critical values* to differentiate them from professional values. A *value* guides a person's or an institution's action toward a goal. Morales and Sheafor, (1986) postulate that every behaviour is influenced by some value judgments and that, "values are guides to action, they are principles that, whenever possible are to be maximized" (Galaway and Compton 1989: 176). Values are classified as "conceptions of people", "preferred outcome for

people", and "preferred instrumentalities for dealing with people" (Morales and Sheafor 1986:206-208). This study assesses the sensitivity of disease control policy to people's values discerned from their health care seeking practices and management of illness in homes.

Subsequently, the analysis of policy adequacy for health using the social work perspective was built on the following aspects:-

- Ability to address the needs of the people affected by the problem and especially the most vulnerable and the poor.
- Ability to address the values of the people affected by a problem especially those values guiding decision making relating to health care seeking and use of services.
- 3) Ability to address the person-environmental causes of the problem.
- 4) Ability to address organizational capacity strengths and limitations of actors affected by the illness/disease; actors engaged in problem solving, and those with potential to influence effective problem solving.
- 5) Ability to provide for feedback mechanisms on implementation challenges and addressing those challenges.

The major limitation of the social work policy analysis approach is the likelihood of producing a comprehensive, highly ambitious analysis cutting across social service sectors (going beyond the health sector) thus limiting ownership of the recommendations and application. Application of the recommendations from such an analysis would call for integrated planning for health promotion as stipulated in the principles of primary health care.

# 1.10 Statement of the problem

While the foregoing background has highlighted the importance of *policy choices and structures* in mitigating the challenges to the attainment of the MDHGs, it is unknown whether disease control policy constitutes the right choices with an ability to achieve the desired social goals.

This (the right choices) is measured against four elements namely: a) the needs and values of the people who experience the problem. The values include the critical human rights values such as service availability, accessibility, and targeting the poor as well as other values which guide individual health care seeking and service utilization; b) management experiences of illnesses /disease by all health care systems including the households and health care units at different levels of social organization especially at the grassroots; c) implementation issues by public and private health care institutions; that is, how well public and private health care institutions implement existing disease control policy; what is implemented and not implemented, and explanatory factors; and d) stakeholder involvement according to their comparative advantage as required by the PHC and HSR policy frameworks. Implementation experiences of all health care systems are used purposely to interrogate policy.

Basing on the implementation experiences, the study is then concerned with the assessment of the appropriateness of the interventions and their underlying theories; the service delivery structures and their organization for disease control. This study questions the existence of a fit between the *top-down* derived health problem construction, and the *bottom-up* constructions of a health problem; and the appropriateness of the resultant social responses.

Therefore, this is a policy analysis and community organization study which looks at the content, certain aspects of the policy making process, as well as actors and how they interact and organize themselves to implement disease control policy for reduced child morbidity and mortality in SSA. Because of limited resources, the study does not cover all the three diseases targeted by the MDHGs in all countries of SSA, but instead uses the malaria control policy and program in Uganda as the "the case of study". It focused on malaria in under-five children. Malaria disease (MDHG 6) is preferred because it is the leading cause of child morbidity and mortality (MDHG 4) in much of SSA. The ultimate aim of this study is to extrapolate findings on policy adequacy and implementation to other disease control policy and programs in SSA.

# 1.11 Study Objectives

1.11.1 General objective

To describe and analyse policy adequacy and the levels of implementation for the attainment of the millennium health goals using malaria control in Uganda as the case of study.

1.11.2 Specific objectives

- 1. To determine the experiences of households and capacities to control malaria in the under-five year children in Mukono and Mpigi districts, and the extent household needs and values are addressed by the malaria control policy.
- 2. To investigate organizational capacity and opportunities at the local government levels to plan and implement the malaria control policy/programs in the malaria endemic districts of Mukono and Mpigi.
- 3. To analyse the capacity of the malaria control policy to reduce malaria and under-five child morbidity and mortality in Uganda.

1.11.3 Research questions

- 1. How proximate is the malaria problem construction by the political and technical experts to that of the local people who own and experience the malaria problem?
- 2. How well does the malaria control policy address health system disease control and prevention challenges and "threats" existing at different levels of social organization?
- 3. How well does the malaria control policy address the "critical values" embedded in the health rights-based approach and social development?

# 1.12 The Thesis

The thesis of this study is that SSA countries are failing to substantially reduce child mortality because of inadequate policy. To establish whether policy is adequate or not, and to determine the elements that should inform policy to make it adequate, the study analyses the performance of policy. In other words, the study investigates health care system implementation experiences to judge how well they have informed policy. This study does not judge the contribution of either the policy or implementation to achieve the health related Goals. This is because the foregoing sections have implied that either one or both are responsible for the observed failures to achieve the desired social goals. This study works with the assumption that effective implementation largely depends on the robustness of the policy; and that implementation fails partly because of lack of a robust policy. The study perceives policy-making and implementation as being two elements existing iteratively in a continuous loop; each informing the other and being as political as the other (Walt 1994, Brynard 2005).

#### **1.13 Scope of the study**

This is a policy evaluation study which judges the extent the existing malaria control policy addresses the needs and values of the people; implementation and service utilization challenges. It also evaluates the extent existing community level institutions participate in malaria control and prevention programs. The study does the evaluation by under-taking a survey of household experiences of malaria/fever in under-five children; from which needs are identified and compared with the provisions/principles of the malaria policy. Also health care seeking and management practices of malaria by households and health workers (in the public and private sectors) respectively, are studied and analysed. Emerging values guiding decisions and actions of the families of sick children, as well as issues of resources and organization are compared with the policy provisions. The comparison qualitatively assesses whether a policy provision addresses the need or value; and how abstractly or concretely each value or need is addressed. Underlying theories and assumptions embedded in the policy content are also distilled to judge policy adequacy (Rossi et al 2004, Fairclough 2007). This study sets an agenda to observe micro level practices and how they impacts on the macro-level policy practices (Boeters 2008).

This study goes beyond describing the characteristics of the policy in terms of its goals, objectives, strategies and so on (referred to in section 1.2) which is also called *analytic* – *descriptive method of policy analysis*, and makes qualitative judgments about the appropriateness of the policy to meeting people's needs and values. This is, as Chambers (1993:69-70) argues,

the most important step in analyzing a policy is to arrive at a judgment about them, i.e., whether they are, in a particular sense, "good", "right", or "appropriate". Policy analysis that remains at descriptive level leaving this question unanswered cannot be complete... Coming to this judgment is value laden. This *value-critical policy* analysis approach, as it is called by Rein (1983), starts with an understanding the elements of the policy and then the whole. This is followed by a critical review of how the policy actually works or does not work, uncovering shortcomings, inconsistencies in logic and ambiguities. The study uses an explicit set of value criteria to make the judgments of the appropriateness of policy to people's needs. These values ware inferred from the households' preferences of sources of health care during children's malarial illness events and values guiding actual health care seeking. Examples of these are service availability and accessibility, as well as others specific to their social economic contexts.

This study does not analyse other policies with some relationship with malaria control policy. The reason for not doing so is because it is easier to deal with one policy. There is also a need to ascertain how comprehensive the malaria control policy, (as an entity), is in guiding implementation activities at all levels of social organization. However, the study uses the broad national health policy and the national health strategic plan (NHSSP) as contexts to understand the roots of the malaria control policy. Although there is one national health policy, and the disease control *policy* is regarded as *implementation guidelines*, the interrelatedness of policy and implementation makes this study regard the disease control guidelines as policy. Again, while policy may be silent or non-written, and some policy goals may be hidden, this study takes the advice given by Chambers (1993) to analyse malaria control policy using blue print policy and the manifest goals.

The study acknowledges the influential role of the policy making process to the quality of the malaria control policy and implementation. Some elements of the policy making process including the donor influences are just reported on in the literature review Chapter. The study does not go out to assess what aspects of the process affect implementation, because this was not the purpose of the study. The study works with the assumption that malaria control policy is top-down and assesses the extent it approximates the down-up definitions of the problem. Thus, the only aspect of the policy making process the study is concerned with is the problem construction and implementation. Problem construction is one of the most important stages in policy making upon which policy is based (Parsons 2003, Chambers 1993). Problem

construction by households is compared with that of health workers at the local government level. It is qualitatively inferred that the constructions of the malaria problem done by the health workers at the grass roots is similar to that done by the national level technical staff in the Ministry of Health. It is assumed that malaria control policy is initiated and architectured by the technical people (largely medically trained people) because malaria is a low politics problem. Low politics (as distinct from high politics) refers to policy questions which are not politically sensitive so as to threaten national security and peace. Low politics problems are ably discussed by technocrats with final approval by cabinet and parliament (Petros and Dimitris 2006).

The study restricts itself to considering policy as *outcome* and *program* (Hogwood and Gunn 1984). Thinking about policy in terms of *outcome* enables the study to make some assessments whether the stated purpose of policy appears to be what the policy is actually achieving. By thinking of policy in terms of programmes, the study is able to assess whether the *means* the government is using to pursue its ends is the most appropriate to achieving the important Goal of reducing child-deaths by two-thirds by 2015. The term *means* refers to the social responses, activities, service delivery structures and resources used to implement the policy provisions. Resources considered in this study go beyond the commonly known ones of finance, human resources, and technology, so as to include *social capital* and *empowerment*. This study takes on a human rights perspective to health prevention, and promotion. It is also concerned with health and diseases; individual and population health.

The focus of the study is on malaria in endemic areas of Uganda. Although child mortality in developing countries usually involves more than one condition occurring sequentially or concurrently (comorbidity) (Bates et al 2004), this study applies the WHO and the International Classification of Disease which suggests that the cause of death should be that one which triggered morbidity events leading directly to death. While acknowledging that the child may die from a multiplicity of conditions, this study is based on the premise that the child died from malaria.

Malaria, which is an infection and disease, is also called "fever" in Uganda. In accordance with ethnicity, the term "fever" is called many local names in Uganda. In the Luganda<sup>9</sup> language, for example, fever is called "*omusujja*". Unfortunately, fever is a symptom of a plenthora of diseases and conditions such as acute respiratory infections, wounds, all of which also commonly affect children (Lubanga et al 1998, McCombie 1996, Kengeya-Kayondo et al 1994, Nsungwa et al 2004, Kivumbi 2003). This raises problems of teasing out what conditions/diseases the person is relating to when they say that a child got fever. This is complicated by the limited laboratory services to confirm the presence of malaria parasites in the child's body; with tendencies to treat malaria presumptively. Nonetheless, the WHO recommends that fevers in malaria endemic areas should be regarded and treated as malaria until proved otherwise.

To avoid the confusion created by the synonymous use of fever with malaria, this study continuously used two Luganda words "*omusujja gwensiri*" (fever caused by mosquitoes) during data collection. To avoid confusing the reader regarding whether the study is referring to malaria "the disease" or "fever" the illness/symptom, the term malaria is put under inverted commas as "malaria" whenever it is used synonymously with fever (unconfirmed malaria). However, when the researcher is discussing malaria, "the disease", or the laboratory confirmed malaria, then the term is written normally outside the inverted commas.

Assessment of policy implementation hinges on the operations of the Ugandan health care systems. The health care system is pluralistic, existing at various levels of organization (Kleinman 1980). Starting from the lowest level is the household whose members organize ideas, activities and resources to restore and maintain health. The second level is the local community (the village), followed by the sub-county with health units of various levels and functions. The district, the nation, and the international community are also health care systems existing at higher levels. Anthropologists classify these different health care systems as the popular sector, the folk sector, and the

<sup>&</sup>lt;sup>9</sup> Luganda is the local ethnic language spoken in the study districts of Mukono and Mpigi districts and Buganda, the central region of Uganda. This was the language which was used to interact with household respondents during data collection for this study.

professional sector (Kleinman ibid). This study concentrated on the popular and professional domains of health care from household to sub-county, and district.

The popular sector comprises of the lay, non-professional domain where health is produced and illness is first recognized and treated, and where self-care takes place. Households produce and maintain health through nine behaviours namely: infant and child feeding practices, child care including quality and time spent with children, health seeking behaviours such as home diagnosis and treatment, and utilization of home based services; home hygiene and sanitation behaviour, antenatal and post-partum care of women; use of preventive health services such as immunization, malaria prevention, traditional/indigenous prevention; use of curative services; spending on all forms of treatment; and financial investments in health such as home improvements, purchase of health related capital goods (Berman et al 1994).

The professional sector is the domain of medically trained people with knowledge and control over the quality of medical practice by means of formally recognized professionalisation (Mahidol University 1994). This study assessed malaria treatment and prevention practices by the public and private health care sectors, as well as other community health care resource persons. Although there have been disagreements over the boundaries of "a health system", with some authors (Claesons 2002, Hurst 1991, Frenk 1994) preferring to restrict the definition to the formal heath care delivery system leaving out those systems which do not directly deliver health care services, this study opted for an all inclusive definition in line with comprehensive PHC. This study considers the private for profit practitioners some of which may not be formally registered with government but treat malaria, as part of the health system. The study also considers other social service sectors with potential to contribute to health status improvement directly and indirectly as part of the health system. Some of these sectors include infant schools, community development, agriculture and fisheries departments. This study investigates the responsibilities of the key actors in malaria control; what they actually do, and how well they do what they are expected to do or have potential to do; and their reasons for successes and failures.

## 1.14 Significance of the study

This study directly contributes to the development and further refinement of the health policy making frameworks of PHC and HSR. This study, just like PHC is concerned with the health needs of the community, understanding how the health care systems deal with the immediate problems of ill-health and disease, as well as prevention upstream. This study empirically demonstrates the relationship between community needs and a comprehensive policy in juxtaposition with the bottom-up approach to health policy and planning. This study is concerned not only with triggers to policy changes but comes up with elements informing an adequate policy with the hope that this will lead to reforming health care institutions and improvement in their effectiveness to meet social needs. By proposing a framework for an adequate policy, this study goes beyond the normative aspects of HSR to prescription. The prescribed framework is likely to enable health policy makers to improve policy formulation for successful implementation.

Furthermore, by analyzing the household illness and management experiences and relating it policy content, the study contributes to the development of the implementation theory. Although the implementation theory is perceived as relating to purely the technocrats, this study empirically demonstrates the need to regard service beneficiaries as important policy implementers; and service utilization and the underlying values as important elements of the theory. Such perspectives broaden the dimensions of the theory. Other neglected aspects in the implementation theory are the processes, actors, and issues of social capital and empowerment. It is hoped that the findings of this study will inform and provide information on neglected issues and their importance in policy.

This study succinctly shows that policy and community organization are not separable because while policy may describe the societal response to the problem, community organization indicates how to organize functions, power and resources among all actors to manage the problem. However, for unclear reasons, community organization and its concepts like social capital, participation and empowerment are not usually comprehensively operationalised in policy documents. It is one such approach which has not been well developed in third world countries in preference for community development. This study demonstrates the potential utility of community organization concepts and theory in developing countries.

Development literature is concerned about sustainable change or development (both economic and human). Community empowerment has been identified as having the potential to achieve sustained change through development of community efficacy and self-reliance as well as the attainment of the human rights and accountability. It is hoped that findings of this study will contribute rationale and innovative ways of involving the disadvantaged populations in policy making; and making health care systems more accountable to policy addressees. This is important given that common diseases like malaria tend to afflict the poor more than the rich.

Although it has been emphasized that policy development should be truly owned by the country based on local needs and capabilities, one distinguishing difference between policy-making in the developing and developed countries is their origin. In developing countries many policies especially in the health sector are reported to be initiated and highly influenced by the development partners such as UNICEF, WHO, the World Bank, IMF which organisations also provide the bulk of the funding, and technical support (Okuonzi 1995). The same donors also always come up at different time periods with paradigms and concepts considered effective in organizing, resourcing, and delivering services in poorly resourced environments. Examples of these include: selective primary care, vertical versus integrated programming, voluntarism, community participation etc. Many times the developing countries "move with the wind" and adopt them without first assessing their relevance and practicability to program implementation at the grassroots. Although this study is not meant to validate the approaches to service delivery and social change, it will contribute to understanding the appropriateness and ease of applying some of these paradigms and concepts and their effect on the desired social goals.

### 1.15 Organisation of the Thesis

This thesis is organised in eight chapters including this one. The eight chapters are organised in three broad groups. The first four chapters comprise of the introductory conventional background, theoretical and methodological material. The second group of chapters (Chapters 5-7) comprise of findings of primary data from two districts of Uganda – Mukono and Mpigi. The last chapter (8) wraps up all the chapters with conclusions and recommendations. The recommendations are presented in a form of a framework to guide the design and redesign of adequate disease control policies. The findings chapters are organised around the specific objectives. Interpretation and discussions are concurrently done in the findings chapters. Below is a brief description of the content of each chapter.

Chapter one has provided the background to the subject area and the Millennium Development Goals (MDGs), distilling and locating the research question and problem. It has highlighted the position and importance of policy in the mitigation of poverty, poor health status, and low human development or social welfare; thus rationalizing the study. Chapter Two describes the socio-economic political *context* of Uganda within which malaria control policy is formulated and programs implemented. Chapter Three presents a review of earlier research on health system practices and *threats* to malaria control and prevention. It also discusses the theoretical frameworks used by the study during the study inquiry, data analysis and reporting. Chapter Four presents the methodology used to answer the research question.

Chapters (5, 6 and 7) present the primary data from the field. Chapter Five presents the household and community experiences and construction of the problem of malaria as well as the control and prevention needs that need to inform policy. This chapter answers specific objective one. Chapter Six presents the findings relating to organizational capacity of health care system and opportunities at the local levels to plan and implement malaria control activities. This chapter largely addresses implementation issues, challenges and threats in health care systems. This addresses specific objective two. Towards the end of these two findings chapters the study draws implications for disease control policy by specifying areas needing policy.

Chapter Seven analyses the capacity of the existing malaria control policy to control the disease. It basically attempts to answer specific objective three. In this chapter, a

comparison is made between the provisions of the disease control policy and the identified disease control needs in chapters 5, and 6. Gaps in policy and inconsistencies are identified.

Chapter Eight draws conclusions for the entire study and recommendations in the form of a framework for guiding the design and redesign of an adequate policy. The last chapter identifies where social work could be of use in fighting disease. It also comes up with suggestions for future research. Throughout the thesis, and particularly in the findings chapters, concepts are *italicized*.

# CHAPTER TWO

# CONTEXTUALISING MALARIA CONTROL POLICY IN UGANDA

This Chapter describes the socio-economic political context of Uganda within which malaria control policy is formulated and programs implemented. The *context* together with the processes and actors are important because "they make the difference between effective and ineffective policy choice and implementation" (Walt and Gilson 1994:355) Among the issues discussed in this Chapter are the health status indicators of Uganda, health service delivery systems, the MDGs and the Poverty Reduction Action Plan (PEAP); health care financing and the role of the donors. The last sections discuss malaria, its risk factors, consequences and global interventions.

#### 2.1 Physical geography and climate of Uganda

Uganda covers an area of about 241,500 square kilometers of which about 15.3% is open water, 3.0 per cent permanent wetlands, and 9.4 per cent seasonal wetlands. Uganda has many lakes and rivers with tributaries of significant importance to mosquito breeding and malaria transmission (NEMA 2002). Uganda has 5 climatic zones based on rainfall pattern and amount. Three of the zones receive rainfall twice a year but of varying amounts while four zones receive rainfall once a year followed by a marked dry season. The zones are: the Lake Victoria Zone, the Karamoja region, western Uganda, Acholi Kyoga Region, and Ankole Southern zone. There are also two highland zones – the eastern highlands and south western highlands (NEMA 2002). In terms of malaria distribution, most climatic zones in Uganda irrespective of the amount of rainfall they get, are malaria endemic (of different degrees) while the two highland areas experience epidemics.

#### 2.2. Administrative and population characteristics of Uganda

By June 2007, Uganda had 80 districts (UBOS 2008). The administrative boundaries of the districts are shown at the beginning of this thesis. Each district consists of counties, which in most cases are also the political constituencies. A county consists of subcounties, a sub-county of parishes, and a parish of villages (Government of Uganda 1995). A representative hierarchy of councils exists at all these levels. The important ones are the district and the sub-county level which have directly elected councils with considerable powers and also responsibilities for policy implementation, resource mobilisation, allocation, service monitoring and supervision. Each level has an administrative head with a separate line of command.

Uganda had a population of 29.6 million people by mid-year 2008 being projected to reach 40.6 million by July 2017 (UBOS 2008). Uganda is reported to have the third highest population growth rate in the world of 3.2 percent, higher than the Sub-Saharan Africa average of 2.4 percent (UNDP 2007c). According to the recent Demographic and Health Survey (2006), Total fertility rate (TFR) was 6.7 children per woman. The TFR is higher in the rural areas compared to the urban (7.1 and 4.4 respectively). More than half of the population (51 percent) are females. The proportion of children was 56 percent in 2002. The high population growth rates has adverse implications on the attainment of the MDGs. Uganda has also got many refugees from neighbouring countries.

#### 2.3 Human and economic development in Uganda

Overall literacy rate is estimated at 69 percent among persons aged 10 years and above (UBOS 2006). More males than females were found to be literate in the national household survey of 2005/2006. These could write and read with understanding in any language. About 72% of the people in 2002 lived in semi-permanent houses, about 50% in mud and pole walled houses; and 48.6% had a radio (UBOS 2002). The main economic activities are agriculture, livestock keeping and a combination of both.

The table below summarises the human development indicators in Uganda.

Human development Indicator	Status	Source
Literacy (2006)		
Overall literacy among persons aged >10 years	69	UBOS 2006
Urban literacy	86	
Rural literacy	66	
Male	76	
Female	63	
Health		
Life expectancy (2005)	50.4	UNDP 2007
Life expectancy for females	52.0 years	
Life expectancy for males	48.8 years	
Infant mortality (2006)	76 per 1000 live births	Uganda
Under five mortality rates	137 per 1000 live births	demographic health
Maternal mortality ratio	435 per 100,000 live births	survey 2006
Economic growth (2005)		
Real GDP per capita growth (%)	6	UNDP 2007
Per capita GDP (Ug Shillings)	575,405	
Per capita incomes in US\$	334	

Table 1: Human development indicators of Uganda

Uganda continues to possess some of the poorest health status indicators in Sub-Saharan Africa having the highest rates of premature deaths and low life expectancy. Although the overall life expectancy has been improving, it is still lower than the average for Africa (52 years) and other developing countries (64 years) (UNDP 2007c). Infant mortality rate which is a general proxy for overall disease levels is also still high compared to the millennium development health target of 41 by 2015 and PEAP target of 64 by 2017. Likewise the child mortality rate is more than double the MDG target of 60. The maternal mortality ration target for the MDG is 131 (UNDP 2007c). Although the mortality rates are declining, the pace of progress is slow. It has been consistently reported in the development literature that with the current pace at which mortality rates are declining, Uganda is unlikely to meet the millennium development health goals and attain sustainable development (UN 2007, UNDP 2007a, UNDP 2005a).

The leading causes of morbidity and mortality in Uganda are communicable diseases including malaria, sexually transmitted infections, HIV/AIDS, diarrhoea, perinatal and maternal conditions, nutritional deficiencies, childhood conditions like pertussis and measles; and tropical diseases like onchocercias, schistomiasis, and trypanosomiasis. Most of the communicable diseases in Uganda are preventable or amenable to reduction

using the existing science and technology (Bradley 1999, Mackay 2003, Kaseje et al 2005).

Uganda also experiences non-communicable diseases like cancers, cardiovascular diseases, diabetes, mental and psychiatric conditions. There are emerging and reemerging conditions like cholera, and ebola which have taken a toll of people's lives in recent years. However of all these diseases, malaria is the leading and most serious health problem in Uganda (MoH 2001). According to the Uganda National Household Survey Socio-economic Module (2006), 49.6% of the people reported to have suffered from malaria/fever followed by respiratory infections (14.1%), diarrhea (9.4%), injury (6.8%), skin infection (3.2%) and others (16.9%).

Poor health status indicators in Uganda are co-existing with reported economic growth and social transformations (Nakanyike and Dogde 2002, MoFPED 2004, Republic of Uganda 1999, MoFPED 2003, Kirunga et al 2002, UNDP 2007c). This implies existence of inequalities and distorted development. Since 1987, Uganda developed and sustained a macroeconomic framework that helped to transform the country's economy from the status characterised as a basket-case in the early 1980s to a success story by the mid 2000s. The policies included control of inflation, maintenance of a competitive exchange rate and low and stable interest rates, a steady growth in the private sector investment and expansion of credit to the private sector (UNDP 2007b). Uganda consistently implemented these reforms leading to the achievement of economic growth averaging 5.6% per year in recent years. During the reading of this year's government budget (2008/2009), it was reported that the economy had grown by 8.9%. This economic growth rate is considered quite significant by global and even developing country standards (NEMA 2002). Uganda's per capita Gross Domestic Product (GDP) is estimated at US \$334. It is actually indicated that this figure would have been higher had it not been for the high population growth rates of 3.2 per cent per year between 2000 and 2005 (UNDP 2007c).

Absolute poverty, a condition which is recognized to be the main underlying cause of the poor health situation in the country is reported to have been reduced from 56 percent in 1992 to 38 percent in 2002/03 and to 31 per cent in 2005/06. For rural and urban residents, the respective declines between 1992 and 2002/03 were 60 percent to 39 per cent, and 28 percent to 10 percent. With respect to regional variations, the declines were: 46 percent to 20 percent in Buganda (central Uganda); 59 percent to 37 percent in eastern Uganda; and 53 percent to 37 percent in western Uganda (NEMA 2002). The only exceptional region which did or has not experienced improved economic wellbeing has been the northern region whose poverty declined from 72 percent in 1992 to 60 percent in 1997, and then increased again to 66 percent in 2000. This was due to the long war between the Lord's Resistance Army (LRA) and the Ugandan military force (UPDF) which displaced many people leading to minimal production and incomes. Improved economic development should lead to improved standard of living with most people being able to afford services such as medical care for themselves and their sick children.

#### 2.4 The Millennium Development Goals in Uganda

Improving human development has also been a major goal of the Government of Uganda as articulated in the national development-planning framework, the Poverty Eradication Action Plan (PEAP). PEAP has four goals, namely: economic growth and structural transformation, good governance and security, increasing incomes of the poor, and improving the quality of life of the poor. Improving the quality of life of the poor is the ultimate objective of all poverty reduction programmes. With regard to this particular pillar, the essential elements of it are: provision of quality health care, provision of universal primary education (and recently universal secondary education), functional adult literacy and mitigating the impacts of HIV/AIDS. Improved quality of life means providing psychosocial and material support for disadvantaged, traumatized and stigmatized groups including AIDS and internally displaced persons, as well as the mentally ill. Under PEAP government also plans to improve the environment by ensuring environmental sustainability (UNDP 2003b:5). With regard to the health sector, PEAP targets at reducing infant mortality rate to 64 per 1000 live births by 2017, and under-five child mortality rate to 120 per 1000 live births by year 2017 (UNDP 2007c).

Uganda's Poverty Eradication Action Plan (PEAP) which was conceived in 1997 (much before the Millennium Declaration) shares values with the MDGs. The only difference is the specified target and year of attainment of the MDGs. The MDGs target year is 2015, while that of PEAP is 2017. The MDGs are more ambitious than the PEAP targets. For example, PEAP aims at reducing infant mortality to 64 per 1000 live births in 2017 while the MDGs aim at 41 per 1000 live births by 2015. Likewise, the MDGs aim at reducing child mortality to 60 per 1000 live births by 2015 compared to 120 of PEAP. The MDGs aim at reducing maternal mortality to 131 by 2015 while PEAP does not indicate a figure.

While Uganda has made progress in many areas of social development such as reducing income poverty, HIV/AIDS prevalence, and increasing school enrollment, it has made slow progress in combating infant and under-five mortality as well as maternal mortality. It has also made slow progress in reducing malaria one of the leading causes of morbidity and mortality (UNDP 2007b). Major threats have been inequitable distribution of income wealth and high population growth. With the current population growth rate of 3.2 percent, Uganda needs to be growing economically at the rate of 9.6% to ensure steady welfare improvement among the rural masses. Failure to reduce infant and child deaths has been associated with the low mothers' educational attainments young age at which a mother starts having children, access problems to health care services, and low immunization status of many children. Children whose mother completed primary education have a mortality rate lower by 20 per 1000 births compared to children whose mothers did not complete primary education. Infant mortality rate (IMR) for children whose mothers have a higher education is 34 per 1000 lower than those children whose mother did not complete primary education. Delayed child birth reduces IMR by 4 per 1000. Having access to health services reduced IMR by about 31-35 deaths per 1000 births. Children receiving full vaccination would reduce the IMR rate by 15 per 1000 births. First born children and twins have also higher chances of dying -2 higher and 200 deaths per 1000 births respectively (UNDP 2007a).

## 2.5 The history of health policy in Uganda

Policy analysts urge that to understand current policy there is need to understand its history, and evolution. The history of policy provides an understanding of the interventions which were successful and those which failed and the reasons for the status quo. The historical context is described as "the soil in which social policy grows and takes root" (Chambers 1993:36).

The history of health policy in Uganda has gone through an evolution determined by the human situation and political systems. They have oscillated between great inequities and universalism, a curative and urban bias and less of prevention and promotion. Health policy in Uganda can be traced from 1887 when Imperial British East Africa (IBEAC) a trading concern first brought doctors to look after its staff including its Indian workforce which was constructing the Uganda Railways (Okuonzi and Macrae 1995). The Colonial office took over administration of the company in 1894 and established a medical department in what was then the Uganda Protectorate. While initially the department was meant to meet the health needs of the colonial staff, the break up epidemics, including plague, sleeping sickness, small pox, malaria and later syphilis forced the administration to extend medical care to the native Africans. At the same time missionaries started to provide medical care as part of a wider process of evangelism. Thus, by independence, a considerable infrastructure consisting of urban hospitals, a number of rural health centres, nursing schools, and two schools to train medical assistants and health inspectors to promote home hygiene had been established. Given this expanded function, the colonial Medical Department was upgraded to a Ministry of Health in 1961.

The period from 1961 to 1970 saw a rapid expansion of physical infrastructure, notably the construction of Mulago National Referral and Teaching Hospital and 22 rural hospitals. "Thus, health policy in the decade following independence<sup>10</sup>, reinforced the curative urban biases of the colonial health system paying relatively little attention to preventive and promotive aspects of health care" (Okuonzi and Macrae ibid:125). The medical model has continued to dominate the health care system in Uganda. The years

<sup>&</sup>lt;sup>10</sup> Uganda, a former British colony got independent in 1962.

between 1970 and 1986 were years of political turmoil, wars, population displacements, and a reversed economy with implications on service delivery. The need for humanitarian aid led to the organization and delivery of international aid, a proliferation of international relief agencies, particularly NGOs developing programmes in Uganda. This led to selective policies and vertical programs; and a policy process which is donor driven and outcomes which are donor influenced (Okuonzi and Macrae ibid). This history shows bias of policy towards curative care as against prevention and promotion.

#### 2.6 Institutional framework for policy formulation in Uganda

According to the Constitution of Uganda, the policy management process is the mandate of the Executive Office – the President, and his cabinet. The cabinet comprises of the Vice President, Prime Minister, deputy Prime Ministers and other cabinet ministers. The Constitution empowers Cabinet to determine, formulate, and implement the policy of government. "Cabinet makes most of the key policy, financial and resource decisions of government" after which they are presented to parliament for formal presentation. The key functions of Cabinet are: 1) determining the government's strategic direction and priorities; 3) securing agreement on steps needed for the passage in Parliament of the Government's programs including its legislative agenda, and 4) monitoring implementation of its decisions (Opio-Lukone 2004).

Most policy proposals for Cabinet originate from within the Executive Branch; that is, the presidency and from government ministries. Whatever the policy initiatives, the senior public official, the Secretary to Cabinet acts as the gate keeper to the policy agenda. In Uganda, the key sources of strategic policy areas for inclusion in the policy agenda would be the President's Election Manifesto, the Budget Speech, State of Nation Address, and the National Conference. However, because no conscious policy agenda-setting takes place, policy promises in the Manifesto and other Presidential Statements find their way into the budget either through the Medium Term Expenditure Framework (MTEF) or the Annual budget cycle and the PEAP (Opio-Lukone 2004).

Another source of policies is the donors who may require setting up new policies as part of their conditionalities for providing external support to the budget. A matter is brought to Cabinet under the following conditions: a) when it represents new government policy, b) when it represents a change in existing policy approved in a previous Cabinet decision, c) when it has significant financial implications for the government, d) when it has significant implications for other ministries, e) when it requires new legislation f) is a response to a report of a Committee of Parliament g) is a matter covered by international agreements h) is deemed to be an especially politically sensitive matter, i) matters relating to the appointments of Boards of parastatal bodies (Opio-Lukone 2004).

It is apparent from the above description of the policy agenda setting and the division of labour between Central Government and the local governments (stipulated under the decentralisation policy) that policy formulation in Uganda applies a top-down rational approach. The central government decides the actions to take to solve a problem while the local government implements the decisions. Policy-making and especially problem definition is done by the representatives of the people the political leaders, professionals or experts in the Ministry of Health, development partners, or even the mass media (Parsons 1995). These may have varied interests, values, priorities, perspectives and political constituencies (Walt 1994, March 1998, Neilson 2001, Kingdon 1984).

# 2.7 National health policy and service delivery organization in Uganda

Numerous public and health sector policy reforms have been instituted to guide the improvement of the health system performance, general governance and health status in Uganda. These have been guided by internationally conceived frameworks for policy formulation and planning of PHC and HSR. Using the above policy frameworks Uganda has (since the late 20<sup>th</sup> century) formulated a national health policy, two national health sector strategic plans, specific disease policies or implementation guidelines, and plans. The goal of the National Health Policy of 1999 is the "attainment of a good standard of health by all people in Uganda, in order to promote a healthy and productive life". Implicit in the health goal is the issue of equity of health status, availability, access and use of health services by all people regardless of ability to pay. Improved *health for all* is to be attained through the provision of a minimum health care package (MHCP) targeting

the most prevalent health problems in the country using the most cost effective interventions. The policy also targets environmental health, health education and promotion, school health, epidemics, disaster prevention, preparedness and response, as well as mental health.

Government commits itself to progressively increase funding to the health sector. It is emphasized that resource allocation will be on health interventions that are demonstratively cost effective, have the greatest impact on reducing mortality and morbidity, have a clear bias to protecting the poor, and the most vulnerable populations as well as taking into consideration gender related health care needs and concerns (MoH 1999).

Government further commits itself to addressing the major constraints of inadequate numbers and inappropriate distribution of trained health personnel; and partner up with the private health care sector to improve the health status of all people. The government also planned to provide an effective framework for strategic policy review and formulation, planning, budgeting, monitoring, evaluation and research. Donors are to be coordinated and legal aspects of the sector addressed. Communities are to be empowered to take responsibility for their own health and well being and to participate actively in the management of their local services.

The Health Sector Strategic Plans (HSSP) of 2000/01-2004/05 and 2005/06-2009/2010 indicate the activities to be carried out by the center and local governments with respect to each policy element in the context of decentralization. The HSSP was evaluated (MoH 2003). One of the success stories and globally recognized one has been the reduction of HIV/AIDs from a prevalence of 30 per cent to 6.0 per cent among pregnant women in 20 years (MoH 2000). There has also been construction of many more health units at different administration levels of the district, county, sub-county and parishes providing curative, preventive, and promotive health services.

Uganda has a malaria control policy and strategic plans. These detail the actions to take to control illness, and deaths. The National Malaria Control Policy and strategic plans are the subject of analysis of this study and are explored and described in detail in Chapter Nine. Health care services in Uganda are provided by government, the non-governmental organisations, the private for profit health care sector and the traditional sector. The Government of Uganda is the major healthcare provider. Out of a total of 2533 health units which existed in the country by 2002, the Uganda Government owned 1694 units (66.9%). This figure changes each day as the government continues building units in line with its grand plan to ensure that each parish and village has a health care unit as a way of improving access. Communities, local governments, and NGOs also construct units some of which are later staffed and stocked with drugs by government. By 2002, the health care units which were privately owned were 280 (11%), while 559 (22%) were for NGOs. The private for profit is however a volatile growing sector.

As a provider the government has a structure of health care units of different sizes and functions existing at national, regional, district, health sub district, sub-county, and parishes. Health services in government owned units are supposed to be offered free of charge. However, because of limited financial resources this may not be totally happening and some users find themselves spending on drugs obtained at a price from the open market. To be able to sustain themselves, some hospitals also run private wings for patients able and willing to pay for services.

The Government of Uganda is involved in health policy formulation, financing, regulation, and provision. The local governments (the districts, health sub-districts, and the sub-counties) oversee the health care activities by especially allocating and controlling financial and human resources. They also plan for primary health care activities at the local levels. Other sectoral agencies such as agriculture, education, housing, communications etc produce health benefits indirectly as a result of the goods or services they provide.

The health services delivery of Uganda has six levels of care: a national referral hospital, a regional referral hospital, a district general hospital, a health centre level 4, 3, and 2. The health centre level I is a first aid post which serves a village with a catchment population of about 1000 people. It is supposed to provide community based preventive and promotive health services. The health centre level II serves a parish with a population of about 5000 people providing preventive, promotive, and outpatient curative health services and outreach care. The health centre level III is a sub county unit serving about 20,000 people. It is supposed to provide preventive, promotive, and outpatient curative health services and outreach care. The health centre level III is a sub county unit serving about 20,000 people. It is supposed to provide preventive, promotive, and outpatient curative maternity, inpatient health services, and laboratory services.

The health centre level IV is located at the county level. It is supposed to provide preventive, promotive, outpatient curative, maternity, inpatient health services, emergency surgery, blood transfusion and laboratory services. The health centre 4 is very important in the delivery of health care services since it is the headquarters of the health sub district. The health sub district is currently concerned with planning the health care services in the county or constituency, control of health care resources, coordination of the preventive and promotive services in the county, as well as provision of support supervision to units in its catchment area. The regional referral hospital is expected to serve several districts covering about 2 million people. This has services offered at the district general hospital as well as specialized services, teaching and research (MoH 2002).

### 2.8 Health care financing in Uganda and the role of donors

The Uganda Government is spending very little money on health care compared to the WHO recommended figure of \$60. For example, Ugandan expenditure on health services in the 1999s was only US\$2.82 per capita, while private spending was estimated to be US\$ 4.91 per capita yielding total per capita of US\$7.73. This fell far short of the minimum health care requirements (Mugaju 1996). Mugaju notes that despite improvements in hospital infrastructure country wide, with the rehabilitation of major health units and dispensaries at county and sub-county levels, assisted by European Economic Community (EEC) and the Nordic countries, spending on health by

government in Uganda virtually remained lowest in the East African region between 1986-1996. Current spending by the Ugandan Government is only 9.6% which severely threatens success (Root et al 2003).

A number of other reasons are given for the limited funding of the health sector by the government especially between 1986 and 1996 in Uganda. These include: poor revenue base, a heavy debt of US\$3.1 owed to IMF, the World Bank and other bilateral institutions; the in formidable problems inherited by the National Resistance Movement (NRM)<sup>11</sup> and especially the negative economic growth in the 1970s; the attitudes that education and health consume resources without immediate returns on investment (Mugaju 1996, Okuonzi and Birungi 2000). Between 1986-1996, the government of Uganda concentrated on the economy, security, stability and the public service reform.

Another reason given for the financial constraints in the health sector is corruption. For example, "much of the donor funds pumped into the Ministry of Health projects over the period 1991-1994, such as the Second Health Project has been reportedly embezzled" (Mugaju 1996:80). This has also been true with the Global Fund to fight AIDS, TB and malaria in Uganda necessitating a commission of enquiry and legal actions in courts of law against a Minister of Health and his deputy (Monitor 22nd March 2006). In February 2008, another Minister of Health reported that "we estimate that we are losing half of the drugs we send to districts through embezzlement" (New Vision: Wednesday February, 13<sup>th</sup> 2008:5).

Other than provision of health care services through public taxation, and out of pocket, Uganda has not tried out other measures recommended for mobilizing resources for health care on a wide scale. Health insurance is not well developed in Uganda and the limited options existing serve a limited proportion of the upper and middle class and some employees of certain organisations. Community based insurance schemes have been tried in some places where local people save some money with a hospital

<sup>&</sup>lt;sup>11</sup> NRM stands for National Resistance Movement. This is the name of the liberation military and political movement which ushered in the current government led by His Excellence President Yoweri Kaguta Museveni, of the Republic of Uganda since 1986.

(especially NGO paying units) and seek care without getting money out of their pockets or selling things. One such scheme was successfully implemented in Ishaka Hospital, in Bushenyi District (Batuusa 2005). While such schemes are reported to have decreased on severe malaria they are unfortunately still few and many are being tried as pilot projects (MoH 2005).

External assistance continues to be important to Uganda's development in all sectors accounting for more than 50% of the total government expenditure. Donor support takes the form of financial and technical support. Technical cooperation is the provision of personnel on concessionary terms to perform specific roles in a recipient country; of finance to meet research, training or scholarships, costs of equipment to support the aims and objectives of programs (Tereka 1995). Technical cooperation in Uganda has been purposed for: capacity building, including institutional and resource development, reversal of brain drain, efficient planning and implementation, and transfer and development of appropriate technology (Okello et al 2004).

Since 1986 when the current government of the National Resistance Movement came into power, the country has enjoyed the support of the multilateral and bilateral development partners. Between 1990 and 1998, there was a high incidence of external aid flows into Uganda accounting for over 60 percent of the government's total government expenditure (NEMA 2002, Okello et al 2004). The health sector was ranked the fourth beneficiary in terms of total allocated monies after economic management, agriculture, forestry, and fisheries, international trade, and natural resources. Again, in the same time period, it was indicated that the health sector was the leading recipient of technical cooperation. It was projected that external assistance to Uganda was likely to rise from \$560 million in 1996/97 to \$1,100 million in 2015/16 (Babingambah 2000). Donor assistance while deemed even more important for the attainment of the MDGs have some serious problems which may affect the quality of policy and outcomes. Chapter 3 reviews some of these problems as they affect many developing countries.

### 2.9 Malaria transmission and consequences

Malaria is an old disease which has existed for a million years or more; with falciparum malaria causing deaths for millennia (Rugemalila et al 2006, Heggenhougen et al 2003, Bradley 1999). While all parts of the world including USA, Europe and northern Australia used to experience this disease, it was not until 1960s when it was eradicated in many of the western countries leaving it to Sub-Saharan Africa and other developing countries. Malaria is a major cause of illness, death and disability in SSA and Uganda in particular. It is estimated that each year, up to three million deaths and close to five billion episodes of clinical illness (possibly meriting antimalarial therapy) occur throughout the world with Africa having more than 90% of this burden.

Under-five children and pregnant women are the most vulnerable to malarial illnesses and deaths in endemic areas. Children suffer about six attacks of malaria each year. Twenty five percent of all cause mortality in children aged 0-4 years has been attributed to malaria (Bates 2004). Among these groups, the poor people bear the greatest burden of the disease. Actually, in his inaugural lecture given during an international conference held in Rome to mark one hundred years of malariology Bradley (1999:14) notes that "as efforts to control malaria intensify with the present tools, the malaria that remains will increasingly fall upon *the poor, the marginalized* communities, refugees and those subject to war and other disturbances such as transmigration". The greatest burden of the disease occurs in resource poor environments where geographical access to government health units is limited and where both communication and regulatory strategies are compromised (Amin et al 2003). Malaria epidemics and also urban malaria is reportedly on the increase (Breman et al 2004, Donelly et al 2005, Klinkenberg et al 2006, Davis et al 2006, Geissbühler et al 2007).

Like in many other SSA countries, malaria causes more illness and deaths in Uganda than any other single disease entity<sup>12</sup>. The Ugandan Ministry of Health reports that malaria is on the increase in the country both in terms of spatial distribution and intensity.

<sup>&</sup>lt;sup>12</sup> World wide, malaria is the leading cause of mortality and morbidity estimated to cause 300 to 500 million clinical cases every year and between one and three million deaths, mostly among children. Ninety percent of those who die from malaria are in Africa (Rugemalila et al 2006:2).

Morbidity and mortality remains unacceptably high and worsening. Estimated annual numbers of deaths from malaria range from 70,000 to 100,000 in Uganda. Malaria is reported to account for 52 per cent of the outpatient department attendance and 9-14 percent of all inpatient attendances, with a case fatality of 4 percent (MoH 1995, MoH website). Community based health surveys put the prevalence of fevers among the under five children at 41 percent (UDHS 2006). Fever is a prominent symptom of both malaria and acute respiratory infection (ARI) in children.

Malaria is highly endemic in Uganda with 63 percent of the Ugandan population being exposed to high transmission levels, 25 percent to moderate transmission levels, while 12 percent live in areas with low or "unstable malaria" transmission that are epidemic prone (MoH 2005). The northern and north eastern parts of Uganda have the highest levels of malaria endemicity and may be regarded as holoendemic. Buganda Region (central Uganda -- from which the study districts were chosen) has medium to high malaria transmission and may be classified as hyper-endemic. All people living in Uganda are at risk of being infected with malaria parasites and suffering attacks of malaria.

Malaria is caused by a parasite transmitted into the human body by a bite of a female Anopheles mosquito. There are over 120 parasite types of which four are of consequence to humans: P. falciparum, P. vivax, P. malariae and P. ovale. There are nearly 400 species of Anopheles mosquitoes of which some 60 are proven vectors of human malaria. Each geographical area has got about three or four anopheles species that can be regarded as important vectors. To be an effective vector a specie must be present in adequate numbers in or near human habitation. A specie with a marked preference for human blood rather than animal blood is a better vector (Bruce-Chwatt 1985). Effective transmission is also dependent on the length of the life of the mosquito, this being affected by the temperature and humidity of a place. The best condition for the development of plasmodia in the Anopheles and the transmission of the infection are when the mean temperature is within a range of  $20^{\circ}$ c -  $30^{\circ}$ c, with the mean relative humidity of 60%. There could be anophelism without malaria (Bruce-Chwatt 1985). Changes in the environment and especially global warming is taking malaria to previously colder places such as mountains which never used to have malaria (Bradley ibid).

The presence of standing or gently flowing water supports the larval and adult stages of anopheles mosquitoes. Rainfall, its duration and amount also has an effect on the multiplication of the anopheles mosquitoes due to greater breeding activity and also due to a rise in relative humidity and higher probability of survival of the mosquitoes. Plants accumulating in small collections of water support the breeding of anopheles. The amount of rainfall also matters in the sense that if it is too much then it transforms small streams into rapid torrents and thus strand many larvae and pupae on the edges of the water channel. Conversely, deficient rains change rivers into a string of pool in which certain anopheles breed profusely. Malaria transmission is reported to occur some 4 - 6 weeks after the rainfall peak. (Talisuna et al 2001).

Generally malaria is said to be man-made because a lot of malaria vector breeding habitats are made by people (Talisuna et al 2001). Papyrus swamps or uncleared forests are not ideal breeding places for malaria vectors. However, once reclaimed or cleared they become very ideal for mosquito breeding and malaria transmission. Malaria causing mosquitoes do not breed in dirty or polluted water although other types of mosquitoes breed in such places. Other breeding habitants for the anopheles mosquito are: pools, ponds, burrow pits e.g. brick making/murrum/sand pits, rice fields, roadside pools, rain water collections, lake/river/stream edges, river bed pools, seepage water, wells, overhead tanks, channels, canals, hoof prints, car tyre, tracks etc.

The socio-economic environment also constitutes a risk factor for malaria. Movements of people from one place to another either permanently (migration), or temporarily (circulation) for work, trading, attendance at funeral etc is one risk factor associated with malaria transmission. Human perceptions and resultant behaviour are also a major risk factor for malaria transmission. People hold contrary views about the disease/illness leading to irrelevant preventive and treatment actions (Heggenhougen et al 2003).

Agriculture also increases malaria transmission because of the greater numbers of people who live in proximity with large numbers of animals (Heggenhougen et al 2003). This creates peri-domestic-puddled water which is an ideal breeding ground for the anopheles gambiae vectors. Agricultural settlements often contribute to environmental changes or ecological changes bringing deforestation, changes in water use, and alterations in the relative concentration of domestic to wild animals with an accompanying change in species as well as vector to human contact. Water source development and especially irrigation may also transform seasonal malaria into perennial malaria. For example, Bruce Chwatt (1985) indicates that building of dams and man-made lakes raises the ground water table and often causes seepages and flooding, and thus contributing to the creation of new larval habitants. Other economic development projects resulting in water pools are burrow pits from road construction, and brick-making. Despite the environmental problem of deforestation, reforestation is also another problem for creation of pools of water good for mosquito breeding (Bradley 1999).

Gender differences in social customs, or occupations can lead to increased exposure to malaria (Bates et al 2004). While women may be more willing than men to invest in malaria-prevention measures, lack of financial resources and decision making power limits their ability control and prevent malaria. The time spent by women when caring for sick children affect their livelihoods. This combination of factors tends to make women more vulnerable than men to the consequences of malaria (Bates et al 2004, Heggenhougen et al 2003). Poverty has also been also associated with malaria. It has been indicated that poor people are more likely to sleep in poorly constructed houses. In situations of land shortages, they construct houses near mosquito breeding sites in swamps or marshy areas where land is cheapest (WB 2002, 2003, 2005).

Malaria does not have a distinctive symptomatology. It shares symptoms with other diseases. Most clinical episodes include febrile illness with non-specific symptoms. Severe malaria takes two broad forms: severe anaemia and cerebral malaria. Malaria induced anemia causes more deaths than any of the other manifestations of this disease (Breman et al 2004). Most of the inpatient mortality is due to respiratory distress
syndrome and cerebral malaria (CM). Cerebral malaria is the most severe neurological complication of malaria presenting one to three days with fever, seizures and coma. Affected children die within 48 to 72 hours unless they are rushed to hospital in time. Between 11-15 per cent of the survivors of cerebral malaria suffer gross neurological effects after discharge. Cerebral malaria tends to gain importance under lower transmission settings.

Malaria is not only a direct cause of death but also contributes indirectly to death due to respiratory infections, diarrhea, and malnutrition by impairing immunity. Malaria in pregnancy can cause miscarriages, fetal death, intrauterine growth retardation, low birth weight (less than 2500gm) and premature delivery. Women who are pregnant for the first time (primegravidae) are at particular risk for severe anaemia and sometimes death (March and Snow 1999, MoH 2001). If malaria is diagnosed and treated promptly, the infection may quickly subside. Without effective treatment, severe complications such as cerebral malaria, severe anaemia and multiple organ failure can rapidly develop leading to case fatality rates of 10-30% (Heggenhougen et al 2003, Roger et al 1999:)

HIV-positive individuals are more vulnerable to malaria infection and severe disease than those without HIV infection because of the degree of immunosuppression (Bates et al 2004). Although the biological link between malaria and nutrition is not clear, malaria is reported to adversely influence nutrition by restricting food intake through anorexia (lack or loss of appetite) and vomiting; children who experience frequent attacks of malaria fail to gain weight and have retarded growth and impaired cognitive development (Bates et al 2004). Improved nutrition lessens the severity of malaria episodes and results in a decrease in malaria deaths (Breman et al 2004). Many people living in malaria endemic areas also have genes that cause red-cell abnormalities such as sick-cell disease which makes people vulnerable to malaria (Bates et al 2004).

Malaria has implications beyond health (NEMA 2002, MoH 2001). Malaria impairs the economic growth and human development; yet it is preventable, curable, and controllable on a large scale with good return on investments (World Bank 2005). It is a disease

which threatens the quality of life of the people and livelihoods. Children suffering from malaria may take 6-13 days per term out of school which may affect their performance (World Bank 2004, MoH 2001). When adults fall sick or when they have to attend to sick children they (the adults), may spend as many as 4-9 days out of work (MoH 2001, NEMA 2002). Malaria affects the economic growth of countries. It is, estimated that between 1965 and 1990, income per capita in countries with high malaria rates grew at only 0.4% annually, compared to an average rate of 2.3% for non-malarial countries (Kager 2002). The average income levels of highly malaria endemic areas are one-third of the non-malarious countries (Muula et al 2007, Kaul and Faust 2001, Utzinger et al 2002, WHO 2000). Malaria enhances poverty, which in turn causes poor disease management, locking people in the malaria-poverty trap. Malaria and its control directly and indirectly affect the attainment of <u>all</u> the MDGs. Actually control of malaria is described as having positive externalities and being a global public good (World Bank 2005).

# 2.10 Global malaria control interventions: the eradication and containment era

There has been two major eras characterizing malaria control activities. These are the malaria eradication period of 1940s to 1960s and the malaria control period which started around the 1960s. The eradication era emphasized primary medical care and adequate vector control. These were to be integrated with education and community participation, case tracing and treatment of contacts; and where appropriate environmental management and draining of marshes and fields (Butler 1997). Dichloro-diphenyl-trichloroethane (DDT)<sup>13</sup>, and related insecticidal chemicals were also used. While these measures were successful in wiping out malaria in western countries and a few developing countries, they were not greatly applied in most of the SSA countries other than Ethiopia, South Africa and Southern Rhodesia (Zimbabwe) (Rugemalila et al 2006). For various reasons including unaffordability and the development of resistance of parasites and vector to the insecticides *eradication* was abandoned in favour of *control* (Nchinda 1998, Rugemalila et al 2006, Kager 2002).

<sup>&</sup>lt;sup>13</sup> DDT was developed by Müller (a Nobel Prize Winner) in 1945. DDT had abilities to kill the mosquitoes and had residual effects (Afuna Aduula u.d).

Malaria control in SSA has been guided by a number of global and African conventions and declarations since the 1990s. Some of the declarations come across during this study are:

- 1. The Regional Strategy for Malaria Control 1991
- 2. The Amsterdam malaria control conference 1993
- 3. The Accelerated Action on Malaria 1995
- 4. The African Initiative for Malaria Control in the 21<sup>st</sup> century (AIM) April 1998
- 5. The Roll Back Malaria (RBM), July 1998.
- 6. The Abuja Declaration (2000)
- 7. Millennium development goals (2000)

All the strategies have similar technical interventions but differ on the emphases put on how to organize service delivery. Some advocate for a bottom-up and partnership approach, while some are silent on the manner of organizing services and raising funds for the malaria control programs. Some emphasize research and capacity building. The proposed technical interventions for malaria control are: early diagnosis and treatment using effective antimalarials; implementing selective and sustainable preventive measures, including vector control; detecting, containing, preventing epidemics; strengthening local capacities in basic and applied research; permitting and promoting the regular assessment of a country's malaria situation (ecological, social, and economic determinants of the disease) (Trig and Kondrachine 1998).

As a result of widespread antimalarial resistance, treatment of malaria in Sub-Saharan Africa is changing rapidly. Countries are abandoning chloroquine (CQ and sulfadoxine-pyrimethimine (SP) monotherapy in favour of newer combination antimalarial regimens, particularly artemisinin-based combination therapy (ACT) (Kremsner and Krishna 2004). It is anticipated that most countries in SSA will have transitioned to an ACT as first line therapy for treatment of uncomplicated malaria within the next 5 years. However, one major challenge of using ACTs is their high cost estimated at US\$1-2 per course of treatment. This is 10-20 times as expensive as the failed drugs (The World Bank 2005).

The ACTs are largely funded with the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM).

The Roll Back Malaria is an international response to malaria whereby affected countries together with multilateral organizations namely: WHO, WB, UNDP, UNICEF aim to half the malaria burden by half by the year 2010 and eventually reduce it to a level where it is no longer a major public health threat by 2030. RBM is unique in the sense that it recognizes the burden of malaria as a responsibility of every body, and tries to enlist everybody's participation in malaria control. It is a social movement aimed at minimizing suffering from malaria and it approaches malaria from a partnership viewpoint. Each partner contributes according to his or her comparative advantage as offered by his/her location in society. The movement emphasizes cost effective utilization of available resources and technologies. RBM is committed to a 4- part strategy of: prevention, rapid diagnosis and treatment, prophylaxis and treatment of pregnant women and the rapid response to malaria epidemics. Although the money committed to RBM has been increasing, there is agreement that more money is needed to halve deaths by 2010. For example, while the rising costs of treatment require US\$1-3 billion each year, GFATM committed a total of US\$904.5 million as of December 2004 covering two years up to mid 2006 (The World Bank 2005).

RBM gained a mandate from the highest political level with the signing of the Abuja Declaration on 25<sup>th</sup> April 2000. During the Abuja Heads of State meeting, the 44 representatives of the 50 malaria afflicted African countries resolved to: ensure appropriate and sustainable action to strengthen health care systems; and ensure that 60% of those suffering from malaria got prompt access to appropriate and affordable treatment within 24 hours of onset of symptoms by 2005. Another target was to increase investment in health sector spending to 15% of the overall budget. The heads of states also made seven pledges notably:-implementation of the approved plan of action; development of mechanisms for sharing information on malaria, waiving of taxes and tariffs on mosquito nets and materials; allocation of resources for the planned RBM

interventions; support to increased malaria research; commemoration of April 25 as African Malaria Day; and exploration of traditional medicine for malaria control.

In 2000 again the UN general assembly on recognition of the impact of malaria on development also set goals (Millennium Development Goals) to halt and reverse the scourge of HIV/AIDS, malaria and tuberculosis. The Millennium Declaration did not set any targets for malaria control implying that SSA countries have to use the Abuja targets and the RBM to conceive and organize appropriate policy for disease control. The "quick win" actions recommended by the United Nations (UN) for malaria control in the MDGs are the provision of free bed nets and effective antimalarials to all children by the end of 2007, ending user fees for essential health services; massive training of community based workers to ensure that by 2015 each local community has expertise in health and other service sectors, expertise in public sector management, and gender equality and participation.

Despite the existence of internationally agreed frameworks for designing comprehensive health policies as well as the many disease control specific conventions for use by SSA, not much positive change has been achieved in reality. This has been aggravated by the failure to develop efficacious vaccines for the most prevalent diseases like malaria (Rugemalila et al 2006, Breman et al 2004, Tetteh and Polley 2007).

# CHAPTER THREE

# HEALTH POLICY MAKING PROCESSES: PRACTICES AND THREATS FOR MALARIA CONTROL AND PREVENTION

In addition to the context, which has been described in the foregoing Chapter, the process and actors have been identified to be important elements of policy and implementation by policy analysts (Walt and Gilson 1994). This Chapter presents a review of earlier research relating to health policy making processes, practices and threats with reference to malaria control and prevention. The review discusses the policy making processes and implementation issues that affect the health sector broadly and those that are specific to malaria. An example of a malaria specific policy making issue is the inadequate cost effectiveness studies to determine the best control strategy; while the issue of donor influence in policy-making cuts across the health sector including malaria control and implementation. In the course of discussing the process, actors in the health care policy making industry and implementation are also identified. Practices and threats to malaria treatment and prevention are reviewed in relation to the happenings at the household and health care systems of all sizes including both the public and private health care sectors. A *threat* constitutes a harm or loss which creates feelings of vulnerability (Gitterman 1996, Germain and Gitterman 1996).

This Chapter also reviews selected theoretical frameworks which guided data collection and analysis. Barker (2003:434) defines a theory as "a group of related hypotheses, concepts and constructs based on facts and observations, that attempts to explain a particular phenomenon". Howe (2002) identifies five key areas where the use of theory can illuminate our understanding of people and their circumstances. These are: a) observation: it tells us what we can see and what to look for; b) description: provides a conceptual vocabulary and framework within which observations can be arranged and organised; c) explanation: it suggests how different observations might be linked and connected; it offers possible causal relationships between one event and another; d) prediction- it indicates what might happen next; and e) intervention: it suggests what might be done to bring about change. Thus, a theory provides a framework from which to explain and understand what is happening and why, so that we can recommend appropriate courses of action. In emphasizing the importance of theory, Turner (1996:10) indicates that without an understanding provided by the theory, "practice remains in the realm of guesswork and impressionistic response".

This Chapter presents the broad theoretical discourse from which the most relevant concepts were picked to guide study observations, analysis and explanations during thesis writing. Because of the broad scope of the study, a total of five theories were used namely: the implementation theory, life model theory, health belief model, community organization model and the human rights perspective to policy. The study acknowledges the problem of using many theories drawn from diverse sources; the problem of fragmentation and an incoherent knowledge framework leading to a knowledge pile rather than a knowledge base (Trevithick 2005). This is addressed at the end of the Chapter by presenting a synthesis of the frameworks indicating how the concepts may be linked or connected in practice.

# 3.1 Prioritisation and the Health Policy Making Process

# 3.1.1 Prioritisation in the health sector

Researches which compared the health sector performance with the education sector<sup>14</sup> in Uganda reported that the education sector performed better than the health sector because the former enjoys a stronger political commitment, an extensive infrastructure, straight forward objective, and the ability of the sector to set its priorities (Okuonzi and Birungi 2000). Mugaju (1996) supports this view that there is minimal prioritization in the health sector. He cites failure of the sector to implement preventive medicine. Okuonzi and Birungi (ibid) explain that lack of priority in the health sector has been due to absence of clear values and criteria for setting priorities. Such values include equity, protection of life, solidarity, freedom of choice, compassion, human dignity and rights, self

<sup>&</sup>lt;sup>14</sup> The Education Sector is the largest social service sector in Uganda with an extensive network of facilities, and institutions, staffing, receiving about 30% of the national budget compared to5-7% received by the health sector (Okuonzi and Birungi 2000:215).

determination, and so on. Tragakes and Vienonen (1998) indicate that in liberalised democratic countries, a political party which forms government but fails to implement such values is voted out of government. This process ensures that national values are included in health policy (Okuonzi and Birungi 2000).

The SCF attributes the poor prioritization in the health sector to government funding policies and processes. The SCF study points out that the Ministry of Health's dependency on other government bureaucracies such as the Ministry of Finance distorts the health sector priorities and investment decisions to fit the desires of the funding body. Sometimes the MoH undertakes low risk investments so as not to upset the status quo. Ministries of Health in developing countries are characterized as being vulnerable; being made to prioritize health activities on the basis of the availability of funding rather than the needs of consumers (SCF 1995). This vulnerability results in among (other things) incremental rather strategic approach to planning, centralization of organization, and preservation of traditional patterns of resource allocation and management (SCF 1995).

#### 3.1.2 Health policy making process: the role of government and the donors

The health sector is highly dependent on external funding (Okello et al 2004). Multilateral and bilateral development partners (the donors) are reported not only to bring financial resources and technical support, but they also come with micro policies, priorities, perspectives to problem solution, and procedures of accessing and using resources. These policies and under lying values reflect those of their mother countries or organizations and sometimes conflict with each other (Wekwete, Zwi and Mills 1995, Okello et al 1998, Okuonzi and Macrae 1995, Walt 1994, MoFPED 2004, Okuonzi and Birungi 2000). A good example is the conflict regarding whether to implement a comprehensive primary health care or selective primary health care which was engaged in by WHO on the one hand, and UNICEF and USAID on the other. It is indicated that such a situation may result in confusion on the part of government and policy implementers (Zwi and Mills1995, Walt 1994). Walt (1994) argues that the different mandates and perspectives from which donors operate confuse beneficiary governments not knowing which one to apply due to poorly defined and overlapping roles. Furthermore, the proliferation of aid supported projects often result in demands on the recipient country for separate accounting systems, evaluations, visits by missions tying up policy makers' time with duplicating efforts that impede actual implementation (Okello et al 2004). At other times, the donors are reported to have conflicting objectives and values with those of the government with resultant failure to achieve the intended social goals. Between the 1980s and 1990s, the health sector reforms in Uganda are reported to have been characterized by "pre-packed interventions designed by donor agencies, resembling interventions that were prescribed to almost all developing countries" (Okuonzi and Birungi 2000:207). In an attempt to improve funding and efficiency, the Ugandan health sector attempted to establish a market-oriented health care system through introduction of user fees, prepayment insurance, contracting services, promotion of a greater role of NGOs, hospital autonomy, civil service reform, and restructuring of the Ministry of health by reducing staff numbers. While some of these reforms were implemented and achieved immediate goals, many are reported not to have been fully implemented. Also many are claimed not to have had significant effect on access and quality of care. The donor influence in the country's health sector made attainment of universal health care elusive. Without the firm control of the GOU, "the health system became fragmented, verticalised, highly inequitable, and with varying service quality levels" (Okuonzi and Birungi 2000: 206).

Donors employ a developmental model (economic paradigm) which assumes that shortterm intensive investment stimulates improvement in social welfare (Cassels 1995, Okuonzi 1995). Once the initial investments are made, recipient countries are expected to continue to support that investment into the future, including provision of capital replacement, and running costs and administrative and technical expertise. However, Save the Children Fund (SCF) (1995) found that many times recipient countries did not sustain the benefits and structures put in place by the donors. This was not because governments did not have adequate financial resources to be self reliant, but this was a function of the investment process itself. Sometimes the project plans were done before negotiations took place; while in some, donors followed the same pattern of investment. Because planning and design were conducted mainly by donors, the process often limited government's role in setting priorities and defining strategies for health system development.

Furthermore, SCF found that investments were out of step with local needs and capacity. Investment goals and procedures were in conflict exceeding the capacity of the country to absorb it effectively. For example in Pakistan there was a tendency for both the donors and governments to prefer to fund capital or development investments to supporting the operational needs of the on-going health activities. Therefore a mismatch between investment and local capacity may create problems of sustainability (SAVE 1995). According to the SCF, a sustainable heath system must function *effectively* over time, being able to guarantee to all citizens access to heath services at levels of quality defined by international standards. "Thus any appraisal of sustainability must include indicators of effectiveness as well as continuity" (SCF 1995:30).

However, in a sustainability study carried out among 30 non-governmental organisations (NGOs) implementing USAID child survival and health grants, found that while NGOs shared key values about sustainability, they were skeptical about approaches perceived as disconnected from the field reality. In their experience, sustainable achievements occurred through the interaction of capable local stakeholders and communities. Sustainability needed to start with a consideration of the local systems which needed to develop a common purpose (Sarriot et al 2004).

# **3.2** Community organization and policy implementation

# 3.2.1. Centralised power and policy implementation

Earlier researches found out that over-centralization of power limited local level action (SCF 1995, Mills et al 2001). SCF found that despite the introduction of decentralization, the Ministries of Health in Uganda, Ghana, Nepal and Pakistan were based on an organizational model which concentrated power at the centre, allowing

central level bureaucrats considerable control over planning and resource management. Centralisation of power is reported to permit small amounts of resources (especially recurrent funds) to be controlled by district managers. In Uganda, SCF (1995) found that only 15 percent of primary health care resources were spent at district level being financed from the district budget.

These structural relationships were detrimental in four different ways:- forming fixed patterns of investment which persisted even when detrimental to improved health system capacity; giving little opportunity to district health systems to allocate resources in accordance with their health needs; and a possible mismatch between plans done by the centre and those done at the district levels because the centre officials undertook planning without reference to the operational level. In Vietnam where the local authorities had more discretionary control over spending and management at local levels, health systems were able to respond directly to health needs and adjust allocation patterns as needs changed (SCF 1995). Also seniority and position of individuals rather than their professional function, formed the basis of working relationships such that constant exchange of favours governed the management decisions over human resource deployment, transfers, promotions and accessing training opportunities abroad or inside the country. This affected the morale and performance of staff in the study countries.

# 3.2.2 Decentralization and policy implementation

In their critique of the decentralization of health systems using Kenya, Philippines and Indonesia as case studies, Liisa and Kolehmainen (1999) noted the high prevalence of incongruent plans from national health policies. Local decisions were found in many instances to differ very much from national goals "being influenced by local politics". Some local objectives developed by local staff were not consistent with national program goals. These findings are also supported by many other researchers who found that while decentralization has enabled local governments to take decisions which reflect their local choices and needs, many times these are contrary to national policy (Mills 2001, Saito 2003, Kolehmainen-Aiteken 1997, Okuonzi and Lubanga 1995). For example, while the

health policy emphasizes PHC, more resources continue to be allocated to curative services (Okuonzi and Lubanga 1995, Okello et al 1998).

Saito (2003), Mills and others (2001) observe that local authorities prefer to implement programs able to yield quick short term visible results. Preventive health care activities such as PHC which take a long time for their impact to become measurable are not favoured. In their study which was carried out in Ghana, Zimbabwe, India, and Sri Lanka, Mills and others (2001), found that local government authorities emphasized achievement of output targets which distorted health worker incentives and led to some perverse outcomes. Saito (ibid) reports that financial allocation by district authorities covering recurrent health cost s has actually declined both in absolute and relative terms after the decentralisation policy was put in place. Saito concludes that reduction of health expenditures signifies that the health sector is not a priority area for local governments.

A number of reasons have been expounded for mismatches ranging from decentralization related problems, poor policy formulations, involvement of stakeholders with different values and interests, capacity problems of local and central governments, financing problems, and the complexity of social and economic reforms (Liisa and Kolehmainen 1999). Some of the decentralization reasons leading to incongruence of policy and plans include: lack of knowledge of decentralization policy imperatives, inadequate knowledge and identification with sectoral policy, accountability issues, complexity of integrated planning, influence of politics, quality of health policy, clarity of policy goals and planning capacity.

Kolehmainen-Aiteken and Newbrander (1997) indicate that divergences of plans from national goals may have negative impacts on national equity and quality of services as inexperienced managers make inappropriate local decision making or duplication of functions. Other adverse effects include fragmentation of health services, inequity of the health sector compared with other sectors, development of poor public health policy because local desires are not in line with public health goals. It is argued that it is "deep democratic decentralization" that can bring about improved service delivery and accountability. This involves a dynamic interaction of a functioning state; an effective state capacity at the central and local levels; an empowered local authority to which functions, functionaries and finance have been devolved by the central authorities; and a "voice" on collective basis by civil society through institutions enabled by the state (Mehrotra 2006).

#### 3.2.3 Service delivery structures, approaches and policy implementation

A number of studies have been carried relating to organization of service delivery, and community involvement in health promotion. A study which was done in Uganda by WHO (Monte-Kaliisa and Osiga-Gamba 1997) to identify the strengths and weakness in the health organizational structures of six districts and 54 health units, found that management structures were available at 79%. The functions and responsibilities of the District Health Medical Team (DHMT), and District Health Teams (DHT) were, however, not clearly defined and collaboration between the different management structures was always not good. Community participation was scored at 30% and input availability at about 55%. The low levels of inputs (in amounts and mix) make it difficult to achieve adequate levels of outputs as this is derived from the inputs and processes used in the system (Mbonye, 2001, Kager 2002, Nordberg, 1995).

In the Ugandan study by Kaliisa and Osiga-Gamba (1997), there was limited coordination between the district and sub-counties over malaria control; and the malaria control projects at the grassroots were not multi-disciplinary. The sub-counties did not know the role to play in a vertically implemented malaria control program. The development programs of the various district departments sometimes conflicted with those of health in relation to malaria control. For example, the agricultural officer encouraged farmers to plant greens like dodo and maize around the homesteads. And yet health workers told the same people that these bred mosquitoes. The district health personnel expressed lack of knowledge about malaria control policy. There was an absence of an appropriate epidemiological information system to monitor malaria related morbidity and mortality, the vector, the eco-system, the human populations and their changes for purposes of planning. Hoima District did not have a malaria control program.

The other inputs specifically those related to community participation and health resources were weakest in the Uganda study.

Golooba-Mutebi (2004) throws explains that people do not value participation in public affairs. Local people did not regularly consult their elected leaders and had lost interest in attending public meetings. People had got fatigued and developed apathy in participative politics and hand gone back to being concerned with the mundane issues of their daily lives than with participation in public affairs and playing a watchdog over their leaders. Popular participation is arguably based on wrong assumptions such as thinking that people desire to and are capable of actively taking part in public affairs. Golooba actually concludes that the top-down decision-making process may be more in line with people's world view than the populist participatory approaches.

Contrary to the Ugandan studies relating to community participation, a review of 116 studies by Oliveira-Cruz et al (2003) found that among things which seem to work was community participation. This worked through active involvement of leaders and members, including community health worker programmes. These were found to be an effective tool for improving performance. Effective community participation appeared to arise from the combination of "push" by the community, and "pull" from the existence of space or opportunity for them to participate, opened by IEC or other mechanisms.

Likewise, an approach of using volunteers in a Northern Ghana longitudinal study, which was aimed at determining the impact of deploying nurses and volunteers to village locations on demographic and health outcomes, demonstrated that posting nurses to communities can dramatically accelerate the pace of progress in achieving the childhood survival MDGs. However, community volunteer approaches did not have additional impact, a finding that challenges the value of international investment in volunteer-based health programs (Binka et al 2007).

Studies have also been done on integration in the health sector. In their study, Unger and others (2003) indicate that in the majority of cases, integration is essential in both the

public and private sectors; and in the case of operational as well as administrative aspects. Studies indicate that an integrated approach to malaria implementation is possible and can lead to reduced morbidity and mortality in children (Rojas et al 2001, Utzinger et al 2002). Integration has involved undertaking all the main control strategies including provision of education, community participation, prompt diagnosis, complete treatment and vector control. An intervention study carried out in 23 communities on the Pacific Coast of Colombia greatly reduced the incidence of malaria morbidity and mortality and its social economic costs. Likewise, an integrated program which was carried out in 4 mining communities of Northern Rhodesia (Zambia) during the British colonial period and sustained for 2 decades proved to be very successful (Utzinger et al 2002).

# 3.2.4 Health care system resources and management

One of the constraints found to influence malaria control in Sub–Saharan Africa and Uganda in particular is the weak management systems (Kager 2002, Bryce et al 2003). Weak health systems are reported to be characterised by inadequate resources (human, financial,) and processes (planning, budgeting, and information systems) (Kager 2002, WHO 2001, Mills et al 2001, Mbonye 2001, Wekwete and Helmsing 1990, Walt 1994, Kasumba 1997). In their study of four developing countries of Ghana, Zimbabwe, India and Sri Lanka, Mills and others found that the budgeting systems were largely historical with only limited efforts to rationalize and prioritize resource allocations. Budgeting systems did not rationalize and prioritize resource allocation. Planning failed to address complex problems and excluded the private sector (Mills et al 2001). Kasumba (1997) concurs with this finding. When he was analyzing the budgeting and planning process in Rakai District, Kasumba (1997) found that out of the 1.593 billion shillings transferred from central government to Rakai District in the financial year 1994/95, 68% was earmarked (conditional) thus limiting the choices of actions the district could undertake to solve local problems.

Helmsing and Wekwete (1990) and Walt (1994) note the difficulties created by inadequate financial resources. Financial resource availability influences the nature of

planning and implementation activity. For example, Mugaju notes that because of resource constraints, the government of Uganda could not remunerate the medical professionals well leading to poor work morale. Nordberg (1995) indicates that in a situation of financial resource constraints the district health managers cut back selectively on programs, expanding programs oriented to groups who are able to pay, such as the relatively affluent urban minority while preventive rural schemes suffer. Resource limitations combined with highly centralised decision making restrict planning to annual incremental budgetary adjustments in accordance with central directives (Nordberg 1995).

In a study carried out in Chad (Wyss et al 2003)., it was found that the shortage of qualified people constitutes the most important bottleneck limiting the return on investment in the health sector. In Chad, about two-thirds of health workers had no qualifications, and a great number of primary health care services were managed by non-qualified staff. There is also unequal distribution of health workers; and efforts to redistribute them have failed mainly because of weak implementation of policies and the unattractive working conditions in rural areas The health workers were reported to be demotivated because of lack of: incentives, irregular remuneration for community health resource persons (Monte-Kaliisa and Osiga-Gamba 1997).

The consequences of the weak health system has been the tendency of the patients to seek health care from alternative sources of care mostly from the private health sector or informal sources some of which may provide ineffective care (Krager, 2002, Mills et al 2001, Lubanga et al 2004, Amin et al 2003). Poor service delivery systems are also associated with limited scaling up of the interventions (which are known to be effective), inequities in service distribution and failure to reach the poorest of the poor (Bryce et al 2003, Onwujekwe et al 2005, Mathanga and Bowie 2007). Child survival interventions are not reaching the children who need them most (Bryce et al 2003). However, Hopkins and others (2007), indicate that even where services have been scaled up like the homebased management of malaria (HMM), it did not yield the expected health benefits of

reducing mortality in three of the four studies they analysed. One of the reasons given was that the policy was not tailored to local conditions.

# 3.2.5 Social-cultural capital and policy implementation

A number of studies have been carried out (mostly in the developed countries) to test the usefulness of social capital as a conceptual tool for the design and evaluation of policy and community system strengthening, and/or to establish its relationship with health outcomes. Most of the studies found a relationship between social capital and health outcomes. One Ethiopian study concludes that combined efforts to improve women's involvement in household decision making, social capital and immunization may decrease the high child mortality in a setting where poverty levels are high (Fantahun et al 2006). Similarly, in a study to test the hypothesis whether variation in reported access to health care is positively related to the level of social capital present in 22 metropolitan statistical areas of the USA, found that persons living in communities featuring high levels of social capital enables better access to care. Similarly, in a health survey done in England on social capital demonstrated that low stocks of social capital across domains of trust and reciprocity, perceived social support and civic participation are significantly associated with poor measures of health status (Petrou and Kupek 2007).

However, in a study carried out in four countries of USA, Australia, Sweden and Norway found that the presence of socially oriented norms or behaviours did not reduce the likelihood of lower income groups reporting poor self rated health, relative to the highest income groups (Smith and Polanyi 2003). Similarly in another study carried out in Florida to examine the relationship between social capital and preventable hospitalization (PH), found that few of the social capital measures were independently associated with preventable hospitalization. Some bonding and bridging ties were related to PH but differentially across age groups. This particular study actually concludes that the importance of social capital for health care access is unclear and more work is needed to operationalise linking ties (Derose 2008)

Derose (ibid) is supported by a number of studies which have been concerned with the conceptualization of social capital, and the consistency of variables used in the health social capital studies. One study carried out in one town in England by Campbell and Gillies (2001) shows that the current conceptualization and emphasis stressing the norm, trust, neighbourliness, reciprocal help, support and networks does not provide adequate attention to the role played by the informal networks of friends and neighbours in the construction of local community life. And also current construction do not pay attention to the geographic spread of people's significant social networks and the way people of different ages, gender, ethnicity and housing tenure sustain and access social capital. Likewise, Carlson and Chamberlain (2003) who synthesized empirical evidence that links social capital to population health, with the aim of identifying implications for health disparities research found that the concept of social capital lacks conceptual development. There is lack of distinction regarding whether the concept is an attribute of a geographic space or an individual attribute. The operational variables are problematic just as there is limited theoretical exploration of causal linkages.

#### 3.2.6 Empowerment and policy implementation

In a study which investigated the relationship between a direct measure of empowerment, (feeling that one is in control of one's own health) and patient satisfaction with communication revealed that satisfaction with overall communication, use of understandable words by health workers, and involvement in decisions were positively associated with empowerment. However, self-rated health was more strongly related to empowerment than satisfaction with communication (Rohrer et al 2008). In another study carried out among consumers of mental health services and occupational therapists in Australia, it was found that while empowerment was universally considered desirable, opinions about the transfer of power were more ambivalent. It is argued that consumers and health workers need to work together to find creative ways of addressing concerns relating to power so that real power can be shared to benefit all consumers (Honey 1999).

#### **3.3** Child morbidity and mortality experiences: a problem construction

3.3.1 Experiences of child morbidity, mortality, and risk factors

Earlier research investigating why developing countries still suffer loss of many children to preventable and controllable diseases like malaria provide a diversity of factors. In the literature, causes of deaths in developing countries is discussed in a dichotomous manner; addressing either the individual clinical epidemiological causes, or distal social economic cultural environmental factors (Bates et al 2004, Black et al 2003, Sewanyana and Younger 2005). Depending on whether one discusses child deaths from an epidemiological perspective or social science one, the review enlists quite different risk factors for population health. Some of the individual level biological risk factors that make some people more vulnerable to malaria than others have been discussed in Chapter 1. These include genetics, age, pregnancy, HIV/AIDS, and nutritional status of the child; malaria transmission intensity, and parasite load.

Using three rounds of the Uganda Demographic and Health Surveys to construct a national time series for infant mortality rate over a period from 1974 to 1999, Sewanyana and Younger (2005) found the following to be general determinants of infant mortality:-child's personal characteristics, (birth order and multiple births), mother's characteristics (education and age at first birth); availability of health services, and the vaccination status of children. The higher the education of the mother the less likely for the child to die prematurely before it reached five years. Education of the mother and access to health services have also been confirmed by others to influence child survival (Bryce et al 2003, MoFPED 2003, UDHS 2006).

Household income did not have a great impact on infant deaths. Doubling the incomes of households was estimated to reduce the IMR by between 20-24 deaths per 1000 births. This finding is consistent with a meta analysis done by Worral and others (2005) and by Wilkinson (1994). Wilkinson argued that mortality rates were no longer related to per capita economic growth, but to the scale of income inequality in each society. As societies reached a certain threshold, health status became determined more by social (dis)advantage than by material scarcity. The distribution of income among members of a society matters as much for their health and well-being as does their absolute standard

of living (Kawachi et al 1999). Wilkinson does not indicate the threshold. Worral and others (2005) found mixed evidence on the relationship between malaria incidence and poverty.

Studies which did not find a significant relationship between the household poverty and malaria incidence explained the finding in terms of the concentration of poverty at the community level. This homogeneity of the populations in income levels reduces the level of variations in poverty and obscures relationships. Also the variety of poverty measures and study settings, obscured the relationships between malaria and household incomes. Some studies used consumption indices, while others used wealth or asset indices and some used social economic status (SES) such as education, occupation, rural/urban variables. Some studied morbidity and mortality from clinical settings while others were community based and therefore not comparable as clinic settings tend to be composed of persons of relatively higher social economic status.

Nonetheless, Worral and others (2005), indicate a strong evidence that uptake of preventive and treatment interventions is closely related to proxies for socio-economic status. It is indicated that poor people are less likely to seek prompt treatment for malaria, to comply fully with treatment regimen; and to prevent malaria. It is also noted that effective use of bed-nets is affected by the housing type and sleeping patterns or arrangements. Nomadic people who have shift houses and no where to fix a bed are less likely to use this preventive technology (Worral et al 2005).

The most recent UDHS (2006) found that rural areas experienced more infant and child deaths than urban areas. Also children living in the internally displaced protected (IDP) camps in the North of Uganda, experienced higher infant and child mortality rates than the rest of the Northern region. The following sections give further explanations of these divergent determinants. The explanations range from individual and household perceptions and practices, to institutional service delivery and technological factors.

# 3.3.2 Perceptions and knowledge of malaria by households

In most knowledge, attitude and practice (KAP) studies on malaria carried out in Uganda and in other Sub Saharan countries it was found that most people had high knowledge of the existence of malaria and people knew the English term "malaria". They could mention all the signs and symptoms associated with malaria most notably fever or a hot body (AED, 2001, Nsungwa et al 2004, Okello–Ogojo, 2001). Other symptoms mentioned in a KAP study carried out in 5 districts of Uganda by Okello-Ogojo were: feeling cold/chills, headaches, body aches, joint pains, weakness, loss of appetite, dizziness, nauasea, or vomiting, sore/dry/ pale lips, weight loss, sleepiness, change in skin colour, dehyradration.

Generally people were reported to easily identify fevers in young children (Lubanga et al 1997, Nsungwa et al 2004). Being a common symptom of other conditions, people classify fevers in accordance with the cultural definitions of illness and perceived causes (McCombie, 1996). Some of the common terms used by some ethnic groups in Uganda are "omusujja" (fever), "omusujja gwensiri" (fever caused by mosquitoes) or "omuyaha" (Kivumbi 2003), "omutsutsa" (Nsungwa et al 2004). Some caretakers were confused and unable to differentiate fever due to malaria from other illnesses because of the tendency for malaria to present with similar symptoms as those of other diseases like acute respiratory infection (ARI).

In the study carried out in Kasese by Nsungwa and others (2004) it was found that mothers of ill children had six classifications of fever and only one – "omutsutsa" (fever of the mosquito) was associated with mosquito bites despite that the symptoms of the other five were also indicative of biomedical malaria. They determined the type of fever by considering: the season, type and combination of symptoms, progression of symptoms, success or failure of initial treatment and degree of hot body. Nsungwa and others (2004) note that such perceptions are likely to contribute to only 2.3% of the febrile children receiving prompt treatment. Homapaks are likely to be used for only those fevers perceived to be caused by mosquitoes (and disregard non-mosquito fevers) where treatment is perceived appropriate, implying continued delay and under- treatment of potential malaria. Adongo and others (2005) equally observe that attributing the cause

of malaria to several diverse factors beside the mosquito might make it difficult to convince mothers to accept to use ITNs as control measures for malaria or convulsions. Nsungwa and others (ibid) suggest that home based management of fever strategies need to address local perceptions of febrile illness and adapt information and training material accordingly. Formative research in different cultural and geographic settings is required to address local terminology, classifications and treatment practices of fever (Nsungwa et al 2004).

While people recognize fevers easily, they have limited biomedical knowledge of the malaria disease, its etiology, the role of the vector, and host response. In a study carried out in 5 districts of Uganda by the Academy for Educational Development (AED), just 21% of the respondents solely associated malaria to mosquito bites. Others associated malaria with other things like drinking un-boiled water, drinking water with mosquito eggs or larva, being in rain, eating cold or dirty food, dirty surroundings, standing in water, being beaten by other insects/pests, flies, eating unripe fruit, intense exposure to the sun, frequent bathing, consumption of certain foods such as maize, mangoes, raw beans, and existence of draught, swamps etc. (AED 2001, Okello–Ogojo 2001, Nuwaha 2002, Monte-Kaliisa and Osiga-Gamba 1997) Studies done in Kenya and Malawi showed an association between the limited knowledge of the role of mosquitoes in malaria transmission and low bed-net ownership and use, as well as insufficient efforts to eliminate breeding sites of mosquitoes (Helitzer-Allen et al 1993, Ziba et al 1994, Marsh et al 1996).

Knowledge of severe malaria is generally limited. Convulsions and aneamia are rarely linked to malaria (AED 2001, Kivumbi 2004, Adongo et al 2005, Nuwaha 2002). In a study carried out in Mbarara, in Western Uganda, there were a lot of misclassifications perceiving convulsions, and splenomegaly common complications of severe malaria as a supernatural ailment best treated by traditional medicine (Nuwaha 2002). In another study on severe malaria in children in Busia convulsions and difficulties in breathing were perceived by mothers as danger signals but only 14% of the children were taken to health units on day one while 82% of the children were taken to health units on day 3 of

illness onset (Kivumbi 2004). Of the children with convulsions, only 55% were suspected to have malaria while 12% were suspected to have been bewitched or to have other biomedical conditions like measles, yet 4% did not know the cause of convulsions (Kivumbi ibid). Main causes of delay to take child to health units in that study were: absence of social support to take the child to health units or undertake domestic responsibilities the mother normally undertakes, polygamy which makes men to be absent when the child is sick in one of the homes, lack of money, lack of drugs in the home and inability to recognize the illness early (Kivumbi 2003).

#### 3.4 Malaria control policy-making processes: practices and threats

Goodman and Mills (1999) who reviewed 14 cost effectiveness studies conducted in Africa (on insecticide treated nets, chemoprophylaxis for children, potential malaria vaccines, chemoprophylaxis in pregnancy, and malaria treatment), urge that it is difficult to establish the most cost effective intervention. Other than for ITN studies which had made analyses providing a good basis for allocative efficiency, most studies on other interventions had not provided the costs and also health impacts. The studies did not also provide estimates of the cost effectiveness of alternative interventions. It was also observed that even in the situation of ITNs with reasonably good empirical evidence on costs and impacts, the ITN studies did not provide the costs of alternative delivery strategies such as use of social marketing and individual re-treatment kits. It is concluded that the current potential of economic evaluations to inform policy debates is limited. It is limited by the gross lack of information on the costs and effects of many interventions, the very small number of cost effective analyses available, the lack of evidence on the costs and effects of packages of measures, and the problems in generalizing or comparing studies that relate to specific settings and use different methodologies and outcome measures.

#### **3.5 Malaria control policy implementation**

# 3.5.1 Malaria treatment: Practices and threats

Studies recently done in Zanzibar showed that between 2002 and 2005 crude under-five, infant, and child mortality decreased by 52%, 33% and 71% following deployment of ACT in 2003. Similarly, malaria-related admissions, blood transfusions and malaria attributed mortality decreased significantly by 77%, 67% and 75% respectively between 2002 and 2005 (Bhattarai et al 2007). However, Bloland and others (2000) refute this saying that the use of drugs in combination does not necessarily prevent the development of resistance. Major reasons given are the continued reliance of the sub-Saharan countries on clinical diagnosis and algorithmic diagnosis (IMCI) both of which tend to over-diagnose fever as malaria. Over diagnosis of "malaria" and the corresponding overuse of antimalarials can contribute to excessive drug pressure (Bloland et al 2000).

Although Lubanga and others (1997) found that health workers' clinical assessment was highly sensitive to malaria in endemic areas, Talisuna and others (2001) indicate that presumptive treatment is a problem because it bases diagnosis on a subjective criterion. Kager (2002) indicates that the regular treatment of malaria attacks in Senegal delayed the build up of immunity leading to symptomatic malaria in children of primary school age, whereas malarial attacks used to be limited to children under 5 years of age. Likewise Donelly and others (2005) argue that misdiagnosis of fevers as malaria in low endemic locations such as the urban areas may result in more ill health due to delayed diagnosis and repeat visits, over burden the health services, increase malaria resistance, and increase costs to the patient and health facilities. It is argued that with the introduction of more expensive antimalarial drug combinations, there is need to improve policies relating to presumptive treatment (Donnely et al 2005).

Presumptive treatment practices have been due to inadequate equipment and human resources. In a GTZ study done in Kabalore and Bundibugyo districts, it was found out that only 15% of the health units had a microscope. Half of these were not functional due to lack of qualified personnel or supplies reducing the percentage of health units with the

possibility of microscopic diagnosis to 7% (Kilian 1995). Countries like South Africa which use ACTs in the treatment of malaria argue that the treatment of malaria should be preceded by a definitive diagnosis using a microscopy or rapid diagnostic tests (RDTs). Laboratory based diagnosis is claimed to reduce on the use of antimalaria drugs and therefore on drug pressure which leads to resistance (Jonkman et al 1995). Although South Africa adopted RDTs since 2001, use of RDTs is faced with the problems of storage, quality assurance, and end user training and use (Moonasar et al 2007).

Other threats which are likely to reduce the benefits of combination therapy are: (a) poor practices of drug use and especially incomplete adherence to the full recommended dosing regimen; (b) the high prevalence of self treatment; (c) the role of the private sector in malaria treatment; and (d) the cost of the drug (Bloland et al 2000). Patient adherence is a major determinant of the therapeutic response to antimalarial drugs and with the introduction of new, effective, but more expensive antimalarials, there is concern that the high levels of efficacy observed in clinical trials may not be translated into effectiveness in the normal context of use. A review of 24 international studies done by Yeung and White (2005) indicated that adherence varied with the drug type, treatment regimen and perceived effectiveness. The more effective the antimalarial, the more likely it is for users to adhere to the treatment regimen. Studies done in Uganda concur with these global findings. For example, Kilian (1995) indicates that only 35% of the patients who visited the health units in the Ugandan districts of Kabalore and Bundibugyo had taken a correct dosage of chloroquine; about 48% of the 0-4 year olds were over dosed; and between 7.1% and 17.6% of the mothers of sick children knew the correct dosage for a sick child.

Although it is generally assumed that adherence to antimalarial regimens is inversely proportional to the duration of treatment and the frequency of dosing, and that a 7 day regimen with quinine is generally poorly tolerated, there is few data to support this. Reilley and others (2002) found that the main reasons for not taking the entire regimen were side effects and disappearance of the symptoms. Non-adherence to treatment was found in an Ecuador study to affect the outcomes as the cure rate for those who adhered

was 90% compared to 69% of those who did not adhere to the use of chloroquine and primaquine (Yeung and White ibid). Yeung and White (2005) and also Conteh and others (2007) found that adherence was improved by interventions focusing on provider knowledge and behaviour, packaging, provision of correct dosages, giving instruction on the correct use of drugs and training of drug vendors. Yeung and White (ibid) further indicate that when patients were given free drugs at the correct dose by a trained health provider, levels of adherence were much higher especially if careful verbal instructions had been given. These authors conclude that the problem of patients not taking drugs as recommended may be more a result of the patient not having access to affordable treatments and not receiving the correct instructions rather than patient non-adherence per se. Supervision of treatments was also reported to have some effect on improving adherence. The problem observed with these findings however, is that they were based on drugs considered to be least effective and cannot be extrapolated to new effective ACTs (Yeung and White 2005).

Many studies show that "malaria" in under five children is first treated at home using antimalarials and antipyretics bought from shops or left over from previous illness episodes. This is true for rural and urban families (McCombie 2002, Langi and Lalobo, 1994, Kilian 1995, Hutchison 1996, Monte-Kaliisa and Osiga Gamba 1997, Snow et al 1992, Marsh et al 1999, Lubanga et al 1997). In the Ugandan studies, between 30% and 71% of the households treated their children at home. According to the most recent Uganda Demographic Health Survey (2006), 61% of the under fives who had "malaria", received antimalarial drugs. A similar pattern of self- treatment practices is also observed in Kenya (Amin et al 2003, Hamel et al 2001). Self treatment is higher in urban areas than rural area (although increasing in the latter). Children who are first treated at home obtain prompt treatment more than children who are taken to health units (Lubanga et al 1997, Hamel et al 2001, Amin et al 2003, Deming et al 1989). Self-treatment is also claimed to save time and to lower the cost of treating an illness (McCombie 2002). Major problems with home treatment are giving wrong drugs, amounts of drugs, stopping medication when symptoms resolve, as well as treating fevers without knowing the type

of fever one is treating (Hamel et al 2001, Monte-Kaliisa and Osiga Gamba ibid, McCombie 2002, Reilley and others 2002).

Parents of sick children are reported to seek treatment from outside the home when the child fails to recover (Nsungwa et al 2004, Amin et al 2005). In her review of self-treatment practices for malaria in Africa, McCombie (2002) indicates that young children are more likely to be taken to health facilities for treatment of "malaria" than older children. Higher educational levels of child caretakers are associated more with prompt seeking of health care from a health care provider. Treatment options are not linear varying according to how the symptoms are perceived and classified, and how illness evolves (Nsungwa et al 2004). However, in their Kenya study Amin and others (2005), found that treatment seeking for fevers of under-five children followed a hierarchical process whereby caretakers first sought cheaper alternatives before progressing to the formal sector in the course of the illness (Amin et al ibid).

Among the households which seek care from outside the home for fever treatment of children in Uganda and SSA do so from private for-profit or NGO health care units (Nsungwa 2001, Amin et al 2005). The private-for-profit sector include: persons operating alone or in groups, in formal and informal settings with different levels of training which may derive from allopathic (medical practitioners, pharmacists, nurses), or non allopathic systems of medicine (e.g. homeopathic and ayervedic trained practitioners). This health sub sector also includes indigenous or traditional practitioners and other vendors with little or no training. All of these people have access to antimalarials in malaria endemic areas (Brugha et al 1999, Asiimwe 2004).

In sub-Saharan Africa, the proportion of patients seeking malaria treatment outside the official health sector ranges from 12% to 82% (McCombie, 1996). The afore-mentioned Ugandan studies indicate that between 24% and 47% of the households in Uganda are reported to have sought care from private clinics when their under-five child got fever. Another proportion estimated at between 18% and 41% of sick children sought care from government-owned units in Uganda.

Many studies done on the private-for-profit heath care systems indicate that caretakers of sick children prefer the private sector for a number of reasons including for example, a greater variety and availability of private providers in many settings and therefore proximity to clients, less travel time and costs; the availability of pharmaceuticals; client's ability to choose a provider; promptness of service and less waiting time; acceptable staff attitudes and behaviour (Lubanga et al 2004, Brugha et al 1999, Mills et al 2001). Many of these factors reflected deficiencies in government health units, notably, a lack of drugs, poor staff attitudes, long waiting lines, and lack of transparency in payments, staffing shortages and inappropriate staff mix, poorly maintained machinery and buildings (Lubanga et al 2004, Mills et al 2001). A recent study done in Uganda on ACT stocking patterns in public units confirmed that some types of Coartem were out of stock at one time or the other with brown<sup>15</sup> most frequently out of stock and yellow<sup>16</sup> least often out of stock. Health centres were more often like to be out of stock than hospitals (Uganda National Drug Authority and RPM 2007).

The dominant role of the private sector in providing malaria therapy in Africa poses three challenges to the effectiveness of combination therapy: poor prescription practices, the continued provision of almost all the possible drugs as monotherapy, and the sale of drugs of poor quality (Bloland et al 2000). Nsungwa (2001) found that the private practitioners' case management practices deviated greatly from the standard clinical guidelines of Integrated Management of Childhood Illnesses (IMCI). For example, most simple cases of "malaria" were treated with injection chloroquine or injection quinine as first line treatment. It is also indicated that the commercial sector has the potential for inappropriate and inadequate treatment whether due to patient or provider behaviour (Brugha et al 1999). An example, is the selling of prescription-only-antimalarials as over-the-counter drugs. Tavrow and others (2003) found that 81% of the drug vendors in Bungoma district, Kenya, stocked mostly the second-line antimalarial Amodiaquine (AQ)

<sup>&</sup>lt;sup>15</sup> Brown coartem is for body weight 25-34 kg corresponding to age 7-12 years.

<sup>&</sup>lt;sup>16</sup> Yellow coartem is for body weight 5-14 kg corresponding to age 4 months to 3 years.

Other colours are blue and green coartem. Blue is for weight 15-24 kg (age 3 years -7 years); Green is for weight >35 kg (12 years and above)

while 31% stocked SP the recommended first-line drug for uncomplicated malaria (Tavrow et al 2003).

Mills and others (2001) found that private clinics in Sri Lanka, had limited facilities, lacked good referral links with other facilities, put excessive emphasis upon (income generating) diagnostic tests, and were expensive. Private clinics clients were dissatisfied with some process and treatment outcomes especially the provider-patient communication, tendencies to cling to patients even in situations where a condition exceeded the competence of the attending health provider, not giving medical records to patients, and poor referral management between clinics and government units (Lubanga et al 2004). Poor treatment outcomes were mostly attributed to the existence of quackery, unqualified and under-qualified people who attend to patients; and high treatment costs in the clinics.

These problems are attributed to poor enforcement of the existing laws regarding the medical licensing of private clinics, limited supervision by public authorities and medical professions, an absence of clear policies, marginalization, and poor integration of the private for profit sector in overall plans for health service delivery (Okello et al 2004, Lubanga et al 2004, Asiimwe 2004). An example of limited integration is given by Nsungwa (2001) where she observes that IMCI trainings involved mostly government health unit workers leaving out the private clinics. Also many private clinics and drug shops were not registered with government and therefore not known. In practice, the facilities do not confine themselves to the provision of the services they have been registered to offer; with, for example, drug shops authorized to sell class C drugs<sup>17</sup> also offering out patient services, and maternity services (Asiimwe 2004).

Malaria treatment is also threatened by poor quality of antimalarials on the open market. Talisuna et al (2001) report that the strength of samples of quinine syrup and chloroquine tablets were of a lesser strength than the standard the two studies they came across. For

<sup>&</sup>lt;sup>17</sup> Class C drugs are off the counter drugs; prescribed and administered strictly by trained medical personnel.

example, in a sample of 12 quinine mixtures /syrups representing nine local manufacturing companies, which were studied by the National Drug Authority in 1997, none of the 9 companies produced quinine syrups of the right strength (i.e. 100 mg quinine base/5mls). The highest strengths were 85mg of quinine base per 5mls while the lowest was 7.2 mg of quinine base per 5 mls. Also in another study by Odyek et al (quoted by Talisuna et al ibid), found that only 45% of the tablet samples of chloroquine and 38% of the injectables contained the normal amount of the active medicinal ingredient. A survey of antimalarials and other drugs on sale in Nigeria, found that 36% of samples were sub-standard and that most of these came from unofficial outlets. While some contained no active ingredient, most had an active ingredient in an inadequate amount (Sharkoor et al 1997). Bloland and others (2000) indicate that drugs of poor quality including artemisinins contribute to drug pressure while failing to provide successful malaria treatment.

Malaria treatment is also threatened by inadequate mechanisms for monitoring drug resistance. Williams and others (2004) who reviewed the process of changing national malaria treatment policies in 5 countries of Malawi, Tanzania, South Africa, Kenya and Peru observed a loop hole in the process with a tendency to rely just on the traditional efficacy studies to change malaria drug policy. They identify 8 activities that must be taken to change a policy namely: 1) identifying a trigger that treatment policy change may be necessary; 2) verification of the trigger by drug efficacy studies; 3)presenting data to policy makers and implementers; 4) advocating for change and fostering consensus building; 5) identifying and assessing policy options; 6)agreeing on the replacement drugs, the time line for change and develop policy documents, 7) implement, 8) monitor, evaluate and plan for the next policy cycle.

Peru has attempted to involve all health units in monitoring drug resistance although not working very well either (Trenton et al 2003). Peru has a policy of supervising the treatment of every patient whose blood smear is positive with malaria. The patient is supposed to visit a health unit every 7<sup>th</sup> and 14<sup>th</sup> day and get other smears taken at that unit. A certain proportion of the smears are sent to regional and national laboratories.

The Peru drug monitoring system has problems because patients turn up after day 7 and 14. Also health workers differentially interprete successful and failing treatment (Trenton et al 2003

#### 3.6 Malaria prevention: Practices and threats

This section reviews earlier research on insecticide bed net use and threats, indoor spraying and health education.

## 3.6.1 Insecticide treated nets (ITNs)

The ITN policy choice is dependent on a number of studies were carried out since the late 20th Century in Ghana, The Gambia, Kenya, Cameroon and Tanzania which proved that permethrin impregnated bednets reduced malaria specific morbidity and mortality in the under-five children by between 22% and 63% (Alonso et al 1991, Binka et al 1996, D'Alessandro et al 1995, Nevill et al 1996).

According to Schapira (2007), the insecticidal treatment of nets adds a chemical barrier to the physical barrier provided by the net and thus improves its effectiveness in personal protection. The insecticide kills and repels mosquitoes and other insects as well as affording some protection for others sleeping in the same room. Nets that are treated with an insecticide are much more effective against mosquito bites than untreated nets. In addition, community-wide use of ITNs reduces the vector population and shortens the mean mosquito life span. Thus ITNs at high coverage levels are a measure of general applicability Effectiveness of bed nets is higher where there is a history of bednet use.

Cost studies done elsewhere in the malaria endemic areas of the world have indicated that insecticide bed nets are much cheaper than other methods of malaria prevention (Hutchison 1996, Nijhof 2001). For example, Hutchison (1996) reported a study done in Malaysia which showed that the cost of DDT spraying was \$1.86 compared with \$0.72 for impregnated bednets. The cost effectiveness studies done by the Swiss Tropical Institute likewise indicate that ITNs are more cost effective than IRS (UNAS 2007).

Four major strategies have been tried and advocated for scaling up ITN coverage and use in malaria endemic countries. Most of the literature on this rotate around funding and distribution of the nets to increase coverage. The first is to remove tariffs and taxes on insecticide-treated bednets (ITNs), netting materials and insecticides with a view to reduce the retail prices of ITNs and thus increase utilization. However, Simon and others (2002) who studied the impacts of tax reductions on ITN demand indicated that the percentage increase in demand is likely to be comparatively smaller than the percentage of tariffs and taxes removed. This loss in revenue to government may, however, be offset directly by a reduction in the cost of malaria case management at public health facilities resulting from ITN use, and indirectly by the higher tax revenues paid by healthier citizens.

The second strategy is to consider ITN as a public good like vaccines and to provide them through the public sector free of charge. This approach has been criticized as being not sustainable (Nathan et al 2004). However, a study carried out in Zambia integrating ITNs into a measles vaccination campaign achieved high rapid and equitable coverage with direct and voucher-based methods. In the rural areas, ITN coverage among children rose from 16.7% to 81.1% and the equity ratio from 0.32 to 0.88 and in the urban area from 50.7% to 76.2% (equity ratio: 0.66-1.19) (Grabowsky et al 2005).

The third is to strengthen commercial markets while acknowledging the importance of subsidies for groups most at risk such as pregnant women and young children. Commercial advocates point out the important role of the market and need to strengthen it and sustain the program. This is criticized in that it may create inequities between the poor and least poor in the ownership of nets. However, in their study to determine whether social marketing<sup>18</sup> redressed inequalities in access, Nathan and others (2004) found that social marketing in the presence of an active private sector for nets was associated with increased equity. The fourth strategy is to use employers to distribute nets

<sup>&</sup>lt;sup>18</sup> Social marketing is where commercial marketing methods are applied for a health gain and without a profit motive and generally involves selling products at subsidized prices. Good social marketing also uses intense and well informed promotion and often improves access through a subsidized network (Nathan et al 2004)

to workers and their families (Müller and Jahn 2003, Simon et al 2002, Ngugi et al 2004). Each strategy has its own advantages and limitations.

In their report of the WHO RBM "Workshop on mapping models for delivering ITNs through targeted subsidies" held in Zambia in 2003, Worrall and others (2005) indicate that the eleven countries which participated had 19 models for targeting subsidies. This implies that some countries tried out more than one model of ITN distribution. The distribution models were a full direct subsidy (FDS) where a net was given free of charge to a target population, a partial direct subsidy (PDS), an indirect voucher subsidy (IVS), and a combination of FDS on re-treatment and PDS on nets. There were not yet any lessons for countries on best practices because most countries were at different stages of implementation, and scaling up and the tendency for models to change over time as the systems developed. Worrall and others report that the most common basis of targeting were biological vulnerability and economic vulnerability. Countries which targeted economic vulnerability did not use income or wealth but a more observable criterion that signals poverty such as living in rural or remote locations (Worrall et al 2005). Whatever the approach there is agreement for major donor assistance and that the two approaches should be used to reach the population but targeting free nets mostly to pregnant women and under fives children (Müller and Jahn 2003).

Coverage information and use of ITN was more completely obtained on Uganda. The UDHS (2006) indicates that 34% of the households owned a mosquito net; with 16% owning an insecticide-treated-net (ITN). Only 22% of the under-fives slept under a mosquito net on the night before the interview. One of the limitations on net use is the tendency for some adults to remove nets from children under five years. The likelihood of an under-five child sleeping under a bednet was higher when the household had more than one net (Kampala City Council 2002, Korenromp et al 2003). Coverage was lowest in the poor rural areas (29%) coverage compared to 61% in urban areas. This is consistent with what is happening in other countries of SSA.

A study carried out in six localities in Gezira and Khartoum States, Sudan to determine utilization of indoor residual spraying, larviciding with chemicals, fogging (space spraying), ITN, and environmental management, found that the poorest households spent the least amounts of money to prevent malaria and were the least likely to own mosquito nets (Onwujekwe et 2005). This was despite that some services were offered free of charge or were highly subsidized. Similarly in a study carried out in Malawi to determine whether the poor were being reached with malaria control measures found disproportionately poor use of ITNs, and effective treatment amongst the poorest of the poor.

In a Kampala baseline study (Kampala City Council 2002), it was found that the ownership of any net in the household was significantly associated with the educational status of having had any secondary education. However, educational levels did not affect re-treatment practices. In a Dar-es-Salaam study, perceived malaria risk, household income and other household variables like ethnicity, age, gender, were the most important determinants of mosquito net ownership and use. Other reasons for owning nets were: privacy, protection against cold, flies and falling debris (Okra et al 2002). Another common finding was that most people who used nets used them to protect themselves against mosquito nuisances and not against malaria transmission implying a low linkage between net use and malaria prevention (Miller et al 1999). Although ownership and use of nets appear to be still low in Uganda, it is reported to be increasing. Use of long lasting nets (LLIN) are reported to have increased from 28% in 2002 to 59% in 2004 (Kilian and Byamukama 2004).

Major reasons given for limited use of ITNs is limited knowledge, cost of nets, not knowing where to buy the nets, and dislike of nets. Among the reasons for disliking the nets were: "nets are too hot", "the net does not allow in enough air", "difficulty to get out of a net at night" (Adongo et al 2005, AED 2001). The main sources of nets in the Ugandan studies were: shops, markets, hawkers, and health centers (Kampala City Council 2002, and Okello-Ogoja u.d.). Some of the households which did not use bednets used other protectives such as mosquito repellants, and this varied with level of

malaria endemicity (Kilian 1995). Some households with ITNs also combined them with other preventive methods such as aerosol insecticides, and coils in the Ugandan studies. People were reported to value products that a) kill mosquitoes, b) reduces malaria c) keeps mosquitoes away, d) safe to use around children and e) long term solution to mosquito problems (AED 2001).

The convention to treat a mosquito net with pyrethroid insecticide is to apply a standard dosage every 6-12 months and to avoid washing the net until just before re-treatment (Miller et al 1999). In their study carried out in a peri urban community of Dar-Salaam, Miller and others found that most of their respondents washed their nets quite frequently from once a fortnight to once a month. The major reason for the frequent washing was the dirt which accumulated making the nets less comfortable, being perceived a health hazard and socially unacceptable. Likewise in the AED study done in 5 Ugandan districts, it was found 77% households washed their nets at least once a month while 37% washed nets every 2 weeks (AED 2001). The major factors affecting how soon a net becomes dirty is the environment in which the net is hung. Homes which used kerosene lamps and charcoal had their nets getting dirty faster than those which used electricity. They conclude that a low dose of insecticide frequently applied may be more appropriate in the long run (Muller et al 1999).

Major challenges of promoting insecticide impregnated bed-net use are the uncertainty of the long-term effects on young children's immunity and subsequent morbidity and mortality (WHO quoted in Müller and Jahn). Other challenges are the very low re-treatment rates outside trial situations; the cost effectiveness of net use in the long run, the potential for the development of resistance to the used pyrethroid insecticides (Coleman et al 1999).

# 3.6.2 Indoor residual spraying

Indoor residual spraying (IRS) involves spraying all stable surfaces inside human habitations with an insecticide having a residual action (UNAS 2007). IRS reduces the survival of vectors which enter houses. It takes 8-22 days for malaria parasites in a

blood-meal taken by an anopheline (from an infected person) to develop to a stage where they render the mosquito infective. If the life span of the vector mosquito is reduced below the length of this period, they become incapable of transmitting the disease. IRS is considered to be more effective than the anti-larval measures which need to be applied with a high degree of perfection to be effective (UNAS 2007). There are a total of twelve insecticides recommended by WHO including DDT. One advantage with DDT is its relatively low cost per house basis compared to pyrenthroids.

A major limitation to IRS is the tendency for the vectors to develop resistance to insecticides. Studies carried out in Benin in West Africa showed the existence of pyrethroid resistance in An. Gambiae which threatened the future of ITN and IRS. Resistance may be due to physical changes in the vector or behavioural resistance whereby a mosquito avoids pesticides by exiting and resting outdoors following an indoor blood meals; or avoiding DDT-sprayed surfaces after blood meals (UNAS 2007). The consensus study carried out by the Uganda National Academy of Sciences also identified other causes of resistance notably:- using one insecticide over along time; using new insecticides when the existing one is no longer effective; and failing to monitor vector insecticide resistance among others. Some of the recommendations are: undertaking a baseline assessment of key entomological variables such as mosquito species and biting behaviours, including ecological mapping; monitoring vector resistance, and selection of the insecticide taking into consideration issues of safety, efficacy, and residual effect, insecticide formulation, community acceptability and cost as well as the susceptibility data (UNAS 2007).

#### 3.6.3 Health education for malaria control

Health education is a tool which has been reported to improve malaria management and prevention at community level (Tavrow and Rennie 2004, Minja et al 2001). For example, in a neighbour-to-neighbour experimental education project to improve malaria treatment in households in Bungoma District, Kenya, whereby brochures, and song contests were done aimed at improved antimalarial use, found greater improvement in malaria management in the case studies than in the controls (Tavrow and Rennie 2004).
Likewise, health education (based on formative research into local knowledge and practices of malaria) is reported to have sharply increased the ownership and use of ITNs in a Tanzanian study (Minja et al 2001).

Despite these benefits, however, there is an observation that the current PHC programmes have not emphasized health education on malaria and as such much of the population has no knowledge of the basic facts about the disease. The link between the mosquito and parasite are not well understood in many communities. Many people have wrong beliefs about causation of malaria (Azairwe, 2001). Wrong beliefs lead to seeking wrong treatments from wrong places. Between 18% and – 81% had ever received any health education in epidemic and endemic areas of Uganda (AED 2001, Okello-Ogoja 2001, Azairwe, 2001). The most common sources of information on malaria in the reviewed studies in Uganda were radios (AED 2001, Okello-Ogoja 2001). In another study, by Kaliisa and Osiga-Gamba (1997), community health resource persons taught people about general health, but not about the prevention and control of malaria.

However, in situations where health education is provided by health workers, Montgomery and others (2006), observed that it is wrongly targeted and executed failing to achieve self-efficacy and empowerment for disease control. Health education which targets women is insensitive to the context in which knowledge is transformed into action as women lack decision making responsibility and financial resources to control treatment decisions. Women bring the children to health facilities but the decisions regarding timing and type of treatment are made by a male family member, usually the child's father, uncle or grandfather. Blaming mothers for having delayed to bring a child to a health unit for treatment, is likely to lead to further delays in presentation at the health facility. Also the way health education is given to mothers to repeat what the health worker has said is criticized because it may make the mother internalize the role of un-educated and lose faith in her own knowledge and ability to do things.

However, in another study done in rural Gambia, where researchers asked child carers who had visited a health unit what the health care providers told them was the problem with the child; findings indicate that less than a third of the caretakers responses matched the diagnosis that the health care provider had written on the child's medical card. There was a mismatch both in terms of diagnosis and treatment regimen. The mismatch was most common with malaria and with a drug like chloroquine despite that is had long been used and was well known to mothers. Also most mothers in this study did not give the first dose of antimalarial to the child while still at the health centre because they argued they wanted to take medicine with food or water which was not readily available at the clinic (Conteh et al 2007). Possible explanations were misunderstanding of the instructions given by the health care providers and ambiguous style of communication which behaviours lead to poor adherence.

### 3.7 Research gaps

Although the reviewed health system practices and threats directly and indirectly point to possible social responses, it does not indicate whether and how policy addresses the identified practice problems, the threats, and the critical values for the attainment of the highest standard of health. The fragmented nature of the studies and the different *contexts* (Walt and Gilson 1994) in which the studies were done cannot allow an assessment of policy adequacy. Actually, different studies have succinctly pointed to the need to tailor policy to local situations if the desired social goals are to be achieved. This is also echoed in the HSR ideas relating to the realization of the objectives of health. Mills and others (2001) have argued that the social responses to health problem and the structuring of the health sector should be based and guided by the health care *contexts*. The reviewed studies are not holistically done and are not context specific.

Corollary, this study analyses disease control policy basing on a holistic understanding of the different dimensions of the malaria treatment and prevention; service organization and dynamics within the social, cultural, economic, and politic contexts of Uganda; and from the perspective of local people who constantly experience the malaria problem.

### 3.8 Theoretical frameworks

#### 3.8.1 Implementation Theory

Four approaches to policy implementation have been identified in the literature namely:

- 1. the machine model, implementation is assumed to be propelled by a clearly formulated plan backed by legitimate decision making authority;
- the games model swings from total rationality to virtual irrationality in implementation and plays down plans and policies emphasizing bargaining power and exchange;
- evolutionary model implies that policy is significant not because it sets the exact course of implementation but because it shapes the potential for action;
- 4. the transactional model urges that to carry out a program, implementers must continually deal with tasks, environments, clients and each other. The key to success is continual coping with contexts, personalities, alliances, and events. This model emphasizes adaptation and the willingness to acknowledge and correct mistakes, to shift directions and learn from doing (Warwick 1982). This study was inclined to this last model.

Critical variables which shape the directions that implementation might take and outcomes include the: context, policy content, capacity, commitment of implementers to the goals, coalitions of actors who may be opposed to effective implementation, communication, willingness to implement policy (Brynard 2005, Ryan 1996, Vedung 2005). Each of these is described briefly below.

The context or environmental factors may create disruptions to the policy environment and are further shaped by the larger context of the social, economic, political and legal realities of the system. With regard to policy content, Ryan (1996) provides four conditions influencing implementation outcomes. These are: a) consistency and clarity of objectives/directives, b) valid theory of cause and effect (policy formulation); c) adequate resources (capacity), d) integrated policy delivery system (structures).

Brynard identifies the concept of capacity to explain implementation success and failures. Capacity refers to the availability and access to tangible resources (human, material, technological, logistical etc) and intangible requirements such as leadership, motivation, commitment, willingness, social capital, among others needed to transform rhetoric into action. Walt (1994) describes the political resources as being the legitimacy of the regime, whether the government issuing a policy is autonomous or not, and the existence of consensus among elites in favour of a policy. It is argued that if a government regime has broad based support its policies are likely to be embraced and implemented without much resistance or opposition. Managerial resources include the control of the budget, personnel appointments, support services, among others. Technical resources include a capacity for policy analysis and technical analysis of what is feasible to do. Other theorists have identified social capital and empowerment to be important resources especially in enhancing health and reducing health disparities (Dasgupta and Serageldin 2000, Carlson and Chamberlain 2003, World Bank 2006). Concepts of social capital and empowerment are discussed later on in relation to community and service organization.

Organisational capacity refers to the structures, functions, processes, resources and management style of a system (Bossert 2000). For example, in relation to health, capacity refers to the ability of the health care system to achieve its objectives as a function of both its internal capabilities and structures, and in relation to its many external environments or what Grindle and Hilderbrand (1995) refers to as the *task networks*. Major problems with capacity is determining the necessary resources, and answering political questions regarding who gets what, when, how, where, and from whom (Brynard 2005).

Commitment means willingness or an ability to implement policy by all actors at all levels through which policy passes. Conception of how to achieve commitment differs between the top-down supporters and bottom-up supporters. For the former, they assume commitment will happen naturally by the content of the policy and resource provision both of which are controlled from the top. The bottom-uppers, however, while agreeing on the influence of policy content and capacity, contend that commitment is influenced much more by the institutional context, clients, and coalitions. Commitment is influenced and will influence the content, capacity, context, clients and coalitions. Each program may have its unique variables and linkages that need to be understood to fix a particular implementation process. Vedung (2005) proposes 3 theories to explain administrative willingness. The theories are: the bureaucracy's self-regarding behaviour, attitudinal mismatch theory, and regulatory capture theory. Public servants may have their agenda which may conflict with those of the principal's directives. They may harbor doubts about the appropriateness of the policy itself, or disapprove of the objectives of the policy, or accord those objectives a low priority in the competition for scarce resources (ends-based non-compliance). Means based non-compliance, on the other hand, involves doubts about the effectiveness of the recommended action reaching the stated goal. The regulatory capture theory suggests that whole agencies may be seduced to act in a manner favourable to the addressees.

In addition to the variable of implementer willingness, Vedung (2005) further identifies comprehension of the policy, street- level- bureaucrats' discretion to do things which cannot be completely controlled because there are never enough resources to provide close, frequent, and direct supervision to them. Also local level implementers may feel that policies imposed from above work against the best interests of the local community which elected them. Implementation failure could also be a function of the coping strategies of bureaucrats as when they limit the information they give to clients to avoid caseload; or when they attend to cases which promise success and play down the difficult ones (Vedung 2005).

One benefit of using the implementation theory is that it captures the core elements of policy analysis; that is, policy content, implementation process and actors. The major limitation of the implementation theory is that it is patched up using different frameworks some of which adopted a top-down approach and also a bottom-up approach. To address this limitation, the implementation theory was complemented with some concepts from Rogers' diffusion theory. This theory was considered useful in explaining usability of preventive methods to disease control like the use of ITNs. In his discussion of adoption rate of innovations<sup>19</sup>, Rogers (2003) describes the characteristics of individuals who

<sup>&</sup>lt;sup>19</sup> "An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. The perceived newness of the idea for the individual determines his or her reaction to it. Newness of an idea may be expressed in terms of knowledge, persuasion, or a decision to adopt" (Rogers 2003:12).

adopt innovations early and late, and the factors influencing action. Early adopters are characterized to have higher social economic status in terms of years in formal education, sources of income, social responsibilities, and a higher degree of social mobility. They also have certain personality notably being less dogmatic (not having a closed belief system), empathetic, having greater ability to deal with abstraction, rationality, and intelligence, and a more favourable attitude toward change than late adopters. They also have a more favourable attitude toward science, and are less fatalistic (have high self-efficacy i.e. ability to control one's life and future). Early adopters are also said to have more social participation, and are highly interconnected through interpersonal networks in their social systems, have more contact with change agents, greater knowledge of innovations, exposure to media communication etc.

Issues considered by people before they adopt innovations are: the relative advantage, compatibility, complexity, trailability, and observability. Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes. The degree of relative advantage is often expressed as economic profitability, or conveying social prestige. The nature of the innovation and the characteristic of the person determine the specific type of relative advantage. However, Rogers reports that one area where people find difficult perceiving its relative advantage are the preventive innovations. This is because the rewards for prevention are delayed in time, and the event avoided is difficult to perceive because it is a non-event.

Compatibility is the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of potential adopters. An innovation which is incompatible with cultural values can block its adoption. Some people may adopt or reject innovations on the basis of their complexity –simplicity. Trialability is the degree to which the results of an innovation can be easily tried. Observability is the degree to which the results of an innovation are visible to others. Rogers propose two main ways of increasing adoption that is, communication campaigns which emphasize relative advantage of preventive innovations, and provision of incentives. Incentives may be given to the individual for adopting the right behaviour or to his/her system such as a

village. Incentives may be positive or negative, monetary or in-kind, and immediate or delayed.

### 3.8.2 The Life Model Theory

The life model theory postulates that social problems such as ill-health have their roots in the *person-environment interaction*. Likewise, when harnessed the person-environment provides the resources for the resolution of these social problems. The Life Model theory is founded on the ecological theory. The ecological theory emphasizes the reciprocity of *person-environmental transactions* through which each influences and shapes the other over time. People need to receive from their environment the resources essential for development and survival. Reciprocally, the environment needs to receive the care necessary for its evolution.

The *person* comprise of one's needs, capacities, rights, aspirations, personal development and functioning. The *person* also constitute the way one perceives oneself (self-concept) and his/her abilities to manage the problem (efficacy and competence), control over one's life, and take responsibility for one's decisions and actions while respecting the rights and needs of others (self-direction) (Germain and Gitterman 1996).

The *environment* consists of the social world of other human beings, ranging from intimate social networks to bureaucratic institutions. It also consists of the natural world, the physical geography, the space etc. Social networks, consists of kins, friends, neighbours, workmates, and acquaintances. Social networks or informal helping systems serve as buffers against life stressors and the stress they generate. Such support include: goods and services, expressive support (empathy and encouragement), resources, and information (advice and feedback). Some networks are not able or willing to provide these supports, while some provide these supports but some people due to their background, personality, perceptions and self esteem reasons do not use the informal helping systems (Germain and Gitterman 1996). Proponents of this theory urge that when community and family supports are weakened, social deterioration increases the risk of personal deterioration. When that happens, the tasks of providing direct service to vulnerable and oppressed populations become more difficult to accomplish. This suggests

a need to organize or strengthen informal social supports systems of households. This is what has also been called *social capital* (Coleman 2000).

Bureaucratic organisations constitute another salient feature of the social environment. For some individuals and collectivities, organizational network resources are available, but people are unable to access or use them. For others, organizational and network structures and functions are unresponsive to their personal styles and needs. And still for others, important organizational and network resources are unavailable and their basic needs remain unmet. Dysfunctional processes may arise between clients and service providers in the form of discrepant expectations, misunderstandings, and misperceptions, value conflicts, and differences in backgrounds. These processes interfere with the helping process and create additional stress for clients.

The ecological concepts of *habitat* and *niche* are also particularly relevant for understanding the environment's impact on people. Habitat consists of the natural world of climate, and landscape, water sources, quality of air, animals and plants. The natural world provides people with resources essential for survival of all species. However, lack of attention to preservation of the natural world, and careless, destructive abuse of natural resources endanger all people.

Imbalances in the person-environment interactions create stressful reactions and feelings which range from unpleasant, disquieting, to immobilizing. Intensity of stress is determined by the actual dimension of the actual stressors, their meaning to the individual and collectivity, and the availability of environmental supports. A *stressor* is appraised as a *challenge* when one has sufficient personal and environmental resources to master it. In contrast a stressor appraised as a *threat*, constitutes a harm or loss which creates feelings of vulnerability and risk. One person's threat is another person's challenge. When a life stressor is perceived as a threat, a process of secondary appraisal takes place by which a person asks oneself "what can be done about the situation". At this point a person launches efforts to manage one's feelings, and/or use personal and environmental resources to manage the stressors. When people feel positive about their capacities, and

hopeful about their needs being met and aspirations fulfilled, and view the environmental resources as responsive, then this is likely to achieve a reciprocally sustaining condition of "adaptedness". Adaptedness or people's coping with the environmental demands leads to "social functioning"<sup>20</sup> of the person. Germain and Gitterman offer ways of helping individuals cope and the role of professionals.

This model was useful in analyzing policy adequacy in relation to the extent it addressed inherent causes in the *person-environment interaction* as well as the extent it took advantage of the existing resources within the dyad. Another advantage was that the theory enabled the analysis to move back and forth between individual study participants to families, communities and organizations as well as the legislative bodies thus making the study obtain a holistic understanding of the health problem and policy considerations. A major limitation of this theory is that it does not guide the analyst on how to handle the multi-layer and faceted problems in the person and the environment.

## 3.8.3 The Health Belief Model (HBM)

The health belief model complements the life model theory by providing more concepts to understand beliefs and cognitions of the person in a situation of illness and health care seeking. The health belief model was developed between 1950s and 1960s when new public health programs were being initiated in the western countries. The significant constructs of the model were originally documented by Rosenstock in 1966 (Rosenstock 1974a 1974b, Davidhizar 1983). Model theorists were concerned that many individuals were failing to take advantage of the low cost *preventive* health care services, and they thus attempted to explain action and inaction of the adults. The model has since been evaluated, received empirical support, and extended to include people's responses to illnesses and compliance with medical directions (Roden 2004, Finfgeld et al 2003, Tones and Tilford 2001).

The model described by Rosenstock (Rosenstock 1974b, Davidhizar 1983, Finfgeld et al 2003, Roden 2004) contends that behaviour is influenced by multiple interacting beliefs

<sup>&</sup>lt;sup>20</sup> Social functioning is ability to meet one's needs (Bartlett 1970)

notably: perceived "susceptibility" and "severity" of a condition, "efficacy of alternative behaviours", "barriers to actions", and "self efficacy". In regard to susceptibility, individuals vary greatly in terms of their perceived vulnerability. Perceptions range from total denial of susceptibility to perceptions of imminent risk. Perceived severity refers to the supposed consequences of contracting a health problem or leaving it untreated. Consequences may involve physical as well as psychosocial outcomes such as physical disability, pain, social restrictions, and financial costs.

Although people may be sufficiently threatened by a condition, action will not take place until they believe that their efforts will be efficacious. As such the perceived benefits of their behaviours must outweigh the presumed costs. Another factor that influences behaviour is perceived barriers or the negative aspects of particular actions. Barriers may include financial costs, inconvenience or pain. Perceived barriers are reported to be the most influential belief system affecting behaviour change. Susceptibility and severity are hypothesized to provide the energy force to act, whereas diminishment of barriers is thought to provide an accessible path for action. A final belief is self-efficacy. This is the perception that one can effectively execute a behaviour to produce a desired outcome.

The model also stipulates that a "cue-to-action" or stimulus (either external or internal) must trigger the appropriate behaviour by making the individual consciously aware of his feelings about the health threat. Though cues act as catalysts for health behaviour they have not been well investigated (Finfgeld et al 2003). Demographic, social-psychological, and structural variables are included in the model as potential modifying factors which serve to condition both individual perceptions and the perceived benefits of preventive actions.

The roles of the health care providers point to society-based interventions as well as individually targeted strategies. The model theorist suggests that efforts should be directed at decreasing the environmental factors that may inhibit health behaviour change. In turn, it is hypothesized that beliefs regarding barriers to change will be altered. For example, health care providers are encouraged to minimize inconvenience, reduce costs, and decrease the need to travel. The model experts warn that direct attempts to change beliefs are rarely effective unless all beliefs are addressed at once. Health beliefs may, however, be altered with "social pressure" (Finfgeld et al 2003).

A major limitation of this model is the questionable applicability of the model to explain health seeking behaviours of acute conditions like malaria. The model was developed in western countries to apply to chronic health problem like cancers, obesity, and diabetes which provides adequate time for an individual to think through the actions to take.

### 3.8.4 The human rights perspective to policy design

The human rights perspective argues that attainment of the Goals especially those of health require integrating the *right to the highest attainable standard of health* (referred to as the *right to health*) in the poverty reduction and all the development policies (Hunt 2007). The *right to health* means putting "in place policies and action plans which will lead to available and accessible health care for all in the shortest possible time" (WHO2002:9). Substantive elements of the rights-based approach to health include: health service availability, accessibility, acceptability, and quality; safeguarding human dignity, paying attention to vulnerable population groups, considering gender health, ensuring equality and freedom from discrimination, among others (WHO 2002).

The human rights approach to health policy formulation reflects many of the ideas in the basic needs approach. Both are concerned with important values of equity and social justice (Gwatkin 2000, Midgley 1999, Conyers 1986). Proponents of the basic needs as well as the right to health believe in targeting resources to the most needy sections of the population rather than saturating the whole population with services. The basic needs approach represents the trickle-up school of thought which advocates dealing directly with the poor as the best means of producing sustainable growth. How to obtain equity has been addressed in three different ways: a) target resource and services to the poor or most disadvantaged; b) reduce the poor-rich health inequalities, and c) redress health inequities (Gwatkin 2000). Those concerned with health from a poverty perspective are concerned with improving the health of the poor alone rather than reducing differences

between the poor and rich. Proponents of the orientation towards equality, aim at reducing the poor-rich health differences. Those concerned with righting the health inequities are concerned with righting the injustice represented by inequalities or poor health conditions among the disadvantaged. Although these schools of thought propose slightly different ways of achieving what they stand for, one common similarity is a concern for the lowest or most disadvantaged in society (Gwatkin 2000, Whitehead 1990). Thus, the focus of all known inequality-oriented health equity proposals is on lessening poor-rich differences through special efforts to improve the health of the poor (Gwatkin 2000). However, WHO calls for ensuring an adequate standard for the entire population; provision of a basic minimum level of well being and services" (WHO1996).

Access is one usable dimension of *equity* in planning health service provision. Access means "equal access to health care according to need", and "equal utilization of health care according to need" (Green 2003). Access has to do with proximity to services as well as ability to pay. However, given that all people with the same need may not live within the same distance, an alternative way of operationalizing equity is using a more embracing concept of service utilization. Utilisation of service is recognized to be related to a variety of factors including distance from the service; cost involved in using a health facility (fees charged; travel to and from the facility and drug costs); lost income during time spent in attending; attitudes of employers to absence from work; perceptions of need and of the utility of health care; cultural constraints on the use of medical care, and attitudes of health professionals (Green 2003). This conceptualization of equity is based on the understanding of the ease or difficulty of seeking health care by individuals and households.

Other elements of the human rights approach which make a policy adequate are:

(a) encouraging health workers to engage in political activities geared at devising equitable policies and programmes that benefit the most disadvantaged; strengthening health systems; placing important health issues higher up the national and international agendas; securing better coordination across healthrelated sectors, raising more funds from the treasury and so forth (tasks that go beyond their traditional roles);

- (b) give health workers a lot of attention by conceiving and implementing appropriate policies that ensure fair terms and conditions of employment, as well as improving policies that reduce skills-drain from South to North, and from rural to urban areas;
- (c) use vertical programs if they help to strengthen health care systems;
- (d) require all duty-holders to be held accountable for their conduct by establishing accountability mechanisms which identify health policies and institutions which are working and those not working and the reasons for the status quo;
- (e) make the developed countries to respect their financial pledges to developing countries under MDG 8 as part of the principles of reciprocity, shared responsibility and mutual accountability;
- (f) strengthening accountability for MDG 8 which is currently quite weak with some donors publishing their progress towards the Goal and others not doing so. It is emphasized that international assistance and cooperation should not be understood as meaning only financial and technical assistance: it also includes the responsibility of developed states to work actively towards an international order that is conducive to the elimination of poverty and the realization of the right to health in developing countries (Hunt 2007, Kaul and Faust 2001).

The human rights perspective also emphasizes the importance of the process of policymaking by suggesting an enhanced, active and informed participation of individuals and communities in decision making that affects them. States are encouraged to create mechanisms for communities to "voice" their concerns on a collective basis, and participate in problem definition, planning and budgeting (Hunt 2007, Mehrotra 2006). Community participation as a major concept and tool for community organization is elaborated on later.

Another process issue is the need to disaggregate the health problem or improvements according to poverty levels or other grounds of prohibited grounds of discrimination, and ensuring that the poorest groups receive a larger share of the public health spending than the middle and upper classes. It is specifically suggested that health goals should not be stated in terms of some societal averages such as a decline of x% in a country's infant mortality, but in terms relevant for equity enhancement or poverty reduction (Hunt 2007, Gwatkin 2000). WHO and the WB indicate that health systems should also financially protect their citizens from large out-of-pocket payments expended when they fall sick; (a financial/social protection goal) of a health system.

Some of the limitations put against the human rights perspective is the vagueness in the allocation of obligations without which these rights cannot be met (O'Neill 2005). O'Neill notes that while the liberty rights are universal and have no allocation problem (since they are complete when others are obliged to respect them), the welfare rights to food and health care have an allocation problem because they are institutional and transactional. While states are considered to have the obligation to meet people's welfare rights, these states are also reported to have a lot of limitations. Some states are too weak - failed states or quasi states with inadequate power to carry out the obligations (O'Neill 2005). Some have weak institutions and accountability in the use of public resources (UNDP 2003, UN and Lalaguna University 1999, Midgely 1997). The Marxist critics perceive the state as ruled by class and power relations and may not promote public interest but will work in favour of dominant classes. The "private interest" (public choice) theorists argue that the state is made up of self-interested bureaucrats and politicians (Walt and Gilson 1994, Parsons 1995). Subsequently, it is suggested that although the state has an ability to mobilize resources and has a comprehensive perspective of the social and economic situations of the country, and an ability to avail services equitably, some of these obligations should be given to powerful non-state agencies such as powerful NGOs, major religious, cultural or professional and educational bodies to provide goods and services effectively. However, the social development theorists encourage the use of government and community actors in policy and implementation (Midgely 1997, 1995).

3.8.5 Community organizing approach

Community organizing, one of the dimensions<sup>21</sup> of the communitarian approach has been associated with producing health impacts through strengthened social networks, community participation, psychological empowerment, and community competence (Wallerstein 1993). Community organization is important because it embraces many of the tools expressed by the human rights approach and health promotion for the attainment of the desired social goals in health.

Community organization is a method of social work that targets social institutions with regard to their capacities for meeting human needs. Community organization has its origin in the coordination of services in developed countries in the early 20<sup>th</sup> century. Community organization has its central purpose as adjustment of needs and resources. The needs are not only of the organizations in the community but also of the people. Adjusting needs to resources means finding solutions to social problems by redistributing three factors: resources, functions, and decision making power. Resources have to do with how money, manpower, and other scarce resources are to be distributed among service functions and organisations. It is also concerned with establishing the effects of shifts in resource distribution among various socio-economic groups. Service functions has to do with where and by whom different services are to be performed. Community organization practice can alter the locus of decision-making so that control of certain functions and resources is transferred to different structures (Perlman and Gurin 1972).

There has been an evolution in the way community organization practice is conceptualized (Perlman and Gurin 1972). Today, community organization is conceptualized as *local development and organization, community planning, and social action*. These vary along a number of dimensions namely: goals, assumptions orientation toward power structure, conceptions of the client being served, conceptions of the role of the practitioner, strategy, tactics, and techniques. This study used these three models which are described briefly below.

<sup>&</sup>lt;sup>21</sup> Other dimensions of the communitarian approach or ways of organizing community interventions are: community development, community action", "community care or community organization", "community education", and "feminist community work" (Payne 1997:68)

### 3.8.5.1 Local development and organization: the concept of *social capital*

The goal of local development and organization is self-help and the integration of community groups. It is assumed that there are common interests among the different groups and the strategy is directed toward achieving communication and consensus among them. The practitioner serves as an enabler, catalyst, coordinator, and educator. The community is self-determining. Local development and organization can be used with service providers in a community (community institutions) and with service beneficiaries. One important indicator and resource for local development is *social capital*.

Social capital like any other form of capital, is a productive resource making possible the achievement of certain ends that would not have been possible without it. Social capital has to do with norms and networks of civil society that enable groups of individuals to cooperate for mutual benefit and may allow social institutions to perform more productively (Coleman 2000). Communities with high social capacity (the ability to work together) can identify problems and needs, achieve consensus on goals and priorities, and cooperate with strategies to achieve goals (Putman et al 1993, Midgely 1997). Through networks, people share information, provide and receive support (material, emotional), and work together to achieve collective goals that could not be accomplished by an individual working in isolation. There are beliefs that social capital enhances the political capacity of communities to secure and protect important community resources and services. There are also suggestions that social capital improves health related behaviours through exertion of positive peer pressure (Smith and Polanyi 2003). The term, therefore, refers to available resources (capital) that accrue to people by virtue of their mutual acquaintance and recognition (social) and that can be used for a variety of productive activities (Coleman 2000).

Social interaction may exist horizontally (micro to micro) and vertically (micro to macro and macro to micro) and all these are causes and consequences of social behaviour. Three forms of social capital are identified in the literature namely: localized social capital (also called *bonding*), *bridging*, and *linking* social capital. Bonding social capital accumulates

in the course of informal social interactions of families, churches, and social groups which people participate in. These networks help to engender trust, and to communicate and enforce norms of behaviour among group members. Bridging capital which occurs between groups of different communities (intra-group networking) are important in the acquisition of new information and opportunities. Linking social capital refers to connections between communities and formal institutions. For bonding groups to produce society wide effects, they must facilitate generalized trust and political accountability. Putman is quoted as arguing that bonding groups cannot lead to improved economic opportunities unless they are networked with groups outside of the community (Macinko and Starfield 2001). Unfortunately, the poor are reported to have a lot of bonding, a moderate of bridging, and very little of linking (Claeson et al 2002).

Social capital can be improved through community building activities. Community building refers to the goal of going beyond community-based service provision or production to strengthen informal relationships and the organizational infrastructure of communities, establish and reinforce sound values, and to build the capacity of communities to manage and foster change. One critical requirement for improving community-building practice is better information about communities and community-change processes (Chakin et al 2006, Warrick et al 2005). Major limitations of social capital are the existence of deviant norms of some social groups which may distort development and outcomes; and the likelihood of government abdicating its responsibility of service provision to the social groups in the community. This is where community building efforts and empowerment becomes essential.

#### 3.8.5.2 Social action: community empowerment

The goal of social action is a change in power relationships and resources. The clientele are disadvantaged segments of the community; and social action practice helps them to become organised, to crystallize action issues, and to engage in conflict-oriented action against the power structure. A major concept and tool to use is community empowerment. There is evidence that *empowerment* has a health-enhancing capability (Wallerstein 1993). Hur (2006) characterizes empowerment as being multi-dimensional

occurring within the sociological, political, economical and other dimensions. It occurs at the individual, group and community; and it is a social process because it occurs in relation to others and it is also an outcome - observable and measurable.

*Empowerment* is defined as "a group's or individual's capacity to make effective choices, and transform those choices into desired actions and outcomes" (WB 2006:10). In its framework of empowerment, the WB has come up with concepts of *agency* and *opportunity structure* to describe sets of factors that influence empowerment. *Agency* is defined as the actor's or group's ability to make purposeful choices - that is, to envisage and purposively choose options. Ability to choose is constrained by their *opportunity structure* which is defined "as those aspects of the institutional context within which the actors operate that influence their ability to transform agency into action" (WB 2006:10). Examples are the institutional rules and norms.

The ability to envisage and purposively choose options is largely predicted by the agency's asset endowment. These are stocks of resources that equip actors to use economic, social, and political opportunities to be productive, and to protect themselves from shocks. Important assets include psychological, informational, organizational, material, social, financial, and human assets. *Power* results from a combination of these resources and rules. Of these resources, psychological assets especially raised levels of consciousness are reportedly very important. The effective realization of the made choices by an actor depends upon the institutional context within which the actor lives and works. Thus, three measures notably: existence of a choice, use of a choice, and achievement of a choice are important for measuring or tracking empowerment. The achievement of choice is a measure of how far a person or group is able to achieve the desired outcome. If one is not achieving one's choices, then this calls for the assessment of whether there is something in the opportunity structure that affects the achievement of choice. A person's capacity to make effective choices vary according to what one is doing and the level the person is acting.

Conceptualization of empowerment and its determinants operate at three *domains* and three *levels*. The domains are the state, the market, and society. Each of these is subdivided into sub-domains. For example, the state domain is divided into justice, politics, and public service delivery. The societal level is divided into *intra-household* and *intracommunity*. Individuals and groups experience different degrees of empowerment in each sub-domain depending on their position and roles. For example, in the social domain, social norms may combine with local implementation of formal institutions to affect the choices available to individuals and social groups. The degree of empowerment in one domain may correlate with a similar degree in another domain. People also experience domains and sub-domains at different administrative levels – micro, intermediary and local.

Whitehead (2004) distinguishes between *individual empowerment* and *community level empowerment*. Individual empowerment reportedly addresses individuals with things like increasing knowledge and skills, and subjective powerlessness. For example, health education given to individuals aims at individual empowerment. This has been criticized because of the tendency to treat individuals as separate from their social context. It ignores the environmental conditions which contribute to not having the power. Some critics actually describe such knowledge and skills provision attained by the individual as *impowerment* as against *empowerment* (Whitehead 2004).

A much broader definition of empowerment proposes that people gain control in their own lives in the context of participating with others to change their social and political realities. It involves change of the individual, organizations, local communities, or national policy. This broader definition of community empowerment has been referred to as having equity and capacity to solve problems, having abilities to identify their own problems and solutions, having increased participation in community activities, enhanced lay helper capabilities, activated social support, and increased self-efficacies to adopt healthier behaviours and enabling individuals and communities to increase control over the determinants of health (*health promotion*). Preconditions for successful community empowerment are: a sense of community, community competence, collective efficacy and community capacity (Campbell and Jochelovitch 2000, Hur 2006). An essential part of empowerment is value clarification; which is helping people become clear about what they really want. One is not concerned about how they behave as long as their choice of behaviour is informed. Hur (2006) lists three elements as being essential in community empowerment. These are: community belonging or identification, community involvement, and community building. Community building refers to creating a sense of community among residents that will increase its ability to work together, problem solve, and make group decisions for social change (Fetterson 2002, Mattessich and Monsey 1997).

*Health promotion* is a social political process that seeks to radically transform and empower communities to work on the socio-political-economic determinants of health as they impact on individuals and the communities. It acknowledges that individuals are not always accountable or responsible for their own health status, and that strong external elements are always in play. Broader determinants of health such as ecological, cultural, economic and environmental determine the level of health of individuals and communities and all have political underpinnings within an environmental engineering process.

The attributes of health promotion are four namely: the need and desire to develop and implement community driven health reform based on social action, social cohesion and social capital; the willingness of communities to become empowered and self-reliant in determining collective health needs and priorities; the attainment of health gain as a fundamental priority and shared social objective of community action; and the active development of public health policy by communities as it applies to those communities. The goal of health promotion is thus the facilitation of concerted social empowerment that creates full and organised community participation and ultimate self-reliance. While empowered individuals may at first be needed to mobilize communities, an empowered community generates norms and support systems that enable individuals in greater numbers to acquire the competencies and characteristics of self-empowerment (Whitehead 2004).

Outcomes from health promotion can be positive or negative. A positive outcome generally relies on the capacity and willingness of communities and the individuals within them to become politically and socially empowered/self reliant, so that they can prioritize and act upon health issues based on need. Negative outcomes occur where professionally paternalistic and disempowering health policy decisions force health related outcomes that are irrelevant to sustained community development and are not based on or resourced according the social reality of that community (Whitehead 2004).

Health education is mostly associated with facilitating individual enablement to undertake medical and preventive actions while health promotion is associated more with community based empowerment. Health education is an activity that seeks to inform the individual on the nature of causes of health /illness and the risks associated with their lifestyle or behaviour. Health education seeks to motivate the individual to accept a process of behavioural-change through directly influencing his/her values, beliefs and attitude systems, where it is deemed that the individual is particularly at risk or has already been affected by illness/disease or disability (Whitehead 2004, Sidell et al 1997, Tones and Tilford 2001). This is what has also been called the knowledge-attitudebehaviour (KAB) (Kemm and Close 1995). The KAB model is criticized because it places too much emphasis on the behavioural choices of the individual and ignores the external factors which influence them.

Two approaches can be used by a professional to give health education: the *medical approach* which is a reactive and opportunistic process adopted when the client has an existing condition; or a *preventive approach*, a more proactive method adopted where the client does not have an existing condition or illness but may be at risk if they continue with or take up certain health damaging behaviours. While the intended outcome is behavioural change, leading to a positive health status outcome, on the contrary, the outcome may be adverse if it is ill-conceived and demands unrealistic and unsupported outcomes not based on the priorities or preferences of the recipient. Successful or unsuccessful outcomes are related to the degree to which the recipient values the change and believes that they are capable of producing it (*self efficacy*).

On the other hand, *prevention* embodies the goals of medicine: to promote, preserve, and restore health when it is impaired, and minimize suffering and distress. Prevention may be primary, secondary or tertiary. Primary prevention is defined as the protection of health by personal and community- wide effects such as preserving good nutritional status, or immunizing against infectious diseases. Secondary prevention constitutes measures available to individuals and populations for the early detection, prompt and effective intervention to correcting departures from good health. Tertiary prevention involves measures to reduce or eliminate long-term impairments and disabilities, minimize suffering, and promote the patient's adjustment to irremediable conditions (rehabilitation) (Last 1988). Both health education and promotion involve education provision. A major limitation to undertaking health promotional roles is the failure of the health workers and especially nurses to step out of their traditional roles to adopt the social political roles to health enhancement. This is partly aggravated by health social service delivery structures and organization.

## 3.8.5.3 Community/social planning

Community or social planning is one tool which is used by all the social development approaches for the attainment of the desired social goals. According to Payne (1997) social or community planning is concerned with participation in better planning of services, analysis of social problems and policy goals, and evaluating services and policies.

Planning is a decision-making process about allocating resources among various contending and conflicting objectives on the basis of which, formulated initiatives are implemented. Plans are purported to be important in enabling general policies to be translated into programs which produce visible results (Ofori 2002). Planning experts characterize planning as a political and technical activity making it seem no different from policies. Plan documents frequently include a mixture of policies and plans. What makes social planning unique is that the client or the intended beneficiary of the planning exercise is involved at each of the stages described, hence the centrality of the concept of *participation* in the community organization approach. Planning also involves some

projection over time. Plans have varied details and emphasis. Some include the determination of a goal as well as the means for carrying out the implementation while some only consider the implementation aspects.

The problem solving process involves three major tasks – analysis, action, and interactional. The *analytical* or what Kramer and Specht (1983) also calls the *technical* refer to the intellectual work involved in problem solving. These are the tasks the practitioner must perform in order to make choices as to what he/she will do, when, and how. He must continually analyse the situation in which he finds himself, the problem he is trying to over come, and the objective he is trying to achieve. And he constantly engages in assessing the relevant conditions in the environment which affect the nature of the problem and the possibilities of achieving his objective. The *interactional* tasks connotes the actions undertaken by the practitioner in relationship with other people – to communicate his /her proposals and ideas, to elicit thinking and activity, and to provide the atmosphere, conditions, and resources which make it possible for others to pursue agreed upon objectives. The *interactional* tasks are guided by the practitioner's analysis.

*Programming* involves the detailed spelling out of implementing actions to carry out broad policy related goal. It is basically a logistical type of activity, guided by considerations of effectiveness and efficiency in seeking an outcome. Programming involves deciding the content of jobs, resources and feasibility (Perlman and Gurin 1997).

## 3.8.5.4 Community Participation

Community participation has been suggested to play a key role in policies and interventions seeking to reduce health inequalities (Campbell and Jovchelovitch 2000, Tones and Tilfrord 2001, Green 2003). Community participation in health has been interpreted in various ways with different emphases being put on each in practice (Green 2003). The first interpretation relate to the individual's responsibility for her or his health. The second interpretation of the concept of community participation concerns involvement in decision making about the general type and pattern of health care. A third and newer concept – *community action for health* (CAH) stresses the notion of *action* and

suggests a more proactive and direct involvement of people in health development at local level with an obligation of the formal sector to share power rather than merely foster cooperation. CAH re-emphasizes the importance of community/government partnerships in tackling the problems of health care and development. This calls for a commonality of purpose, sharing of knowledge, and agreeing on common goals and objectives; training and political support. The essence of participation according to Oakley and Kahssay (1999) concerns two things: structural relationships and development of people's capacities and skills to negotiate for and seek the resources and changes they require to improve their lives.

Social psychologists indicate the processes and mechanisms of *participation* and *representation* that leads to positively impacting on health and community development. They define a *community* as a group of people who share:- a) an *identity* which the community is able to articulate; b) a set of *social representations* which organizes the world views of community members and guides their interpretation of reality and their everyday practices; and c) the conditions and constraints of access to *power*, both in terms of material resources, and symbolic recognition. Social psychologists argue that the key component of a community is that its members share a *common social identification* and that community advelopment workers should seek to locate their efforts within the communities of identity rather communities of space. Social identity reproduces and transforms power relations. Thus members of socially excluded groupings may come together to construct identities that challenge their marginalised status. Social representation which is the shared view of the world organizes and guides the relationship communities have amongst themselves with others.

Participation is, therefore, a process whereby the community is actualized, negotiated and eventually transformed (Campbell and Jovchelovitch 2000). It is through participation that a group of people can develop awareness about its resources and can engage with significant others in the public arena. Awareness about its own conditions and identity acquired in the process of engaging with others leads to *conscietisation*- the process of constructing critical awareness about oneself and the world. Negotiation of world views

and projects varies with the power a groups has. This is where empowerment comes in. Tones and Tilford (2001) actually argue that empowerment influences participation and participation influences empowerment. *Conscientisation* occurs at the moment at which members of a socially excluded group are able to state their identity in away that asserts recognition of their needs and interests by other sectors of society (Campbell and Jovchelovitch 2000).

One major limitation of participation is it is costly in terms of money and time; can be irrelevant and slow in situations of poverty and managing epidemics (UNDP/CSOP).

## **3.9** Synthesis of the Theoretical Frameworks: towards a conceptual framework

This section pools together the varied concepts from the reviewed theories showing how they work to bring a holistic understanding of implementation and an adequate policy. There are a number of actors; some of whom are involved in policy making while others are involved in implementation. Once a policy is made it is implemented by a number of actors including local government, health care units (both public and private) and households. The households' implementation is expressed in terms of health care seeking, use, and adherence to professional advice. Health care seeking decisions are influenced by their needs and values, beliefs and capacities (health belief model, implementation theory, and human rights). Likewise, the amount and quality of services provided by the health care systems, local government and other sectors outside health will be influenced by their capacities or resources; their commitments and willingness, relationships between actors in a system and with others in the environment; their comprehension of the policy. The existence of opportunities and mechanisms to receive feedback on service quality and implementation challenges by health units and policy makers may influence the quality of the policy.

Adequate policy and implementation by all health care systems addresses both the person and environmental causes of the problem; as well as harnessing the existing resources (life model theory). Thus the life model concepts cut across all health care systems including policy making. Community organization concepts of social capital, empowerment, social planning and participation are equally relevant to all health care systems for guiding implementation to meet human needs. For example, at the household level the family members need to make effective choices regarding sources of treatment for malaria and go ahead and execute those decisions. When they cannot execute their decisions then they need to be empowered and empowerment issues reflected in the policy. Inability of the private sector to treat malaria with recommended drugs, also implies social capital or empowerment deficiencies. An adequate policy would call for an understanding of these deficiencies and address them.

The human rights perspective help to highlights the individual and household needs and values for disease control to which other health care systems are obligated to respond with services and resources. Within the households, individuals have rights to access medical treatment and prevention technology such as ITNS. However, in situations of resource constraints and the existence of unbalanced power relations in families and also communities, the powerless and usually most vulnerable may be denied opportunity to access and use these services. An adequate policy would identify sources of social injustice in households or community and address them.

# CHAPTER FOUR

# METHODOLOGY

This chapter presents the methodology used to answer the research question. It describes the research design, and how different aspects of the research process were undertaken. Specifically, the chapter indicates the study areas and population, how the study areas were sampled; the study measurements and instruments, and how data was collected and analysed. The methods used and described were those considered to be the most appropriate to answering the research question and reducing the *random* and *systematic error* in sampling and measurement. The chosen methods were also the ones considered to be the best in maximizing internal<sup>22</sup> and external validity<sup>23</sup> and reliability (Marlow 2001, Rubin and Babbie 2001, Hulley and Cummings 1988).

## 4.1 Study Design

This was a cross-sectional retrospective and evaluative study using quantitative and qualitative methodologies. It involved undertaking three broad activities namely:

- 1. A phenomenological study in Mukono district to determine two things: a) household experiences of malaria, its management and challenges; and b) malaria control policy implementation experiences by health care systems as well other potential actors in the sub-counties.
- 2. A validation study in Mpigi district, an area which is socio-culturally similar to Mukono district but different economically; being poorer than Mukono.
- 3. Reviewing malaria control policy documents and relating them with field data.

### 4.1.1 The cross-sectional retrospective design

The study adopted a cross-sectional (or prevalence survey) retrospective design. This furnished a "snapshot" of the malaria experiences of the population at a specified time

<sup>&</sup>lt;sup>22</sup> Internal validity is the degree to which investigator's conclusions correctly describe what happened in study (Hulley and Cummings 1988).

 $<sup>^{23}</sup>$  External validity is the degree to which study conclusions are appropriate when applied to the universe outside the study. (Hulley and Cummings 1988).

(Hennekens and Buring 1987, Rubin and Babbie 2001). The time frame was historical in the sense that questions were asked on experiences of malarial illness covering some time backwards. Thus, questions on uncomplicated or mild malaria covered the previous two weeks up to the time of the study. Information on severe malaria covered events which had happened in the previous twelve months up to the time of study. Experiences of child deaths and disability covered relatively a longer period of five years prior the study. The period for death events was longer to enable the study obtain enough cases to study and draw generalizations on. All measurements on illness prevalence, management, health care making decisions and values guiding those decisions were made at once, in single interviews with no follow up period. This made it possible to describe relevant variables and their distribution patterns including malaria prevalence and outcomes (Hulley and Cummings 1988).

The cross-sectional design had an explanatory purpose (Rubin and Babbie 2001). Explanations were sought for variations which were found to be statistically significant during analysis. For example, when it was found that rural children tended to report more sicknesses that urban children, the analysis attempted to generate reasons for this difference. One major limitation of this design was the attempt to understand causal processes that occur over time and yet the conclusions are based on observations made at only one point in time. All events and decisions at households had already happened making it difficult to tease out in some cases what caused what. However, as Hulley and Cummings (1988) indicate, the study can and was able to examine some associations. The selection of the predictor variables and outcomes depended on the cause and effect hypotheses of the investigator rather than the study design. One of the benefits of using the cross-sectional design was its ability to give the prevalence of fever/malaria and perceived risk factors. The second benefit was that there was no waiting to see who will get malaria. This made it possible to complete fieldwork fast and inexpensively (Hulley and Cummings (1988).

The phenomenological study was carried out between January and July 2007. Information on planning and implementation for malaria control by local government and

health units covered the last two government financial years of 2005/2006 and 2006/2007. The policy documents dated as far back as 1998.

### 4.1.2 A critical evaluation study

This was a critical evaluative study which assessed the extent the existing malarial control policy addressed the needs and values of the people who experienced the problem, the person-environment risk factors, and implementation experiences of the different health care systems at all levels of social organisation. The purpose was to determine what needed to be put in an adequate policy. The study used both the *analytic descriptive policy analysis* method and *the value-critical policy analysis* method (Chambers 1993). The former described the policy goals, objectives and strategies while the latter judged the appropriateness of the policy content in relation to people's needs, values and challenges in managing the malaria problem.

The analytic descriptive policy analysis method involved elucidating the reasoning behind the policy by examining the relations between objectives and the means; the policy problem (causal relations) and the problem perceptions upon which policy rests. It also described the other operating characteristics of the policy namely proposed services or strategies, eligibility rules, organizational structure, financing method and interactions among the six characteristics of a policy (Chambers 1993, Runhaar et al 2006, Rossi et al 2004). Some of the questions addressed by this method were:- what argumentation underlies the top-down policy problem definition? How did the policy makers envisage the instruments chosen will solve the problem? What assumptions did they have? (Runhaar et al 2006). The purpose of doing this analysis was to determine whether the policy operating characteristics were in the first place consistent with the social problem analysis indicated in the malaria control policy. The major strength of this method was that it helped to interpret and explain the quality of the policy as well as its effectiveness from the perspective of the policy makers. The major weakness is its tendency to overestimate the rational characteristics of policymaking and underestimate the aspects of politics, social interaction, conflicting rationalities and interests (Runhaar et al 2006).

The value-critical policy analysis method was *client-oriented*. This client-oriented evaluation, as called by Vedung 2005) considered the goals, expectations, concerns, and needs of the target population as its organizing principle and criterion of merit. At the heart of the client-oriented evaluation is the question of whether the policy/program satisfies client concerns, desires or expectations (Vedung 2005). The belief is that consumer pressures expressed through attitudes toward service delivery will lead to the improvement of service delivery and increased consumer satisfaction. This approach also fosters participation enabling the policy targets to voice their complaints and desires to the service providers and to some extent take responsibility for service content.

One of the advantages of the value-critical approach is that it requires teasing out the value biases and frames of reference lying behind the social problem analyses and policy or program designs (ideology, causation) some of which may be conflicting within themselves and also with the values of the implementers. One limitation of this approach is the difficulty to replicate the study because coming to judgment about policy adequacy is a value-laden enterprise. However, policy analysts argue that the policy analyst should not be apologetic on this because "a judgment that would be somehow neutral, is hollow in that human judgment must use value criteria as a foundation" Chambers (1993:70).

## 4.1.3 Quantitative and qualitative paradigms triangulated

This study used both the quantitative and qualitative paradigms in *triangulation (Brannen 1992)*. It combined methods of data collection, theories, trans-disciplinary knowledge in social science and public health, as well as different types of data to generate relevant questions and answers to the research question.

The research question was operationalised by three specific objectives. The study objective relating to the household experiences with malaria, perceived causes of malaria, and actions taken to restore health, used quantitative data collection methods. Data collection was preceded by defining study variables and variable categories and also counting of people experiencing different experiences. The quantitative household survey generated quantitative data. The objective that investigated the organizational capacity and opportunities at the local level to plan and implement malaria control policy, and the third one, which assessed the capacity of the malaria control policy to contain the problem of malaria, used qualitative data collection methods. They in turn generated qualitative data. The differences between the two paradigms is best described by Brannen (1992:4) who indicates that: "the qualitative researcher looks through a wide lens, searching for patterns of inter-relationships between previously unspecified set of concepts, while the quantitative researcher looks through a narrow lens at a specified set of variables".

Method triangulation took on the form what Brannen (1992) calls the *between-methods*. This is the use of different methods in relation to the same object of study as against the *within-method* which involves use of different methods on different occasions (Brannen 1992). For example, the analysis of policy involved use of both the analytic descriptive method (from the top-bottom) as well as the value-critic policy analysis method (bottom-up approach). Generally the data sets generated through the use of multiple data collection methods *complemented* each other (Brannen ibid) thus helping to enhance understanding of the study problem in a broader manner. There were a few instances where use of multiple methods *integrated* data with resultant enhancement of internal validity. An example is where households reported that one of the barriers to health care seeking was inadequate drugs in public units. This was verified with a study of the drug stock cards in public units. Another example of complimentary data collection is where health unit managers and other significant people were asked about their malaria control activities followed by a study of their annual plans and budgets as well as resources.

The different methods used to collect the data yielded different data sets. The qualitative methods generated prose and textual data; while the quantitative methods generated numerical data organised around variable and variable categories. The variables acted as the vehicles or means of analysis (Brannen 1992). Both paradigms were given equal emphasis during data collection and analysis. Likewise the study used multiple theories (Chapter 3) which were applied to the findings. The combined methods and theories ran through the analysis and write up of the thesis.

This study was partly social science and partly public health. This implied use of multiple investigators or working in partnerships with public health scientists. The study was however, carried out by one person because of her previous training in clinical epidemiology and participation in public health, health policy and systems research. In this case, therefore, trans-disciplinarity knowledge and capacity worked equally as well as multiple investigators. The single investigator was able to understand concepts and issues in both social policy as well as public health and epidemiology and bring them to bear on the study findings.

Major challenges in triangulation were: - a) the existence of *obtrusive* observations associated especially with the quantitative household surveys. Rubin and Babbie (2001) characterize *obtrusive measurements* as those which make the study subjects aware that they are being observed making them act in an atypical manner in order to convey a socially desirable impression. In this study, respondents were asked about their malarial experiences in their under-fives and how they managed uncomplicated and severe "malaria". Some of these questions might have triggered social desirability attitudes and *social desirability biases* (Rubin and Babbie 2001). This might have been aggravated by the tendency to introduce the research team as medical workers visiting to teach the community about malaria. Possible negative effects were nullified by observations of the same subject using different methods. Any possible lies from households would be offset by reports on the same households by the community antimalaria drug distributors or the local leaders.

A second challenge relates to the use of qualitative methods. During the data collection phase, triangulation of methods was mostly *complimentarily* and not *integrative* (Brannen 1992). This threatened the attainment of internal validity especially in the situation of private practitioners where no other method (other than the in-depth interviews) was used. The concern of qualitative approach with the "unique interpretation of events" (Creswell 1994:159) also limited their generalisability for use in assessing policy

adequacy. Nonetheless, the triangulation of methods, data sets, and theory helped to overcome many of the weaknesses of a single method.

### 4.1.4 The data collection and analysis phases

The study was designed and actually implemented in 3 phases notably the developmental phase, the implementation phase, and the analysis/thesis writing phase. The developmental or first phase involved undertaking consultations with experts in health policy, malarial research, and environmental management; reviewing malaria literature, and policy documents. Lots of time was spent in the Ugandan Ministry of Health National Headquarters in Kampala; in libraries and internet within Uganda and in Sweden. During the first phase, explorations were made to find out the concepts used in malaria assessment by the households, and general experiences with malaria. Qualitative findings were used to construct the survey tools used in the primary data collection phase.

The second fieldwork phase involved undertaking data collection first it Mukono district, (the principal study district) followed by Mpigi district (the validation study district). While in each district, household surveys were done together with unstructured interviews with other health care systems. This fieldwork phase in Mukono and Mpigi districts involved use of both the quantitative and qualitative methods simultaneously and consecutively. In both districts, investigations were done first at the household to describe and quantify malarial experiences. This was followed by enquiries into health care system malaria control practices and threats using both qualitative and quantitative techniques. For example, investigations of the services offered by the community antimalarial distributors was simultaneously accompanied by a study of their registers to determine the actual number of children who obtained homapaks in the last 12 months and their characteristics. Information on malaria management and constraints in government health units was followed consecutively by a study of the medicine stock cards managed by pharmacists and store keepers. This triangulation helped the study obtain broad and in-depth information on different aspects of the research question.

The third phase (value-critical analysis and thesis writing) involved a comparison of the identified household and community level disease control needs and critical values with the provisions of the disease control policy for purposes of assessing its adequacy. The write up of this thesis was done gradually after each phase and synchronized in the last phase.

## 4.1.5 Independent and dependent variables of the study

There was a constellation of dependent and independent variables of the study at different stages of study. Each study objective had its own set of independent and dependent variables. Broadly, the independent variables for the value critical policy analysis were the needs, values of the households, people's construction of the problem of malaria and health system implementation challenges. The dependent variables were the policy choices in terms of strategies, service delivery structures, actors, and resources and ability to address the concerns and challenges of implementation. In other words, policy adequacy is influenced or dependent upon by the people's needs and values, as well as health care system implementation challenges.

The phenomenological study also had its set of independent and dependent variables. The independent variables included:-the social demographic characteristics of the household heads such as sex, age, educational levels, occupation, household location notably the district and urban/rural locations. The dependent variables included the experiences of uncomplicated, and severe malaria in under-five children, deaths and disability; perceived causes of the malaria generally and causes of the different degrees of severity and outcomes, general perceptions of the operations of the different health care systems (both public and private); treatment and prevention actions undertaken to control malaria in the under-five children. The study objective which assessed the organizational capacity and opportunities at local levels to plan and implement the malaria control policy also had its own set of variables. The independent variables included the level of health care system; while the dependent variable were: knowledge of the malaria control policy, existence of malaria control plans, resource availability and quality; and activities undertaken to control malaria.

## 4.2 Generalisability of findings

Although the study was carried out in two districts of Buganda Region (Central Uganda), with similar social cultural setting, values and practices, there are reasons to believe that the study findings relating to household experiences with malaria and health care seeking are generalisable to the rest of Uganda. First of all, the two districts are malaria endemic (medium to high endemicity) and thus the findings are generalisable to malaria endemic areas. The study findings are also generalisable to other areas in terms of practices and values, and needs because of three other reasons. First, earlier studies (Chapter 3), and especially the mostly recently conducted Uganda Demographic Health Survey (UDHS 2006) indicates that there were no significant differences in practices relating to health care seeking and treatment of malaria country wide. Significant differences were found with the prevalence of fever/malaria between regions and urban/rural locations. Other practices such as percentage of persons seeking care from a health unit, use of antimalarials and antibiotics were not significantly different. The second reason is the similarity of the social service delivery structures, and the macro social economic and political contexts which are similar. The health care systems throughout Uganda are the same with few variations; with some having more public units, NGO units, or private for profit units. Mukono and Mpigi were able to capture this distribution well. Thirdly, Mukono and Mpigi district host people of all ethnic backgrounds from Uganda making the two to appear like they are miniature Uganda. Fourthly, the two districts represented the rich and poor districts; urban and rural areas.

### 4.3 Area of study

### 4.3.1 The study districts

This study was carried out in two districts of Uganda: Mukono and Mpigi (Please see the maps of Uganda and of each district at the beginning of this thesis). Both Mukono and Mpigi district are located in Buganda, Uganda's central region. The two districts are malaria endemic with medium to high transmission. Within these two districts, 4 sub-counties and 2 town councils participated in the study. The sub-counties were:- Ntenjeru and Seeta Namuganga in Mukono district; and Nkozi and Kabulasoke in Mpigi District. The town councils were Lugazi and Mpigi.

Mukono district was the principal study district, while Mpigi was chosen to validate the findings of Mukono. Mukono District was chosen because it is one of the Ugandan districts with the highest GDP index of  $0.504^{24}$  and a life expectancy of 48.9 years. The Mukono District adult literacy index is 78.8%<sup>25</sup> (UNDP 2007a). Mukono has three distinct geographical locations: an urban, rural, and "hard to reach" islands of Buvuma. This structure has implications for service organization and policy. It is a "miniature Uganda" in the sense that it hosts people of different ethnicity from all over Uganda thus being representative of the social cultural practices influencing malaria and other disease control practices in the country. Mukono district was one of the first thirteen districts to be decentralized in the late 1990s being given the powers to plan and implement centrally-made policies in accordance with local level needs and capacities.

Mpigi district was chosen to provide depth to the understanding of the household malarial experiences and control practices in a malaria endemic area. It was chosen to represent the poor districts of Uganda. It was purposely chosen because it has a peri urban and rural areas, social-cultural mix, and physical environment similar to Mukono district. It is, however, poorer than Mukono District. The GDP index of Mpigi is 0.448, much lower than Mukono's and the average of Uganda (UNDP 2007a). The life expectancy of the people of Mpigi is estimated at 38.02 years while the adult literacy rate is estimated to be 68.3%. Major economic activities are agriculture, fishing, and pastoralism. Mpigi district was decentralized in the same time period as Mukono. The choice of Mpigi district increased the power of extrapolation of the findings to the rest of Ugandan malarial endemic areas.

### 4.3.2 Administrative profile, population, and health care infrastructure

By 2006, when this study was done in Mukono, the district had 4 counties, 28 subcounties and 136 parishes; with as a population of 807,923 of which 142,438 (17.6%) were children 5 years and below and 187,967 households. The counties were Buikwe, Buvuma Islands, Nakifuma, and Mukono. The district had 4 town councils of Lugazi,

<sup>&</sup>lt;sup>24</sup> The GDP index for Uganda as a whole is 0.466 (UNDP 2007a:123)
<sup>25</sup> The adult literacy index for Uganda is 69% (UNDP 2007a:123)
Njeru, Mukono and Nkokonjeru. About 17% of the people in Mukono district live in its urban areas (UBOS 2002).

Again, by 2006 Mukono district had a total of 79 health care units out of which 53 were government-owned and managed while the remaining were NGO/private (DHO 2006/2007). Out of the 79 units, 6 were hospitals; 4 were health centre level 4; 24 were health centre level 3; while 45 units were health centre level 2. Some of the hospitals in Mukono District are Kawolo, Nyenga, Nkokonjeru, Naggalama, and SCOUL.

By mid 2007, Mpigi district had 4 counties, 16 sub counties, and one town council of Mpigi. The counties are Gomba, Butambala, Mawokota South, and Mawokota North. The total population was estimated at 407,790 with 88,654 households, and 73,291 (17.9%) being under five children. About 2.5% of the people in Mpigi district live in its urban area (UBOS 2002). At the time of this study, Mpigi district had a total of 62 health units: 2 hospitals of Gombe (government) and Nkozi (NGO); 2 health center level 4; 29 health centre level 3; and 29 health centres 2. Health units continue to be built at the sub county level and also parish levels.

Mukono Town Council, the administrative base of Mukono District is located about 16 kilometers east of Uganda's capital city of Kampala; while Mpigi Town Council, of Mpigi District is located about 34 kilometers to the west of Kampala. Both districts have communities adjacent to Lake Victoria. They have many swampy areas that produce mosquitoes. The rural people are engaged in the major economic activities characteristic of Uganda namely agriculture, fishing, and pastoralism. Being near Kampala City where construction is a vibrant industry, the people in both districts are engaged in trades like brick-making, sand-digging, and stone-quarrying. These create burrow pits which are good breeding sites for mosquitoes, making the communities susceptible to malaria.

#### 4.3.3 Study sub-counties, parishes, and villages

The study was conducted in a total of 4 rural sub-counties and 2 town councils; 24 parishes and 48 villages. (See maps at the beginning of the Thesis). Two of the sub-

counties in each district were rural while one was urban. Out of the 24 parishes which participated in the study, 13 were in Mukono district and 11 in Mpigi district. The actual names of the studied parishes, number of villages and households studied in each sub county are indicated in Table 1A in the appendix.

#### 4.4 Study population

The study involved the participation of three categories of people: (a) primary child carers in households with children aged 5 years and below; (b); health care unit managers and resource persons in the communities, and c) political and technical leaders of districts and sub-counties. All these categories were sources of primary information.

The primary child carers in households were meant to give information on their experiences with malaria among the under five children and to help construct the malaria problem. The community health care resource persons comprised of the community volunteers who distributed antimalarials to sick under-five children in their villages. The health unit managers treated febrile children presented at the health units. The purpose of engaging these resource persons was to obtain information on what they did to manage malaria, their challenges and constraints in implementing the existing disease control policy.

The third group involved political and technical leaders in charge of villages, parishes, sub-counties, and the districts. The technical persons who participated in the study at the sub-county levels were the administrative officers (sub-county chiefs), community development officers, health assistants, and environmental officers.

The health assistants are based at the sub-county levels and are responsible for improving sanitation and mobilization of communities for health promotion and prevention against all illnesses and diseases. Community development officers are social workers based at the sub-counties and district. These are responsible for planning at the sub-county level and fostering development of households and communities through mobilization and empowerment. Other roles of the community development officers are gender mainstreaming and social protection of the vulnerable and marginalized population groups in the community. They are the specialists in community management issues

bridging the gap between the communities and other specialized departments in the subcounties such as public health, environment, and agriculture (Ministry of Gender, Labour and Social Development 2003).

At the district level all the district health team members participated in the study. These gave information on the general health programs in the district and the position of malaria control in their plans and budgets. At the district level, the study engaged other technical people including the Director of Community Development Services, the Environment Officers, the in-charge of NAADS (National Agricultural Advisory Services). At the national level, several Ministry of Health Officials in charge of the malaria control program and malaria researchers participated in the study.

## 4.5 Sample size calculation for the household survey

A sample size was calculated for Mukono District, the principal study district using the formula below. First of all it was assumed that the incidence of malaria in under-five children would be 0.64 (CDC website). This formula was used.

$$n= \frac{z^2 P(1-P)}{d^2 + \underline{z^2 P(1-P)}}$$
N

Where z = standard normal distribution value corresponding to 95% confidence interval (1.96)

P=incidence of malaria in Uganda (0.64)

d=tolerable error (5%)

N= Total number of households in the two districts (Mukono 187,967 and Mpigi 88,654).

Therefore sample size (n) = 
$$(1.96^2 * 0.64 * (1-0.64)) / 0.05^2 + (1.96^2 * 0.64 * (1-0.64)) / 276621$$
  
=354

With an expected 10% non-response rate = 10% \*354 = 35

The sample size for the number of households calculated for study is:

n = 354 + 35 = 389 households for both district

The distribution between the two districts was done proportional to the households in each district. Therefore, the minimum total number of households calculated for study in Mukono was 264 while that in Mpigi was 125.

During the actual sampling, about 6% of the primary child carers of households or their spouses were not available and were instead replaced with a neighbouring home.

## 4.6 Sampling procedure

4.6.1 Sampling procedure of the studied sub-counties, parishes and villages

The studied sub-counties were purposively selected by the district health officers (DHOs) or the district malaria focal persons. The criteria used to select these was the existence of relatively higher prevalence and incidences of malaria. Many of the sub–counties were also located near water bodies and swamps, which are good habitants for mosquito breeding and malaria transmission.

A multi-cluster random sampling technique was used to select the parishes, villages and households. A list of parishes and villages were obtained at the sub county headquarters and town councils. With the help of the Community Development Officers or senior parish chiefs, a simple random selection of between 3 to 6 parishes was done proportionate to the population size of the sub-county. Thus, Ntenjeru sub-county, the largest in Mukono District contributed 6 parishes to the study. Others had 3 or 4 parishes participating in the study. (Table A1 in the appendix lists the parishes which were sampled and studied).

In the two town councils of Lugazi and Mpigi the sampling method changed slightly to accommodate the need to include communities and populations of varied socialeconomic backgrounds. Thus, in Lugazi Town Council, the Town Clerk added the parish of Nakazadde to the two randomly selected parishes so that the poor people who are most affected by malaria and its costs could be covered. In Mpigi Town Council the Mayor insisted that the parishes of Lwanga and Bumozi should be studied if the study results were to be useful to the Town Council. These parishes used to belong to a peri-urban sub-county of Mutuba I which had just been merged with Mpigi Town Council. It is now under town council governance although it is still quite rural in outlook. It is referred to as a "rural – urban" community. A total of 24 (49%) parishes out of the existing 49 in the selected sub-counties were studied. A total of 48 villages participated in the study, of which 30 villages or clusters were in Mukono District and 18 in Mpigi District.

The selection of urban areas especially in Mukono District (which has 4 town councils) was purposively done. The criterion used was the existence of a hospital and big health problems like injuries which regularly compete for the same resources with malaria. Lugazi Town Council was chosen because of its location on the Jinja-Kampala highway and the high incidences of motor vehicle accidents which are handled by Kawolo Hospital (a unit located in the Council). A town council like Lugazi has also another peculiar attribute which is the existence of industries. It was thought that there would be a lot to learn from Lugazi regarding sensitivity to planning and resource mobilization for malaria control by the industries. In Mpigi District, there is only one town council and this one was automatically included in the study. Just like Lugazi Town Council, Mpigi is also located on the Masaka-Kampala highway and was equally reported to experience and manage high incidences of motor vehicle accidents.

The selection of the villages was also randomly done proportionate to the number of villages in each selected parish. This was done by the sub-county officials who were assigned to work with the research team.

## 4.6.2 Sampling procedure of the households

The Chairman of the village (LC1) provided a list of households with children aged 5 years and below. In most villages there were lists of such homes which had been generated in the course of distributing insecticide treated nets at the end of 2006 through the beginning of 2007. There were some situations where the person with the register was out of the home. In such cases still another leader in the village was asked to map the village. He was asked to cognitively follow different directions, small roads and foot

paths of the village, and recollect all the names of household heads by location and develop a list of homes with under-five children.

The specific household to participate in the study was selected using a systematic random sampling technique with a random start. A sampling interval was first of all determined by dividing the number of households with an under-five child (population size) with the sample size of 10-12 households (sample size for the village). Figures between 1 and the resultant sampling interval figure were written on pieces of paper and using a lottery method, one number was chosen. This became the first household to be selected from the village household register. An average of between 10 and 12 households were selected from each village to participate in the household malaria experience survey. The total number of households in each study sub-county was determined by the size of the population. Villages with a higher population took a proportionately larger representation of households in the sample.

The study team was introduced into each household by a local village leader who most times was the chairman of the village council (LC1). Although the introductory letters obtained from the Administrative Officers of the districts, introduced the team as researchers from Makerere University, the leaders instead described us as health workers who had come to teach them about health issues and particularly malaria (*translated in Luganda as "bano bebasawo baffe abazze okutuyigiriza ebintu ebikwatagana n'omussujja mubaana, betwabagambako"*). To the local leaders, this introduction was perceived to be more appealing with subsequent generation of cooperative attitudes and provision of valid and reliable information. This might have, however, created systematic error<sup>26</sup> or biases by the respondents giving information which they thought the team wanted to hear. The direction of the systematic error created was however not easy to ascertain. Nonetheless, the triangulation of data collection methods mitigated the problems generated by the systematic errors.

<sup>&</sup>lt;sup>26</sup> Systematic error is a wrong result due to 'bias'- that is sources of variation that distort the study findings in one direction. Systematic error can occur during sampling or observations/measurement (Hulley and Cummings 1988:9).

In some few homes<sup>27</sup> especially in Mukono District, research assistants found more than one wife with a number of under-fives. In such cases, one wife was selected to participate in the study. Again in households with more than one under-five child, one of the children was randomly selected for the study.

## 4.6.3 Sampling procedure of the health units /managers

The studied sub-counties did not have very many public health units to choose from. For example Ntenjeru Sub-county had only 3 public units. All health units in selected parishes were studied and also an attempt was made to make sure that each level of health care was represented in the study. So in situations where a certain level of health care was not situated in the selected parishes or sub-county, the researcher reached out to them. The case in point was the involvement of health centre levels 4 of Naggalama and Maddu. These units oversee health programs in their constituencies (county) and are located outside the studied sub counties of Seeta Namuganga and Kabulasoke respectively.

A total of six health sub-districts (HSD) were involved in this study. These were: Mukono South, Buikwe West, and Nakifuma in Mukono District. The HSD studied in Mpigi District were Maddu, Mawokota South, and Mawokota North. The selection method of health units was, therefore, more purposive combined with a census perspective. A total of 11 public (Government and NGO owned) health care units of different grades were involved in this study. Out of these 11 units, 7 were in Mukono District and 4 in Mpigi. Higher levels of health care visited were: Kawolo Hospital, Naggalama Hospital, SCOUL/Mehta Hospital, Nkozi Hospital, Kojja Health Centre 4, Mpigi Health Centre 4, and Maddu Health Centre 4. The health care units which were studied in the sampled sub-counties of Mukono and Mpigi districts are shown in Table A2 in the appendix. Generally most health care units in the studied sub-counties were visited and studied regarding the malaria control activities, resource availability, capacities, partnerships in the fight against malaria, and constraints.

<sup>&</sup>lt;sup>27</sup> Research assistants estimated such homes to number about 5 in Mukono district. This phenomena was not come across in Mpigi District.

Each study location is also served by a number of private clinics and drug shops which are not reflected in Table A2. A total of 4 private clinics/drug shops which were commonly reported as being used by the households in the treatment of malaria were visited in different areas. Of these, 2 were in Seeta Namuganga, 1 in Lugazi Town Council, and 1 in Kabulasoke.

#### 4.7 Actual sample and population characteristics

4.7.1 Number and distribution of households which participated in the study

Interviews were conducted in a total of 543 households of which 359 (66.1%) were from Mukono and 184 (33.9%) from Mpigi district. The actual number of households which participated in the study far exceeded the minimum sample calculated of 354 because of a desire to reduce on the random error<sup>28</sup>. Also the resources of time and funds permitted such decisions. The number of households which participated in the study in Ntenjeru, Seeta Namuganga sub-counties, and Lugazi Town Council of Mukono District were 169, 104, and 86 respectively. The number of households which participated in the study in Kabulasoke, Nkozi and Mpigi Town Council were 72, 52 and 60 respectively. The majority (73%) of the studied households were based in the rural areas while 27% households lived in the urban areas of Lugazi and Mpigi Town Councils. These findings are summarized in Table A3 in the appendix.

The majority (86.2%) of the households were headed by men and the remainder 13.8% by women. There was no child-headed family in the study areas. The majority (69.3%) of the female headed families were found in the rural areas of the districts while 30.7% lived in the urban areas. Almost all the male-headed households (99.4%) had a spouse (a wife). In female headed households, only 3 women (4%) had a spouse.

The total number of people in the households was 3504 of which 1060 (30%) were children under five years. The minimum number of people living in the studied households were 2 while the maximum were 22. As expected, rural households in both

<sup>&</sup>lt;sup>28</sup> A random error is a wrong result due to chance – 'unknown sources of variation that are equally like to distort sample and observations in either direction'. Random error can be reduced by increasing the sample size (Hulley and Cummings (1988:9).

districts tended to have relatively larger families than urban households. The minimum number of under-five children was 1 and the maximum 8; the median was 2 and mode 1. About 45% of the households reported that there was a woman in the household who had a pregnancy in the last 12 months preceding the study.

#### 4.7.2 Age, education and occupation of the male household heads

Details of the socio-economic characteristics of the household heads are summarized in the Table A3 in the appendix. The majority of the male heads of households were aged between 30-49 years old. The youngest male-head was 19 years while the oldest in the entire study was 100 years. The mean age of the male-head was 37.8 years, and median 36.00.

The majority (93.8%) of the male heads of households in both districts had some formal education, with just 6.2% not having been to school. Generally, the household male heads in Mukono were relatively more educated than their counterparts in Mpigi district. A larger percentage of male-heads in Mukono had secondary, and university education compared to those in Mpigi. Just 3.8% of the male-heads in Mukono did not have any education compared to 11.2% in Mpigi.

Many male-heads of households were engaged in either subsistence farming or trade. Mukono District tended to have more male-heads in the trading activities (41.9%) compared to 27% in Mpigi District. Most male-heads (54.1%) in Mpigi and 35.6% in Mukono District depended mostly on agriculture for their livelihood. This could be explained partly by the fact that the study involved many fishing villages on landing sites like Katosi where although there is agriculture, the main source of income is either fishing or trading. Incomes from farming tend to be seasonal compared to trading activities with implications on the financial availability in homes.

#### 4.7.3 Age, education, and occupation of the female household heads

Most females who were heading households were aged between 30 and 69 years. The mean age of the 73 female-heads whose age was known was 44.7 years with a median of

46 and mode of 50 years. Most (69.3%) female-heads had primary level of education. Compared to the male-heads, the proportion of female heads without any education was almost three times. None of the studied female-heads had any university education. The situation was not much different between districts.

Most (65.3%) of the female heads studied were engaged in subsistence agriculture. The proportion of female household heads involved in agriculture was higher in Mpigi than in Mukono. Many women heading households in Mukono depended on trade for their livelihood. This is partly attributed to the many households on the landing site of Katosi which participated in the study in addition to those in Lugazi Town Council.

#### 4.7.4 Age, education and occupation of the spouses

Most of the spouses (52.4%) in both districts were quite young aged between 16 years and 29 years. There were few spouses aged 70 years and above. The mean age of the 466 spouses in male headed households was 30.2 with a standard deviation of 8.52. The median was 29.0 and mode 30.0. Most spouses had attained primary level of education. Only one was a University graduate while some 8 spouses had obtained some tertiary training in a college.

Most (61%) of the spouses were engaged in agriculture as their leading source of livelihood. A relatively larger percent (78.2%) of the spouses in Mpigi district were engaged in subsistence farming compared to 53.1% of the spouses in Mukono district. Mukono district also had some 5.9% of the spouses who were employed in organizations and were salaried. In Mpigi no spouse was reported to be employed outside the home. Also trading activities were engaged in by 19.1% in Mukono district compared to just 7.5% in Mpigi district.

## 4.7.5 Characteristics of the respondents

The majority of the respondents (90.8%) were female being the spouses and mothers in the homes. In some 14 homes the respondent was both the male head and spouse. The youngest respondent was 17 years while the oldest was 87 years of age. The mean age

was 32.7 years and median 30.0 years. Where two people, a male and a female participated in the study in the home, the age of the oldest of both was calculated.

#### **4.8 Data collection methods and instruments**

As has been indicated in section 4.1.3 quantitative and qualitative data collection methods were used to collect data. The quantitative methods principally used the survey method with the sampled households. The qualitative methods were interviews using open ended unstructured interviews; and document reviews. Each of the methods used is described in some detail below.

#### 4.8.1 Household interviews using a structured questionnaire

Interviews using a pre-coded questionnaire were applied to 543 households face to face. Considering that women knew more about the health of children than men, the household interviews were conducted with females -- the mothers or caretakers of the under five children. Most of the respondents (493; 90.8%) were female being the spouses, mothers and health care managers in the homes. However, in 14 homes where both the husband and wife were found, both participated in the interviews.

The choice of engaging individual households in this study was because sickness is culturally regarded as an individual experience, beset with feelings, beliefs, decisions, actions and resources unique to each individual household. Furthermore, it was considered that the response rate would be higher if each primary child carer were interviewed face to face and individually. It would be difficult for the household to turn down a researcher who had been introduced to them by their local leader. Observations of the household environment could be made and inconsistencies in answers corrected through feedback questioning, probing and prompting.

Ideas that informed the household questionnaire were obtained during the very first exploratory phase done in Ssumbwe village<sup>29</sup>, Bulenga, Wakiso District 9 miles from

<sup>&</sup>lt;sup>29</sup> This village was chosen purposively because of ease of mobilisation of the households by the researcher's sister who was a leader in the village.

Kampala. This was a qualitative in-depth study conducted with 5 households. It explored the incidences of illness from malaria in homes, mothers' perceived caused of malaria and different degrees of illness and their manifestation; the persons and ages most affected; the actions taken by the mothers to manage fevers especially among their underfives and also among the adults. Health care seeking activities and challenges, treatment resorts, prevention actions were also explored using unstructured questions. Local terminologies that describe malaria disease and illness were also explored. There was an understanding of the health care service organization and their challenges.

Subsequently, the household survey questionnaire was designed using the following themes: a) risk construction of malaria, b) experiences with severe malaria among the under-five children; c) experiences with mild malaria; d) roles and capacity of household members to handle "malaria" in the under-fives; e) experiences with referrals; f) experiences with health care systems in the management of malaria; g) preventive activities against malaria in the home and community; h) information and health education on malaria; and i) resources for malaria control. The questionnaire was precoded using ideas obtained from Ssumbwe mothers and also the literature review.

These themes and specific questions comprehensively addressed important issues under specific objective 1 which investigated the experiences of households with malaria. Questions under themes (e), (f), (g) and (h) above also furnished some answers for specific objective 2 which investigated the organizational capacity and opportunities at local level to plan and implement the malaria control program. The second objective was approached using the voices of both the service consumers and also the health care service providers themselves. The analysis of answers to the above two specific objectives helped to answer specific objective 3 and the research question.

The household interviews were conducted mostly by two trained research assistants. The principal researcher conducted just a few in each village before managing in-depth interviews with community leaders and health resource persons. The interviews were conducted in the Luganda language, the language mostly spoken by people in the study

districts. The recording of answers, (especially to open-ended questions) was done in English.

While the questionnaire was useful in coming up with quantifiable information, it was limited in the sense that many people had a lot to tell in their own words including feelings about their interactions, satisfactions and dissatisfactions with the different health care systems. Some of these issues had not been well addressed in the interview schedule, despite its length (about 25 pages). The common practice was for the interviewer to indicate the qualitative statements verbatim in the margin of the questionnaire. There were also instances where responses could not easily fit the coding scheme provided. For example, in one question, the respondents were asked to *rank* the health care systems they utilized when the child's illness progressed from mild to severe. It was hoped that a rational guardian of a severely sick child who initially got treatment in the private clinic would take a non-responding child straight to a higher level of care such as health center 3, 4 or 5. But it was discovered that some people moved from one clinic to another and this response had not been anticipated creating data entry problems and reliability since such cases were not counted but were reported on qualitatively.

One major lesson learnt was the inability of a researcher to conceive of all possible responses especially when studying experiences of people which are characterized by very unique perceptions, feelings, values, capabilities, differentiated problem solving repertoire, and opportunities.

## 4.8.2 Semi-structured interviews with significant people in the community

Interviews using open ended semi-structured questions were conducted with 138 significant people as indicated in Table A4 in the appendix. These included Ministry of Health officials at the national levels and also technical and political leaders at local levels totaling ten in number. National level actors included staff managing the Malaria Control Program and also researchers in the areas of malaria and environment.

At the local government level, the significant people included LC1 leaders, parish leaders, community drug distributors, village health teams (in Mpigi district where this structure exists) sub-county chiefs, community development officers, health unit managers, HSD managers, district health officers, and Secretaries for health in districts. Some of these were decided on before the data collection exercise started while others were identified iteratively as the data collection exercise progressed. For example, some private clinic practitioners were picked on after they had been mentioned by the household heads as being their sources of help in the treatment of malaria in children.

Many respondents in the community occupied a number of leadership positions in their communities. For example, one member could be an LC1 leader, a parish leader, and a chairman of the Farmers Forum under the NAADS Program. In such a situation the respondent's experiences and perceptions were explored in his or her different positions. Out of the 138 in-depth interviews 107 were conducted in Mukono district while 31 were done in Mpigi district. Thirty nine of these people (28%) were health workers.

The issues addressed in the unstructured questionnaire emanated from the information obtained from the literature review and discussions with the Ministry of Health Officials at national headquarters. Interviews with the latter were conversational in nature but with a purpose and structure (Kvale and Brinkmann 2009).

Generally, issues addressed with these informants related to the activities undertaken to control malaria, the resources committed for malaria control and their perceptions regarding the persistence of child morbidity and mortality due to malaria. Issues discussed with the health unit workers included: reported cases of malaria in the last 2 years compared to other diagnoses, resource availability (especially drugs for treatment of malaria), processes of obtaining antimalarials, prevention and promotion activities undertaken in the unit and the community. Units were also asked about plans and budgets and whether and how they prioritized malaria in their plans.

The data collection tool for the district health officers included issues like: the epidemiology of malaria in the district, budgets and resources for malaria control, organization, communication and culture for malaria control efforts, science and research, malaria surveillance, monitoring and reporting. The district level tools also contained questions generated from interviews with the community which required clarifications. Examples were the observations that people perceived some antimalarials manufactured from certain countries to be less effective; the issue of opening and closing hours of units; staff housing problems and so forth.

The data collection tool for national level health officials covered malaria epidemiology for the whole country, social responses, organization of malaria control activities, funding, research, surveillance and monitoring as well as capacity building.

## 4.8.3 Document reviews

Key documents which were collected and reviewed were the malaria control policy documents, the national health policy and strategic plans. The malaria control policy documents reviewed included:-

- The Uganda National Malaria Control Policy (September 1998)
- Malaria Control Strategic Plan 2001/2-2004/5
- National Policy on Malaria treatment (September 2005)
- Policy and strategy for Insecticide Treated Nets (March 2003)
- The Malaria in Pregnancy Control Strategic Plan: Intermittent Presumptive Treatment (IPT), Case Management and Insecticide mosquito net use (2000)
- Strategy for Home Based Management of fever /malaria in Uganda (2001)
- Uganda Communication Strategy for malaria 2005-2010 (Draft 3 May 2005)

These documents were obtained from the Ministry of Health Resource Centre in Kampala. Other documents reviewed consisted of published and unpublished research literature on malaria, development issues and statistics. At district level, documents comprising of monthly and quarterly reports, annual work plans, and drug stock cards were reviewed.

The main source of published articles was the internet. The researcher used search codes like "malaria control", "malaria treatment", "malaria prevention", "child survival", "bed-nets" to retrieve materials from the internet. Besides the internet, a lot of other research material on health and Uganda was obtained from the Nordic Africa Institute in Sweden, the United Nations Development Program in Kampala, the National Environmental Management Authority (NEMA), and the Uganda Bureau of Statistics. The unpublished materials on malaria were obtained from known malaria researchers and the Malaria Consortium. Other sources of documents were: the sub-county headquarters, the health sub-districts, and district health departments.

#### 4.9. Piloting the study

The study was piloted in 20 households of one village called Ntazi, located in Ntazi Parish, Ntenjeru sub-county, Mukono district. The pilot study was done not only to evaluate the items on the household questionnaire; but as Warwick and Lininger (1975) argues, to assess the adequacy of the sampling instructions, the quality of the interviews, the effectiveness of the field organisations, the likelihood of controversy arising from the survey, the rate and reasons for refusals, the cost and lengths of the interviews, and the overall appropriateness of the survey method to the problem at hand.

The pretesting also helped in understanding what Smith (1975) calls the social, spatial and temporal maps of the study area. The social map refers to the persons, roles and channels of communication, status hierarchies, and so on. The spatial map locates the where of persons, events, power, organizational segments, and channels by which persons and resources pass from one location to another. The temporal map deals with the when of people and events. This mapping helped in a number of ways. First, it helped to identify the boundaries and substance of the forthcoming data gathering. Secondly, it helped to concretise on the sampling strategies and identification of the type of persons to mobilise the households to participate in the study. Thirdly, it helped to organize the time and movement schedules of the research team in the community during field work. Fourthly, it helped to identify potential problems to be expected such as demanding time schedules, and problems of hierarchical communications. Fifthly, it helped to judge the magnitude of the research task ahead. Sixthly, the mapping acted as a means of introduction to the type of people the study team will be working with later on.

Specific evaluation issues addressed with regard to the questionnaire was whether and how the study population understood the study purpose, and whether they felt comfortable answering the questions. Special attention was put on the wording of the questionnaire items. There was concern whether the wording was clear, whether the respondents drew the same meaning from them as the study designer; whether the answers obtained were adequate for purposes of the study; and appropriateness of the close ended responses. There was also concern whether there was so much variety in the way open-ended questions were designed such that they would make answering and analysis difficult. The pilot study also attempted to find out whether there were local expressions that needed to be incorporated into the items to avoid ambiguity.

Major changes done on the questionnaire involved focusing the tool on malaria among the under-five children. The sampling strategies were also modified to reflect this. Earlier it had been thought that the study would focus on both the children and adults but this was proven unnecessary and an inefficient way of using scarce resources. Many questions which had been left open-ended were also closed. Attitudinal statements measuring peoples' perceptions of the health care delivery systems were also refined. Unclear, ambiguous, double-barreled, leading, abstract, sensitive and threatening questions were all corrected.

Another outcome of the pilot study was the development of an interviewers' manual. The manual covered the purposes and background of the study; a Luganda translation version of the questionnaire, and instructions on how to sample. This manual proved extremely useful later as the study lost the first two research assistants leading to the recruitment of two new ones later on.

#### 4.10 Training of research assistants

Two research assistants a male and female were recruited to help with collection of information from the households. These were mature social science graduates with experience in doing interviews. They were trained for 2 days before the pretesting exercise was done at Makerere University. Training continued as they participated in the improvement of the household survey questionnaire and during the data collection period especially during the debriefing exercises.

Broadly, the initial training involved communicating factual information about the objectives of and uses of the study; familiarizing the interviewers with the questionnaire in general and with the specific objectives of each question; how to ask the question both in English and Luganda, and how to record the responses. During the training, the team also reached agreement on administrative procedures to be followed in the field; and standard procedures for dealing with difficult situations.

The first set of interviewers completed the first sub-county of Ntenjeru, Mukono district. One of them got a permanent job and left as the team was moving to the second rural subcounty of Seeta Namuganga. The new person was trained by the principal investigator for one day and further helped by the fellow research assistant. As the team was entering Mpigi district, again the second research assistant who had been on the initial team also got a job and left leading to recruitment of a replacement and training.

## 4.11 Data management and analysis

Three types of data were collected: (a) the quantitative primary household survey data, (b) the qualitative primary data from community leaders and resource persons etc, and (c) the qualitative textual data in the form of policy documents. The sections below describe how primary and secondary data (both quantitative and qualitative) was managed and analysed.

#### 4.11.1 Management and analysis of *primary quantitative* data

Most of the questions on the household survey tool had been pre-coded. Therefore, the first step in managing it was to give identification numbers to each questionnaire from 1

to 543. A data entry program was designed by the principal investigator herself in the Statistical Program for Social Sciences (SPSS) data editor (Norušis 2004). The household survey data was entered in the computer by two data entrants one handling even-numbered questionnaires and another handling odd- numbered forms.

To eliminate errors created during data entry and field work the researcher cleaned the data. Data cleaning was done mostly by running frequencies of each variable. It involved moving between the entered data and the original data. After doing the data cleaning, frequencies and also cross tabulations between independent and dependent variables were run. Since the household questionnaire was big, the analysis was done section by section and written up. Hypotheses which kept popping up guided the choice of variables to be cross tabulated. Analysis also involved transforming variables (i.e. ratio variables into nominal; and collapsing likert scale variables into "summary" variables), that is, desired categories which could then be cross-tabulated.

Data was analyzed using SPSS statistical program. To determine the prevalence of mild and severe "malaria", frequencies and proportions were generated. The relationship between the prevalence and each demographical, social, economic, environmental and infrastructural factor was assessed first by generating contingency tables from which chisquares and significance values were computed. Factors that had p-values associated with the chi-square of less than 0.200 were then subjected to a logistic regression model with backward elimination method to generate adjusted Odds ratios, Confidence intervals and chi-square values. The factors which had p-value of less than 0.050 were considered statistically significantly associated with the prevalence of either. The backward elimination method was used because of the presence of already known factors associated with the prevalence of fevers and outcomes (severe malaria and deaths).

## 4.11.2 Management and analysis of primary qualitative data: Thematic analysis

The unstructured interviews with community leaders, and health unit managers generated voluminous prose data in the form of written notes. The main methods used to make sense of the data collected were: (a) thematic analysis, and (b) stakeholder analysis.

Analysis basically started in the field being interwoven with the field work research processes. Ideas were picked, interpreted and general impressions made in the course of data collection. This was enhanced by the daily morning debriefing sessions conducted with the research team where key findings were identified.

Thematic analysis involved a process of organizing the data set manually, sorting, and coding. The data set from different sub counties and town councils was written in different books. The note books were first of all marked with the names of the sub-county from which the data originated. Within each notebook was information from different actors such as local leaders, community drug distributors, health unit managers, sub county chiefs, community development officers and health assistants. Data relating to each respondent sub group was marked with stickers of different colours. Thereafter, similarities and differences of actions, practices, events were identified. This is what Miles and Hurberman (1994) calls open coding. For example, one similarity observed in the information collected from the community drug distributors in both study districts was that most of them were no longer or had reduced distributing homapaks for underfive year old children.

Thereafter, the analyst looked for patterns in the data set. This involved identifying the frequencies with which some idea was mentioned; as well as the magnitudes, structures, processes, causes, and consequences (Lofland and Lofland (1995). For example, while following up the issue of the break down of the HBMF strategy, the researcher looked out for the reasons or causes of this problem, the processes (whether this has been the case since implementation of the HBMF strategy in that community); the magnitude of the problem (e.g. drug stocking practices) frequencies (e.g. number of CDDs interviewed who reported that they were no longer distributing the drug), and the consequences. These formed coding categories in themselves. Each of these codes was scrutinized to ensure that each one was fully elaborated and delineated. The categories were compared and central one identified which provided a theoretical point of integration for the study; something called "selective coding" by Miles and Huberman (1994). Coded ideas were

straight away entered in the findings section relating to the pertinent theme. Illustrative evidence was quoted verbatim and put straight in the report.

## 4.11.3 Management and analysis of textual qualitative data: a discourse analysis

The textual data in the form of malaria control policy was analysed using two methods namely, "critical discourse analysis", and "reconstruction of policy theory".

Using the critical discourse analysis (CDA) technique, the study considered three aspects when looking at the malaria control policy documents: - the context in which the policy or text was produced; the way it was received; and, the details of the text itself. The context of the policy included rationale for the provision of health for all. The analysis looked at the language used within the text; the ideology, and power relations behind the production of the text. It was, for example, found that although the policy was produced by the government of Uganda as expected by the Constitution, it is influenced by internationally generated values like that of the human rights. An identification of the producers, consumers of the policy and distribution methods of the documents was also done. A study was made of how the documents were structured and organised. The analysis also identified the words, ideas or themes reiterated in the document (Harfall 2000, Crowe 2005, Wodak and Meyer 2007, Gee 2005, Fairclough 2007).

The malaria control policy is constituted by 7 documents. Each document was studied separately and common themes identified and recorded in a matrix. Subsequently all the documents were studied and common themes identified and vocabulary identified. For each of the common themes observed in the documents such as goal, objectives, strategies, service delivery structures, and financing, the researcher looked out for common patterns in the messages, meanings of the text and underlying assumptions. The analyst also looked out how major concepts were constructed, indicating ideas or themes given more attention or prominence and those left out. The analyst also distilled the underlying values and assumption of the ideas or themes, how reality was represented and social relations constructed in the text.

The ideas in the texts were compared with the illness/disease control needs and critical values identified during the household and community surveys. Omission or gaps in policy as well as inconsistencies were identified. Text analysis involved re-reading the text several time to search for patterns along with their possible functions and consequences. The seven malaria documents reviewed had different discursive structures which made analysis difficult.

Using the reconstruction of policy theory or the goal attainment model, the study identified the policy objectives, the policy problem, and the problem perception upon which the policy rested (Runhaar et al 2006). Some of the questions addressed by this method were: what argumentation underlies the policy problem definition? How do the policy makers envisage that the instruments chosen will solve the problem? What assumptions do they have? This method was augmented by ideas of Ross and others (2004). The analysis was concerned with questioning the extent policy addressed organizational issues such as how the target population was to be reached and the way it addressed resource issues for policy implementation.

One major advantage of using discourse analysis was its ability to reveal opinions, attitudes and underlying value judgments helping to do what Chambers calls a *value critical analysis*. Its major limitation was the limited generalisability of the results. As Runhaar and others (2006:49) observe, "the post-modern tradition in which discourse analysis fits suggests the absence of universal 'truths'; representations of the world are therefore unique".

## 4.12 Quality Control

A number of measures were undertaken to make sure that the data collected was of the right quality in terms of validity and reliability. The measures comprised recruitment of experienced research assistants and training them; pre-testing the household data collection tool and close supervision of the data collection and computer entry exercise by the researcher herself. The research assistants and also the principal investigator spoke Luganda the local language fluently and were therefore able to effectively communicate with the respondents.

The entire research process from conceptualization, questionnaire design, data collection, data analysis and thesis writing were supervised by university professors. For example, they input in the questionnaire design and also made visits to the field to make sure data was properly collected.

#### 4.13 Organisation of the data collection exercise

The household survey was conducted sub-county after sub-county. Within the subcounty, the research team visited village after village. Within each village all the household and the in-depth interviews were conducted before moving to another village. The interviews with the household heads were all done in the respective homes. This proved to be an efficient way of using the single transport the team had and ensuring supervision and control of the two research assistants. Data collection was first done in Mukono District before moving to Mpigi District. Data entry and analysis started as soon as the household survey was completed in Mukono District.

Prior to going to the study sub-counties, the researcher obtained permission from the National Council of Science and Technology and also the respective Chief Administrative Officers of both districts. The District Heath Officers identified the study areas and further introduced the research team to the health unit managers. The sub-county chiefs or their representatives further introduced the team to the LC1 leaders. They also worked out an itinerary of travel in the sub county. In most of the studied sub-counties the research team worked with either the community development officers or senior parish chiefs. These moved ahead of the team to mobilize the communities.

#### 4.14 Ethical issues

This study was approved by the Faculty of Social Science Higher Degrees Committee an institutional ethical and review board. This ensured that the study was ethically and technically sound before finally being approved and registered by the National Council of Science and Technology.

As Rubin and Babbie (2001) observe, social work research represents intrusion into people's lives, making people participate in activities they never called for and thus

taking a large proportion of their time and energy. Social work research also "often requires that people reveal personal information about themselves, information that may be unknown to their friends and associates" Rubin and Babbie (ibid: 74). Indeed this study was not devoid of these problems and threats to the respondents' dignity and rights.

However, these problems were mitigated through use of a number of strategies. Upon entry into the household, the researcher told the household head about the purpose of visiting (that she was doing research on malaria in under-five children). The researcher further explained the purposes, procedures of the study, length of the interview and benefits of the study. The benefits of the study were to generate information to improve health planning for the good of all the people of Uganda. They were assured of confidentiality. The names of the household heads were not recorded on the questionnaires. Instead each questionnaire was given an identification number which was used to analyse the collected information. All these issues formed the preamble of the household survey tool and guided the respondents in making informed consent. The researcher asked whether the head of the household was willing to participate in the study. Verbal consent was received before the interview was executed. Participation in the study was voluntary. Instructions given to the research assistants who interviewed the households were that they were to leave the household which was not willing to participate and replace it with another one.

On the whole people were very cooperative except in two instances in Mpigi district where the participants were very difficult and the research assistants nearly terminated the interviews mid-way. One particular respondent was, however, known to be a very difficult person to the leaders in the village whenever there was a discussion of government programs. Otherwise, most households felt privileged to have been chosen to participate in the study.

Questions relating to the benefits to the individuals rose now and again, during and after the household interview. Also institutions like the health units asked how they were going to benefit and whether they will be accessed the findings of the study. The common answer was that research was meant to help understand and explain public problems and to guide planning for society; and that the accruing benefits may not be seen soon, but later. The researcher had not articulated the benefits of the study to the individuals other than the societal benefit.

Nonetheless, it was evident that those individuals who participated got an opportunity to ponder and think through issues relating to the management of fevers and malaria in the under-fives and entire household which they would not have done had they not participated in this study. They also got to know the cost effective alternatives for prevention of malaria. At the end of the interviews, the researcher engaged some respondents in some reasoning why they needed to invest in bed-nets by showing them the economic benefits compared to treating recurrent attacks of fevers in children. Many concluded the interviews with words of gratitude implying that they had benefited from the interaction. There were also psychological benefits to households arising from knowledge that malaria was a common problem in the country and it was not just their household which was suffering. At the end of each household interview the respondent was also given a chance to ask questions on malaria related issues. Questions which the team could ably handle were answered thus enhancing the respondent's learning.

Some of the issues raised in the study created awareness of the institutions of local government as well. For example, some sub-county chiefs noted that while malaria was highly related to poverty, the local government officials did not talk about malaria control as part of the "let every body get rich national campaigns" ("bonna bagagawale") which were being conducted at the time of the study. This, they observed constituted a "missed opportunity". This was explained that it was due to failure of the government to make malaria a cross- cutting issue like gender and environment. There were, thus, direct and indirect benefits to those who took their time to participate in this study.

It was, however, observed that it was difficult keeping anonymous the positions of the community leaders and managers of the institutions who gave qualitative information. This is especially true where there was one officer occupying a certain position in a

district. Difficulty in hiding his identities when the researcher quoted his/her statements in the report was a big threat to confidentiality.

Managing tragic stories of dead children was also problematic. Rubbin and Babbie (2001:76) rightly observe that some things researchers ask questions about in social work research "may be a source of continuing personal agony for the subject". There were a few households whose under fives experienced severe malaria leading to death. One such family had ever lost three children. The mother kept crying now and again. The researcher kept pausing until the respondent regained strength to continue the interview. The researcher also commonly made counseling remarks like "I know it should be difficult for you to bear …". Because such case studies took a long time to interview, very few such cases were ever followed up.

#### 4.15 Other problems experienced during data collection

The study experienced a number of problems some of which were anticipated while others were not.

- 1) The project had a high attrition rate of research assistants. One research assistant who had taken part in the pre-testing and improvement of the household survey tool got a job mid way and left. The principal researcher recruited and trained another person to fill her place. After data collection in Mukono again the second research assistant whom the researcher started with left the project and another person had to be recruited and trained for Mpigi district. All these offset the project in terms of time. The quality of the data was not affected because the new assistants were highly experienced and were supervised.
- 2) It was difficult to find household heads at home during the day in the urban areas especially in the industrial Town of Lugazi, Mukono District (in wards like Lower Kabowa and New Colony). It was also difficult getting a home having an under-five in these industrial locations. The problem of absences was addressed by revisiting the home until the household head or the spouse were found. In homes where there was no under-five child the research assistants changed the sampling technique from a systematic random sampling to an accidental sampling.

- 3) Obtaining interviews with the government officials in both the Ministry of Health and district health department was slow leading to great delays in data collection because appointments were rarely respected by the officers.
- 4) There were great difficulties in doing field work in rural areas. Some selected villages were quite isolated and physically difficult to access. Some areas like Ntenjeru has many forests and the research assistants moved with strangers through the dense forests in search of a randomly selected household. Both the female and male research assistants reported developing fears of having to move with strangers through a forest where there were no telephone networks. Sometimes there were long distances between one selected household and another. Community leaders sometimes assisted by riding the research assistants on bicycles or motorcycles. Motorable roads were also very dusty and bumpy (especially in Ntenjeru). These broke the vehicle used by the research team a number of times which ended up interrupting the field work schedule.
- 5) Replacement of selected households was done in a few instances because of the sickness of the primary care givers in some households or being away for various reasons (e.g. away in church/mosque, market), or not having an under five child.
- 6) Because of the research design used, it was difficult to make concrete conclusions about the relationship between some independent and dependent variables. This was because both the outcome and process had taken place at the time of the interview. The reader is cautioned on this and in some places it is recommended to replicate aspects of the study using prospective observational studies.

## CHAPTER FIVE

# HOUSEHOLD EXPERIENCES AND CAPACITIES TO CONTROL MALARIA IN UNDER-FIVES: EMERGING NEEDS FOR POLICY

This chapter presents findings of the household experiences with malaria in the underfive children. It specifically reports on the incidences of mild and severe malaria, as well as adverse outcomes – disability and deaths. It presents findings relating to households' capacity to do their own risk analysis of the problem of malaria; their construction of the problem; and the actions taken to manage malaria in under-five children. Assessment of household capacity to control malaria is further done by analyzing the actual health care seeking processes, and resources existing at household level to manage the illness. This chapter also presents findings comparing malaria problem construction done by the households with the constructions done by the technical people – the health workers.

Interpretations and discussions of the findings are done concurrently. To ease the discussions, the study uses concepts picked from Chapter 3 and these are presented in italics. The findings in this chapter are based largely on information collected from the 549 household heads triangulated with information from health workers and community leaders.

#### 5.1. Risk perception of the malaria problem by households and significant others

Generally, most people were knew the bio-medical and economic causes of malaria but could not articulate the social causes and especially that of powerlessness. They could ably assess the sources of mosquitoes within the households and in their immediate environments in the community. This was evident in their answers to the question regarding whether malaria was a problem in the household; to which 88.6% reported in the affirmative. In Mukono district, 92.5% reported that malaria was a big problem. A comparable 81.0% in Mpigi also indicated that malaria was a problem.

Malaria was uniformly perceived as a big problem in the rural areas of both districts. Significant differences in the perception of malaria were, however, observed between urban and rural communities. About 77% of the rural communities reported that malaria was a problem compared to 24% of the urban communities. Likewise there were significant differences in the way malaria was perceived within the different locations of Mpigi but not in Mukono District. In the rural areas of Mpigi over 80% of the households reported malaria to be a big health problem compared to 63% in Mpigi Town Council. Malaria was significantly reported to be a bigger problem in the urban areas of Mukono District than in urban Mpigi.

The problem of malaria was manifested in frequent illnesses of young children, persistent visits to health units, high costs of seeking medical care, under-five disability, and deaths from malaria. In accordance with the constructs of the "health belief model", it can generally be concluded that people perceive themselves and their children to be *susceptible* to malaria.

The respondents' risk perceptions were further gauged by asking them a knowledge question about the main sources of mosquito breeding sites around the house and in the community. Each sub-county and village had its own unique environmental risk factors. These varied with the location's physical geography, land use, dominant economic activities, household waste-water management, and general sanitation. Many (36.4%) reported that the main sources of mosquitoes were the swamps, river(s), forests, lake, tall grass, and the uncultivated fields or bushes near homes.

We are surrounded by swamps. The biggest swamp of Rwajjali and Ssezibwa is scarcely cultivated and therefore not a big concern. The problems emanate from the tributaries which are cultivated with rice and yams.... There is a lot of sand digging in this subcounty. I do not know how many sandpits we have, but I am certain these retain water for long unless filled. There is also alot of block-making; but the pits get filled with silt in a short time (Counselor and Speaker of Seeta Namuganga Sub County, Mukono District).

In Ntenjeru and Seeta Namuganga sub-counties, the major risk factors were the marshy areas surrounding the communities. The return of the hyacinth weed on the shores of Lake Victoria and flooding were reported to stagnate water, creating breeding grounds for mosquitoes. These were observable in many landing sites like Katosi in Mukono District. Another 19.5% of the respondents indicated that the sources of mosquitoes were plantations of banana, coffee, vanilla, sugar cane, and maize. In Lugazi Town Council, for example, respondents from SCOUL attributed the mosquitoes to the sugar plantations located very near the staff housing units, poor domestic sanitation, and poorly drained roads.

Sugar cane plantations were planted too near the housing units. The murram road stagnates water which in turn breeds mosquitoes. The bathing shelters are bad; they do not drain because they lack soak-pits. Colleagues' complaints and my petitioning the company for improved bathing shelters has been fruitless. The existing trade unions are not addressing our (bathing shelters) issue. I once checked in the OPD register of our hospital and found that my village had the highest number of people suffering from malaria (Camp manager, SCOUL Lugazi Town Council, Mukono District)

Malaria is highly prevalent in Mukono because of sugar canes, forests and bushes...In Najjembe area, there are many cases of epilepsy possibly due to malaria. (Health worker, Kawolo Hospital, Mukono District)

In our low-lying area, tap water which has no where to drain creates breeding sites. Water collects and stagnates causing mosquitoes to breed. Yes, we go to health units because we are surrounded by hospitals but constant medication weakens the body. The nets cannot be entirely depended on... Should a child enter a net at 6.00 p.m. when the mosquitoes start biting? The Town Council sprays the drainage systems and sometimes the houses but after two days many more mosquitoes are seen. Mosquito breeding sites are now our biggest problem" (Head teacher Mehta Nursery School, Lugazi Town Council).

It was observed by leaders in the SCOUL camps (Mukono District) that although treatment services were available to SCOUL employees, "malaria will continue to be a problem because treatment services and bush clearing were not moving together" (Ag. Camp Chairman, SCOUL, Lugazi Town Council). Insecticide resistance was reported to have resumed in places like Lugazi Town Council. Occasionally, the Council sprayed houses and mosquito breeding sites but they were seen soon after usually after two weeks. Other perceived mosquito breeding sites in both districts were:-full latrines; stagnant water near homes; broken pots; garbage; empty tins, sewage systems which were rarely sprayed, polythene bags (ebiveera); flowers; tank tops; rain harvesting tanks, and dams. Burrow pits created especially after digging sand were also perceived to be major sources of mosquito breeding sites in both districts.

There are also many pools of water created after digging up sand. They do not fill-up the pits. Land owners never bother to get the pits filled-up. Besides, some landlords reside outside the village. The LC leaders have not enforced the laws requiring filling up of pits.

These leaders have never considered a village mobilization to fill-up the pits. In any case villagers would justify their uncooperativeness by saying that they have never created the pits (CDD Bunakijja, Mukono District).

Pits in block fields were considered less dangerous since they quickly got silted. Having the youths<sup>30</sup> to fill these up was considered infeasible because the block-makers needed plenty of water during block-making.

In Mpigi District, there was a phenomenon of bushes in unutilized land belonging to absentee landlords. Respondents indicated that village residents could not just tamper with such bushes. In animal-husbandry locations, like Kabulasoke Sub-county, cows reportedly carried home mosquitoes from the grazing areas.

The existence of bushes owned by absentee landlords like that of Kabuusu makes it difficult for people to fight mosquito breeding sites. How can I clear bushes which do not belong to me?(Respondent in Bukunge Village, Nkozi subcounty, Mpigi District).

Most people in Kabulasoke Sub-county are pastoralists who let bushes grow in order to feed their cows. They lack training in reducing mosquito breeding zones (Sub-county Chief Kabulasoke, Mpigi District).

To further ascertain the respondents' ability to do their own risk analysis, they were asked about the factors that enabled mosquitoes to enter their houses. The responses were grouped into two categories: a) poor quality houses, and b) behavioural factors such as not closing the house early in the evening. There were no significant differences in the answers given by respondents in both districts. These factors were confirmed with logistic regression analysis.

In the entire study sample, 24.7% reported that their houses were not strong enough or completed to stop mosquitoes from entering. This reflected the role of poverty in malaria causation. In Mukono district 26.8% affirmed that they slept in poorly constructed or uncompleted houses versus 20.1% in Mpigi district. There were no significant differences in the responses regarding housing quality between urban and rural locations of Mukono District with 21% and 28% of the respondents respectively, reporting sleeping in uncompleted or dilapidated houses. Contrary to the findings in Mukono District, there were significant differences between rural and urban responses in Mpigi District with a

<sup>&</sup>lt;sup>30</sup> Most of block or brick making is done by young men in most communities.

higher percentage of 24.3% of respondents in the rural areas compared to 7.9% in the urban complaining of poor housing. Reported housing quality was independent of the sex of the household head. Housing quality was not related to the education nor occupation of the male household head in both districts.

It was observed that many houses were either new or being constructed using both permanent and semi-permanent materials. Most houses had not been properly completed. Some houses (both permanent and semi-permanent) had not been well-sealed at the top. Some had holes in the walls which had not been filled-in after construction and removal of building ladders. Some 13.5% respondents confided that their houses lacked shutters (especially windows). Such homes improvised by putting things like iron sheets, dry bananas, papers, and cloth among (others things) in the window-space to minimize coldness at night but not control mosquito entry into the house. Some doors were fixed in such a manner that they left space at the bottom when closed. About 49% of the respondents mentioned that the ventilators of their houses had holes or no screens to protect against mosquito entry. There were no significant differences in reported ventilation quality in both districts. While the quality of housing could be attributed to poverty, some community development officers (CDOs) indicated that there was laxity by household heads to improve their houses and household sanitation. Households reportedly did not care to improve their environments because "they have got used to malaria" (CDO Mukono District). Indeed, it was observed that many of the holes in the walls of houses and poor ventilators could be improved at no or negligible cost.

About 40% reported that they did not close their doors and windows "early" enough to reduce mosquito entry in houses during the evenings. This figure constituted of those households with good and bad shutters and ventilators. There were significant differences in the practices of closing doors between urban and rural respondents with more delayed closure in the urban than rural households. This study did not obtain information on the average time households closed houses. The practice of closing houses early in the evening was independent of the age and education of the male head and the spouse.

Although respondents perceived their children and themselves as being at risk of malaria and were cognizant of the severity of malaria, their actions to reduce mosquito entry and reduce malaria transmission were not in harmony with perceived risk. This could partly be due lack of what is referred to in the health belief model as a *cue-to–action* or a stimulus to trigger appropriate behaviour or to low motivation. Whether sub–counties have programs to stimulate households to improve housing standards for purposes of malaria control cannot be answered in this Chapter; but is an issue of discussion in Chapter 7.

Respondents were further asked how malaria was transmitted from one person to another in the household and community. This question was meant to help understand respondents' knowledge of the disease, *a structural variable* in the health belief model. Sixty nine percent indicated that human malaria was caused by a mosquito bite. In Mukono and Mpigi District, 70% and 66.4% of the respondents respectively, affirmed that a mosquito bite caused malaria. There were significant differences in the responses given by respondents from the rural/urban areas and individual sub-counties of both districts regarding the role of mosquitoes in malaria transmission. Table 2 shows the findings.

District	Location	"Yes, mosquitoes cause		Total	P-value
		fevers/ malaria"		(n)	
		(Frequ	iency) (%)		
MUKONO	Rural	164	64.0	255	0.000
	Urban	67	89.3	75	
MPIGI	Rural	75	67.6	111	0.619
	Urban	24	63.2	38	
MUKONO	Ntenjeru Sub county	90	57.7	156	0.000
	Seeta Namuganga	74	74.7	99	
	Lugazi Town Council	67	89.3	75	
MPIGI	Kabulasoke	38	56.7	67	0.010
	Nkozi Subcounty	37	84.1	44	
	Mpigi Town Council	24	63.2	38	

Table 2: Number and proportion of respondents who associated malaria with mosquito bites in the rural and urban areas of Mukono and Mpigi districts

The respondents who associated malaria with mosquitoes reported that there were always numerous mosquitoes in their communities. Some ridiculed the campaigns to prevent mosquito bites using insecticide treated bed-nets because mosquitoes started biting children as early as 6.00 p.m. before bedtime. In other words, children were at risk of malaria because of what Rogers (2003) refers to as the incompatibility of the ITN technology for malaria prevention with the practical living circumstances of many children. Although most people knew that malaria was caused by mosquitoes, others were ignorant and hardly differentiated mosquitoes that transmitted malaria in humans from other non-infective ones. To most respondents all mosquitoes carried malaria. Some mosquitoes were described as either "quite big shaped and long-legged", or "small and black".

Other things associated with "malaria" by the households were: sharing a bed, space or cups; sleeping in unwashed beddings which had been used by a malaria sick person, drinking un-boiled water, HIV/AIDS, worms, cold and coughs, wounds, measles, syphilis, coldness due to rain, and eating dirty things. Many reported that malaria was seasonal, while others associated it with mangoes and maize.

## 5.2 Risk construction of the malaria problem by households and significant others

Household respondents gave a number of reasons why malaria was considered a big problem. The reasons included perceived *severity* or seriousness (physical, and socioeconomic consequences of the disease); existence of many mosquitoes; and *barriers* or *access* problems in health care seeking. The *barrier* reasons consisted of long distances to health units, inadequate supplies of antimalarials, poor quality antimalarials, and inadequate blood supplies for transfusing anemic children.

Some villages reported that they did not have any health care unit, public or private. Several respondents traveled as far as 6 kilometers to reach a unit, a distance that exceeds the 5 kilometers aspired for each community by government. Although the government has a formula for distributing health units in the country following the administrative governance units<sup>31</sup>, it had not yet completed the construction of the units at all the levels as planned. The distribution of the private for profit health units did not seem to have a

<sup>&</sup>lt;sup>31</sup> These are: regions, districts, counties or constituencies, sub-counties, parishes, and villages (also see Chapter 2).

pattern nor a formula making some communities to be over-served while some were underserved. Thus, some communities suffer from what Gwatkin (2000) refers to as an *inequality-inequity* problem in service distribution. Long distances to health units necessitated walking, spending much money on transport; and/or not seeking health care at all from professionals. Another problem that arose from the *inequality-equity* problem was that some people sought health care late as it took time to mobilize money for transport and medical care. This was especially true with many villages in Ntenjeru Subcounty, a relatively huge and underserved sub-county in Mukono District at the time of this study. The *inequity* problem in the distribution and access to health units in some communities may partly explain *stressors* like the severe child illnesses and deaths in some communities.

The severity of the malaria problem was reportedly aggravated by the irregular availability of antimalarials in public units, and perceived higher costs in the private clinics and drug shops. Some respondents complained of inadequate blood supplies to transfuse anaemic children in hospitals. Many health workers concurred with many of the lay people's observations, and yet seemed powerless to do anything to improve resource availability and quality for the services they offered. A statement like the extract below was common in the studied communities.

Malaria is a problem due to inadequate supplies of antimalarials in our government health care unit of Seeta Namuganga. Government does not supply enough. Antimalarials exist in private clinics and drug shops but may be expensive for many people. The cost of fever treatment in an under-five child from a private clinic in this place is between  $3000/=^{32}$  and 3500/=. Seeta Namuganga is an agricultural place whose major crops and livelihood from coffee, bananas, and cassava have been badly affected by diseases (CDD Seeta Namuganga).

There is no blood in the peripheral health units and many aneamic children are sent to Mulago Hospital. On arrival at Mulago, the child is usually dead (Private Practitioner, Kasawo)

Lack of essential inputs like antimalarials and blood threaten case management perpetuating malaria *severity* and child mortality. It was reported that in situations of lack of antimalarials, the health workers diagnosed and gave the sick child a pain-killer (such

 $<sup>^{32}</sup>$  Uganda shillings 3000/= was equivalent to US \$1.85 (exchange rate was about 1620/= to one dollar by June 2008).

as aspirin or paracetemal), then sent the primary care giver to the market to buy the prescribed medicine. For various reasons particularly poverty, some mothers only administered the aspirin and never bought the prescribed medicine. This action facilitated the progression of the child's malaria to severe conditions. At the time of this study, government policy was universal "free" provision of health care services. Making mothers to buy medicines from the market in a situation where the services are meant to be obtained free of charge indicates the existence of *policy implementation failure*. Chapter 6 provides empirical evidence to the household assertions regarding the inadequate antimalarial supplies in public units.

Some significant people attributed the incidence of malaria to the poor quality antimalarials which were available in their communities.

The drugs given to treat malaria no longer work unless you go to other places outside the sub-county. But the cost involved in going to Kasawo is 4000/= return. Gimbi 1 has one private clinic and some people recover while others don't (Chairman, Gimbi 1, Kituula parish, Seeta Namuganga.)

A perception that the drugs given in the nearest health care systems are "not strong enough" may threaten the primary caregiver's *self-efficacy* deterring the individual from seeking health care from the existing health care systems. The household heads may decide to resort to remedies of questionable effectiveness. Such decisions and actions may also generate more *stressors* like delayed recovery of the child, the child's illness progressing into severe forms, and a possibility of a death. The presence of non efficacious drugs was also confirmed by the health workers and is further discussed in Chapter 6.

Some respondents constructed the problem of malaria in terms of the high costs of medical care for "malaria" in sick children. Expenditures to treat "malaria" varied from place to place depending on the preferred source of health care, the distance of the chosen sources of care from one's home, and a person's ability to pay. The extract below summarises common experiences.

.... The costs of treating uncomplicated malaria for children including laboratory tests is between 9000/= and 15,000/= (US\$5.55-9.26) and severe malaria costs a minimum of 25,000/= (US\$15.43) in this parish (Chairman Katuuso LC1 and Chairman Kitale Parish, Seeta Namuganga Sub county).
Although the above statement was not made in relation to the average household income<sup>33</sup>, many respondents indicated that the cost of care and especially for severe malaria was becoming unaffordable. This was so because the main sources of livelihoods such as cassava, bananas, and coffee had been destroyed by diseases. Many people were paying for medical care from their pockets because, as indicated earlier, many public units were reported not to stock essential drugs all the time. Also some households were located far from government units where services are expected to be obtained free of charge. This defeated the human rights principle requiring government to protect its citizens from *a large-out of pocket payments* when seeking medical care in public or private health care systems. This is regarded not only as *unfair* but it creates emotional and financial *stressors* inhibiting sick children from *accessing* a full course of effective antimalarials.

Some people attested to an increased number of mosquitoes, and a chain of factors that induced mosquito breeding in their communities. Mosquitoes were reported to bite respondents and their children day and night irrespective of season (dry or wet). The numerous mosquito existence in the studied communities were mostly associated with the physical geography such swamps, lakes, and river tributaries. The quotations below best bring out the message.

Mosquitoes bite us when we go to dig (Chairman, Kituula Village, Kitula Parish Seeta Namuganga, Mukono district).

There are many mosquitoes due to water clogging... when the waves on the lake hit the shores the water stagnates in the weeds creating breeding sites for mosquitoes... People understand that malaria is a problem because of repeated visits to the health units. (LC 1 leader and CDD at Katosi Landing Site, Ntenjeru Sub county, Mukono district.)

The major reason is the many river tributaries and swamps - River Katonga. Water stagnates creating breeding sites for mosquitoes (in charge of Kifampa Health Center 3,, Kabulasoke Sub county, Mpigi district).

The above quotations demonstrate the importance attached to the *physical environment* as a causative agent of malaria by the respondents. According to most respondents (93.4%) and most significant others, it is the *habitat* which is the problem. Mosquitoes are bred in

<sup>&</sup>lt;sup>33</sup> This study did not collect information on household incomes.

the swampy places and the process is presented as natural (e.g. "waves hitting the shores"..."water stagnating"...) not influenced by humans and not controllable or preventable. This finding portrays a certain level of powerlessness of the people to manage the environment which creates the malaria problem.

One other interesting finding was that while most household respondents constructed the malaria problem in terms of the social service limitations and the habitat, health workers explained the problem largely in terms of inappropriate management practices of malaria by households. This constitutes a mismatch in problem construction between health workers and households with implications on disease control policy. The inappropriate household behaviours mentioned by the health workers were the high prevalence of self treatment, late health care seeking practices, sharing of the drugs, and poor adherence to the prescribed treatment. Child carers were reported to rely on administering pain killers to their children when they contracted fevers. When the temperature dropped they failed to give an antimalarial. "People think that panadol is adequate to kill the malaria parasite" (Private practitioner). The science of the parasite and how it responds to drugs was *incomprehensible* to many child carers. Some parents withdrew antimalarials when the child started playing or resumed the usual behaviours of sleeping, eating etc. Even in situations where a full treatment course of antimalarials had been obtained, some carers of sick children were reported to administer incomplete doses.

Other behavioural risk factors identified by the health workers included: seeking treatment from drugstores some of which were managed by incompetent workers. Reasons for reliance on drug shops were beliefs that hospitals were expensive, and poor attitudes towards hospital staff. Some children were susceptible to mosquito bites due to nocturnal household activities like staying out late or eating late at night. Households were also reported to believe in folk diseases like *ebiino*<sup>34</sup> (false teeth) and *oburo*<sup>35</sup>

<sup>&</sup>lt;sup>34</sup> "Ebiino" is a children's condition reported to present with diarrhea which does not respond to treatment. Other symptoms are high body temperature, cough, itching of the gum and frothing in the mouth. When taken to traditional healers, the false teeth is extracted or the gum is rubbed with a herb to remove the maggot (Africare 2006).

<sup>&</sup>lt;sup>35</sup> "Oburo" is a condition which affects all people but mostly the children . It is reported to present with pain below the nipple, a child feeling pain when lifted, difficulty in breathing, high temperature, and coughing. Treatment involves

(millet disease). Both of these folk diseases have similar signs and symptoms to malaria. Mothers were convinced that these were untreatable with modern medicines but rather with traditional herbs or incisors. An underlying cause of inappropriate behaviours was reported to be ignorance or what Vedung (2005) calls poor *comprehension*. Many of these qualitative judgments about household management practices were empirically verified and are further discussed in Chapter 6.

Each of the above behavioural factors had consequences on the severity of the child's illness. For example, the rampant self-treatment practices were associated with anaemia.

Many children report to health professionals late and with poor nutrition, many children develop aneamia. Young men no longer grow food for their children (Private Practitioner, Mukono district)

Rampant self-treatment and also late-reporting to professionals meant that when the child reached the trained health workers, his/her illness was already severe and unmanageable. Basing on the type of children who seek services with severe malaria in the district referral hospital of Kawolo, it was reported by the health workers that many under-five children arrived when they were anaemic due to malaria and the long standing poor nutrition status. HIV/AIDs and malaria frequently acted simultaneously, worsening one another.

Most significant others alluded to the existence of *poverty* – economic and food insecurity as sustaining under-five malaria deaths. Poverty is one factor which both the household heads and health workers mentioned as sustaining malaria morbidity and mortality. Most households were characterized as being economically insecure and vulnerable as they lacked income to sustain them for long periods. Agriculture and fishing provided seasonal incomes, making the people extremely vulnerable to shocks from illnesses. Many found the children's medical bills unaffordable, leading to delayed treatment. Selling an animal or poultry to raise funds for malaria treatment took time, procrastinating health care seeking. Poor nutrition was in turn associated with the poverty of women, and landlessness.

cutting "fatty small things" from the chest area with a razor blade or burning the chest with a hot metal rod (Africare 2006).

Many children are not well fed; 60% are moderately malnourished. Many people do not possess land but depend on wages which are minimal yet with large families. They cannot afford the right foods. When malaria strikes, it finds a very weak child; malaria parasites destroy the little blood the child has (a senior health worker, Kawolo Hospital).

It was explained that the more frequent the child's cells were bombarded by the malaria parasites the greater the probability of the child becoming anaemic. Poor people were less likely to buy a full dose of antimalarials, and were more likely to delay seeking health care. Poor people in the urban areas were also described as sleeping in overcrowded houses such that even if they were given a free bed-net they had nowhere to fix it. Also poor households tended to have poor sanitation with bathrooms lacking soak-pits. These findings were confirmed during the logistic regression analysis.

Delay in bringing children to health units was associated more with men being away at the time of the child's illness, and husbands having not left behind adequate funds to cater for illness crises. This portrays the role of economic and social *powerlessness* of women in the sustainance of under five morbidity and mortality due to malaria. While opportunities for medical treatment exist in different forms in the society, a mother may not easily take advantage of these opportunities because of lack of money. Some children may, therefore, be dying due to limited social, psychological and economic *asset endowments* of women.

Delay to seek care could also be a function of low stocks or questionable quality of family *social capital*. Some significant others argued that unlike in the situation of economic development where some families sat and discussed where and in what they were going to invest money for household development, health issues did not normally feature in the family discussions and plans. The moral fiber of the people was also reported to have noticeably changed with few people willing to assist another household financially in situations of sickness.

While in the past a neighbour could contribute toward taking a friend's sick child to a health unit, this is no longer possible. The neighbours and friends can visit a sick child admitted in a hospital to show their empathy and concern, but they initially do not contribute towards halting the progression of fever into severe illness. The initiative to avert severe illness needs to start at household level with a health plan, which is currently absent (CDO Ntenjeru Sub county, Mukono District)

This again demonstrates the problem of limited *social capital* and social support in poor communities for illness management. This study found that the respondents had more *linking* and less *bonding* for malaria control. They were linked to the public and private health care systems in the course of seeking medical treatment for malarial illnesses. Weak family and community supports (weak *bonding*) increase the risk of personal deterioration making the provision of services to vulnerable people more difficult. Many of these issues are verified in the forthcoming sections and Chapters.

#### 5.3 Experiences of uncomplicated "malaria" in the under-five children

5.3.1 Risk factors associated with uncomplicated "malaria": a bivariate analysis The survey respondents were asked whether their under-five children got "malaria" in the fortnight prior to the study. The majority of them (50.5%) affirmed that their under-five children contracted mild "malaria" that fortnight. Within Mukono District, 51.8% respondents indicated that their under-five children got "malaria" compared to 47.8% in Mpigi District. This difference in prevalence was not significant. On the day of the study, 20.6% of the households had an under-five child suffering from "malaria". Within Mukono district 24.5% of the households had sick children compared to 13.0% in Mpigi district. This difference was again not statistically different. Additionally, more rural than urban households tended to report sickness of under-five children during the survey day.

Table A5 in the appendix shows the results of a bivariate analysis relating the prevalence of reported "malaria" to important attributes of the household head and spouse, as well as the protective measures used by the family. In the bivariate analysis, uncomplicated "malaria" was significantly related to a total of five independent variables namely: rural location, low education of the household head, reported absence of good shutters on the residential house, failure to shut houses early in the evenings, and perception that "malaria is a problem". The prevalence of uncomplicated "malaria" in the under-five children reduced with increasing education of the household head and spouse. This could possibly be due to the quality of housing and varied investments in preventive measures against malaria.

There was no significant difference in the prevalence of uncomplicated "malaria" between children of male and female-headed households. Similarly, there was no difference in the prevalence of uncomplicated "malaria" amongst children whose mothers were engaged in different economic activities. However, there was a significant difference in the reported prevalence of uncomplicated "malaria" between rural and urban areas in both districts, with a higher percentage of rural household respondents reporting sickness of an under-five child from "malaria" than urban respondents.

#### 5.3.2 Preventive actions against malaria and uncomplicated malaria

Most respondents (95%) reported that they did something to protect household members against malaria infection. However, there was no significant difference between homes purported to engage in preventive actions and those not doing any preventive action. Possible explanations are discernible from Figure 1.

#### 5.3.2.1 Use of insecticide bednets and the prevalence of uncomplicated malaria

Although between 70% and 85% had at least an insecticide treated net (ITN)<sup>36</sup>, a very small proportion of under-five children estimated at between 20% and 30% in rural and urban areas respectively slept in a net the previous night. Use of ITNs was lowest in the rural areas despite having been targeted by government for free nets during a distribution exercise which had just been concluded before this study.

Several explanations were discerned for the poor utilization of nets in the rural areas. These included: ignorance, inadequate *capacity* to use preventive technology, *self regarding behaviour*, misperceptions and negative attitudes towards DDT, minimal *commitment*, limited *social capital*, inadequate *health education* and *health promotion* activities, *powerlessness*, and lack of *critical consciousness* about malaria.

<sup>&</sup>lt;sup>36</sup> This study was carried out 2-3 months after the distribution of free ITNs in the study areas. Each house with an under five child and pregnant woman had been given at least one net in most places. This therefore explains the high percentage of respondents who reported to have an insecticide mosquito net. The distribution of ITNs was mostly done in the rural sub counties.

A nursery teacher provided information demonstrating ignorance of household leaders regarding malaria, its control and prevention.

Once, I asked my children whether they slept under a bed-net. Some told me that theirs had been taken over by the parents to reduce on the insecticide in the net. Nets had been reported to cause coughs in children. This is because parents did not follow the directions given to first hang the net outside for at least two days to reduce on the insecticide. I told my children to go home crying, reject food and demand back their nets... (infant teacher at an Infant and Primary School, Ntenjeru Sub-county Mukono District).

Figure 1: Reported preventive actions taken by the rural and urban households in Mukono and Mpigi districts



Some people who got free nets from government reportedly did not use them regularly but waited until there were "many mosquitoes". This indicates limited knowledge of the vector and malaria transmission because as health workers argued, it takes one mosquito to cause malaria. Other reasons given for not using the available ITNs related to practical difficulties in using the nets as well as inadequate household *capacity -- both tangible and intangible resources*. For example, some respondents reported to have limited available space to sleep and fix a net or an extra net. Some respondents reported that they feared the nets may catch fire especially where the sleeping space was limited. Nets were

also reported to create discomfort for children. Statements like "the child never settles in a bed- net" were common. In other words, some malaria preventive technology may not be appropriate or *compatible* given the living circumstances of some poor families and children. Thus, *compatibility of technology* includes living circumstances at the time period a technology or an innovation is introduced.

A few respondents reasoned that "why should a child who is being cared for be given a net instead of me, the carer?" This is a good example of what Vedung (2005) refers to as a *self regarding behaviour*. This results in unsuccessful policy implementation and attainment of the desired social goals. The existence of the self-regarding attitudes reflects inappropriate social norms and values (*social capital*) operating at the family level; which need to be modified to ensure vulnerable family members are accorded priority in distribution of resources for malaria control and prevention.

Another limitation to using ITNs emanates from the DDT discourse which had, since the early 2000 characterized DDT as being very dangerous to human life. Respondents especially in Mukono district had misgivings about malaria control programs especially the use of bed-nets. They suspected that the nets had been impregnated with DDT.

We hear bad things about DDT from radios (CDD Kiruddu, Ntenjeru Sub county)

Yes, we know that bed-nets prevent malaria and that malaria is a problem but we need more training to explain how nets work and their benefits. For example, we do not want to retreat nets because we hear that if a mosquito falls on a retreated net it dies. So is a snake. If a snake dies, how about us? We do not want to die (Leader Beach Management Committee Buwujja LC, Ntenjeru Sub county, Mukono district).

They do not respect our advice ('Tunyomererwa nnyo') to buy nets for children. Men have a do-not-mind attitude (three women at Kakubansiri, Kabulasoke, MpigiDistrict). The existing political environment also aggravates this situation. The political opposition parties dispute everything good and bad. Most people do not think for themselves, they swallow everything political leaders say. (Information Secretary Nakazadde Ward, Lugazi Town Council).

The above statements indicate two manifest problems. Firstly, is *a conflict between implementing actors;* that is the institutions and households. Disagreements about DDT in the policy making arena and in the mass media is creating confusion among households leading to failure to use ITNS. The second problem (implied especially in the

third quotation) is the limited *social capital;* an absence of the right *norms* in homes to guide investment in malaria preventive technology. Total dependency on what politicians say even when what they say works counter to the welfare of households implies limited *self-direction and coping*. This is another manifestation of powerlessness of households. Malaria morbidity is, therefore, sustained by the inability of the many people who cannot make effective preventive choices and have control over their destiny.

Health workers agreed to some of the concerns raised in the community and attributed the *self-regarding behaviour* to limited health education on the vector, and *relative advantage* of bed-net use.

There is limited sensitization. This is the responsibility of health units which unfortunately have limited capacity...(in charge of a health sub-district, Mukono District)

At noted later on, health workers reported to give health education in outpatient departments of health units; but the education seemed not to make great impacts on the empowerment of people to control their destiny. Reasons for this status quo are explored later on.

Respondents who did not have nets gave two major reasons for not having nets: a) poverty, and b) having not been given free nets by government.

Poverty cannot allow us to buy bed nets. We do not have enough food because of drought and crop diseases. The little income we get is spent on buying foodstuffs including cassava. Cassava was destroyed by diseases (2 women found at Kyengeza, Kaabulasoke Sub-county, Mpigi district).

Poverty is unbearable. This is an agricultural area. We are not doing well because of prolonged drought. Also agriculture requires a lot of money to buy upgraded seeds of cassava, bananas (mpologoma type); dig the holes for planting, and collecting cow dung for fertilization (Ag Chairman, Kakubansiri A, Kalwanga Parish, Kabulasoke Subcounty, Mpigi district).

There were, however, people who urged that people can afford to buy bed-nets but they had their priorities upside-down or had minimal *motivation* and *commitment to controlling malaria*.

People are able to buy nets because some spend as much money on alcohol. People have poultry and pigs to sell to buy nets (VHT Kyengeza, Mpigi district)

Men are lazy, they do not want to spend on nets (2 women found at Kyengeza, Kabulasoke Sub county, Mpigi district).

Many people do not buy nets claiming poverty, while nets cost as low as 5000/=; and yet when their child falls sick they spend more. You cannot say that you will not seek treatment because you are poor. ... People do not discuss health issues in their homes including the educated ones (Information Secretary Nakazadde Ward, Lugazi Town Council).

While some households cannot genuinely obtain money to invest in ITNs, others are just *unwilling* to contribute to primary prevention against malaria. Inappropriate values held by most men who control resources in households and lack of *critical consciousness* of the socio-economic impacts of malaria appear to be important factors hindering malaria prevention. On the other hand, many women who are *conscious* of the malaria problem and may be willing to invest in preventive measures, lack the necessary financial resources and the power to allocate resources for disease control in most homes. Whether the policy and disease control program addresses these social and economic issues is something addressed in Chapter 7.

Attitudes of dependency on government to distribute free ITNs assumed also that once a bed-net got torn, it would be the same government to replace it. In turn this assumed the existence of a reporting and responsive system enabling households to report torn ITNs to government; and for the government to have the resources to replace them. However, this situation may be too ideal to exist in poor countries like Uganda. Nonetheless, the last chapter assesses the extent provisions for such structures and services are addressed in the malaria control policy.

#### 5.3.2.2 Other preventive methods and uncomplicated "malaria"

Households were struggling with the problem of malaria by using whatever tools they considered effective. Other preventive methods used by households included: burning mosquito repelling coils; keeping the environment free of tall grass or floating water; use of non-insecticide nets; and spraying houses. Others were boiling drinking water; covering the child well at night; preventing the child from eating dirty things; keeping the household clean and hygienic; removing broken things and empty tins from near the house; pouring motor oil on pools of water around the homestead; etc. Some households

smoked different things to chase away the mosquitoes. These included cedral tree branches, Christmas trees, and rubbish. Some planted neem trees around the houses.

The foregoing findings indicate limited capacity of households to choose effective actions guided by scientific knowledge of malaria transmission. Many of the actions taken to prevent malaria address other diseases like diarrhoea and not malaria. Many of the actions are not linked to the perceived causes discussed in at the beginning of this chapter. This implies inadequate scientific knowledge of malaria transmission and mitigation. For example, preventing a child from eating dirty things has nothing to do with malaria control but possibly diarrhoea and intestinal worm control. Covering the child well during the night may not be the most effective as the child's movement in bed may expose the child to mosquito bite if not sleeping in a bed-net. Some commonly used measures by households such as coils may also not be effective for long hours in the night. In other words, although malaria is a common problem, most people have poor quality knowledge about its science and effective control.

According to Figure 1, many of these preventive methods are variably used in both the rural and urban areas. They are used on a very small scale and inconsistently too. Inappropriate technology choice and inconsistency utilization of appropriate technology partly explain the malaria problem in the country. This finding confirms the health workers' assertions that the malaria problem is partly sustained by the practices of the targeted population. Whether the disease control policy and health workers discourage ineffective preventive measures is an issue discussed in Chapter 6.

Households in each district had their own choice of preventive methods. Mpigi District communities were engaged more in environmental management than Mukono District households. The choice of preventive methods seems to be influenced by the presence or absence of village health committees (VHTs). The VHTs were instrumental in distributing homapak and providing some health education for malaria prevention in Mpigi district. Mukono district did not have such a *service delivery structure*.

### 5.4 Experiences of severe "malaria" in the under-five children

Thirty six percent of the respondents in both districts reported that their under five child had severe malaria in the last 12 months preceding this study. Within Mukono district 35.9% reported cases of severe "malaria" among the under five children compared to 37.5% in Mpigi. The prevalence of severe "malaria" was more or less the same between rural sub-counties and town councils. Within the rural sub-counties, the prevalence of severe "malaria" was between 34.6% and 45.8%; while in urban areas, it was about 30%. At the time of the study only 5 under-five children were reportedly suffering from severe malaria.

Respondents were asked how the severe "malaria" presented in under-five children. The most common signs and symptoms reported by 87.8% and 75% of the respondents were convulsions and "a very hot body" respectively. Other signs and symptoms were extreme body weakness (53%); vomiting (46.4%); paleness of the body (aneamia) (13.3%); not eating (32.7%); not breastfeeding (15.8%); and body shaking (8.7%). Others were joint pain; body stiffness; coldness of the child's feet; eyes closing as if dosing; eyes rolling upwards; eyes turning inside; getting scared without cause; mental problems; and wailing. Other children also presented with a cough and cold, diarrhoea, measles, jaundice (enkaka in Luganda), sores in the mouth and swelling of the eyes and feet.

Experience of severe "malaria" in the under-five child in the last 12 months was cross tabulated with a number of variables shown in Table A6 in the appendix. At bivariate analysis, a total of 21 independent variables were found to have significant relationship with severe malaria in under-five children. These variables are marked with an asterisk. For purposes of this discussion, these variables are grouped into 6 broader groupings notably: (a) social-demographic variables; (b) household dynamics; c) community health care resource availability and utilization; d) communication between health workers and child carers; e) previous child deaths in the household. Each of these is briefly discussed below.

Children living in big families of rural areas where the mother was an agriculturalist, were more vulnerable to contracting severe malaria than their counterparts. Children living in the rural households were 1.5 times more likely to get severe malaria than those in urban areas. The differences in the prevalence could be associated with incomes, access, and differential use of health services. Urban households have better access to health services and ability to pay for services than rural households. Rural agricultural households have more difficulty obtaining cash to purchase the necessary services.

Big households with 7 members and more were 1.8 times more likely to have an underfive child experiencing a severe "malaria" than smaller households. This could be explained in terms of the big burden on the family resources leading to delayed health care seeking with resultant progression of the illness into severe forms. It is also likely that big families are less likely to afford protective measures against malaria for the under-five children. A precise cut-off point between big and small could not be determined. Nevertheless, the ROC curve confirmed that 2-6 people is a small family while 7 and above is a big one.

Households where the spouse was engaged in subsistence agriculture were 1.8 times more likely to have a child with severe malaria than those in trade or self-employment. Likewise, under-five children living in households where the head was engaged in peasant farming were 2.3 times more at risk of contracting severe "malaria" than those living in a household where the head was engaged in salaried employment. This could be attributed to lack of cash at the time the child fell sick. The incomes of farmers are seasonal and yet malaria hits anytime of the month and year in endemic areas. A higher percentage (77.2%) of the rural households most of whom are predominantly peasant farmers, reported frequent inability to raise money for the treatment of their under-five children compared to 60.8% of the urban households. Many urban respondents (36.4%) reported "never experiencing" money constraints for meeting medical costs of the under-five children compared to 18.5% of the rural respondents. There were no significant differences in the reported prevalence of money constraints between Mukono and Mpigi district respondents.

The problem of cash shortages in times of illness crises was commonly solved by obtaining treatment on credit from private clinics and drugstores. This was mentioned by 30.8%. This was followed by use of herbs (28.6%); borrowing from friends (17.4%); use of free government services (14.7%); using a homapak (5%); and selling an animal, a food crop, coffee, fish, or bricks which was mentioned by 7.3%.

There was a significant difference in the prevalence of severe malaria between children who stayed most times with the mother or father, and those who stayed with fellow children most of the day. Staying with the mother /father was protective of severe malaria since these adults quickly recognised "malaria" leading to a determination of an appropriate course of action. The risk of severe "malaria" in under-five children increased to 6.6 times when the under-five child stayed most of the day with fellow children. This was caused by the inability of the siblings to take appropriate actions. Most (78%) of the respondents reported that there had ever been an incident when their under-five child fell sick in the absence of adults. Nonetheless, because of the commonality of fevers and malaria in the studied communities, most children were reported to easily recognize fever in an under-five.

Reported absence of a community drug distributor was associated with high incidence of severe malaria. Respondents who reported that their community did not have a drug distributor were 1.69 times more likely to report an incidence of severe malaria in the under-five child than those who reported the existence of a community drug distributor. About 75% of the respondents reported that they had a community drug distributor. Nineteen percent confirmed that homapaks were always available in the community, while 43% indicated that they were not; and 37% did not know. Fifteen percent indicated "sometimes". Those who reported the existence of a CDD were possibly more likely to use homapaks.

Respondents who reported that homapaks were always available in the community were 0.61 times less likely to have their children get severe malaria compared to those who

reported otherwise. Respondents who knew that homapaks were always available were likely to use them thus halting the progression of "malaria" into severe forms. It was reported that although malaria was still the leading cause of illness in the communities, severe malaria had reduced due to use of homapaks. Likewise, respondents who had positive attitudes and considered the drug distributors to be doing a good job in the community were 0.52 less likely to have a severe "malaria" than those who had negative attitudes about the community drug distributors. A strong relationship between severe malaria and non-use of homapaks imply that the home based strategy of fever (HBMF) is useful in averting severe "malaria" and it is a program worth strengthening.

Prompt treatment of febrile conditions within the first 24 hours of onset of fever was protective of severe "malaria" among the under fives. About 85% of the respondents reported that they quickly treated their children when they got fever. The odds ratio of the relationship between prompt treatment and experience of severe malaria was 0.56 and was statistically significant.

Respondents were asked a number of questions regarding whether health workers gave them critical information regarding the management of malaria at home. Some of these questions included whether guardians were told to seek health care promptly in situations of febrile illness; the need to buy full doses of antimalarials; and how to administer antimalarials to vomiting children. Generally, health workers were reported to do the talking. However, the communication was not protective of severe malaria. For example, respondents who were always encouraged to seek health care promptly were 2.91 times more likely to have a severely sick child than those who had never been told to seek care promptly. Households which indicated that they were always encouraged to buy a full dose of antimalarials were 2.06 times more likely to report an experience of severe malaria than those who reported that sometimes health workers talked. Additionally, respondents who reported that they had ever been informed of the government's recommended actions (policy) to fight malaria were 1.6 times more likely to have an under-five developing severe "malaria" than those who had not been. Seventy four percent had ever heard about the strategies to fight malaria. Although this findings seems to contradict the above one on promptness of treatment, it was confirmed by the multivariate analysis. It would mean that knowledge on promptness of health care seeking may not be adequate until accompanied by action. Mothers who are able to seek care promptly are able to save children's lives.

There are four possible explanations why health worker/patient communication on important aspects of malaria control and prevention seem not to have great impacts on health outcomes. Firstly, health workers may be providing health education on critical issues like prompt health care seeking late when the child carers arrive at the units with severely sick children. Thus, the timing of information giving may be wrong and the information may be perceived more as a reprimand by the mothers. The perceived judgmental attitude of health workers may make the primary care givers adopt psychological defense mechanisms which threaten the assimilation of the provided information. Secondly, provision of such information leaves out many caretakers whose children are treated completely at home. Thirdly, even if the information given in clinics were to be acted on by the child carers, the information offers primary prevention to the index child, but not the entire population since it is targeted at the individual child/primary care giver. These findings highlight other intermediary variables which are important for the successful implementation of policy; notably the timing and targeting of information on policy. Fourthly, the cross sectional design of this study could possibly not isolate communication, recommended actions and outcomes (severe conditions) because the study was done when the three had already taken place.

Furthermore, households which had ever experienced a death of an under-five from "malaria" were 2.75 times more likely to experience a severe malaria than those households which had never experienced a death. This finding may however be scientifically paradoxical and may not make a lot of sense (without removing he confounder i.e. severe illness) given that severe malaria is a degree or form of malaria on the causal path to death. The interpretation of the association between severe illness and death in the family is complicated by the cross-sectional nature of the study. Nonetheless, the association was confirmed by a multi-variate analysis. In reality, some

families were found to have experienced several deaths of children associated with malaria. For example, one poor family in Seeta Namuganga Sub-county, Mukono District had lost 3 children associated with "malaria". Incidentally such homes were not followed up, monitored, or given advice on how to avert future deaths. While community drug distributors are supposed to monitor the cases they attend to, cases managed at the health units are not followed up for provision of advise, social and technical support. Health unit care stops when the index child dies. There is a disregard to other under-fives in the family who may be at an equal risk to death due to the same disease.

During a multivariate analysis, a total of 5 factors were confirmed to explain and predict the occurrence of severe malaria in a household. Table 3 shows the results. The factors are:

- Limited knowledge on rational drug use and consequences (science of drugs and malaria parasites versus practices)
- 2) Lack of money at the time the child gets ill.
- 3) An under five child living in a family of 7 people and more.
- 4) A previous death experience of an under five from malaria.
- 5) Late acquisition of knowledge on disease control policy

Question	Response	Has any child < 5 years ever had severe malaria in last 12 months?		Multivariate Results results)		(Adjusted
		Yes	No	OR	95% CI	p-value
"Non completion of antimalarial dozes may result in disease resistance"	Dont know	9	21			
	Agree	1	5	0.06	0.01 - 0.74	0.028*
	Sometimes	7	29	0.31	0.11-0.92	0.034*
	Disagree	181	290	0.48	0.21 - 1.10	0.083
Have you ever been in a situation of no money to buy medicine or take sick child to health unit	happens many times	161	227			
	has happened only once	6	15	0.35	0.12 - 1.00	0.050*
	has never happened	29	95	0.62	0.39 - 0.98	0.040*
	children do not fall sick	2	8	0.32	0.07 - 1.46	0.141
Household size	2-6 people small family	99	220			
	7-22 people big family	99	125	2.87	1.93 - 4.27	< 0.001*
Previous death experience for under 5 in last 5 years	No	176	330			
	Yes	22	15	8.50	2.76 - 26.13	< 0.001*
Have you ever been told about the govt recommended actions to fight malaria?	No	40	100			
	Yes	158	245	1.47	0.94 - 2.29	0.091*

 Table 3: Community level predictors of the prevalence of severe "malaria" in the under-five children

 : a logistic regression

## 5.5 Experience of under-five deaths attributable to "malaria"

Community level under-five deaths attributed to "malaria" in the last 5 years was 7%. Within Mukono district, 5.8% reported a child death compared to 8.7% in Mpigi. Under-five children of Mpigi were 1.5 times more likely to experience a death due to malaria, although the difference between the districts was not significant. The minimum number of under-five children ever lost by a household was 1 while the maximum was 3. Many of the under fives happened at home (42%) while 40% occurred at the hospital (health centre 5); 11% at the private clinic; 5% at the health centre 4, and about 3% on the way to the health unit. The majority of the deaths happened between 25 and 720 days after development of severe signs.

Four variables were significantly related to child deaths attributable to malaria during a bivariate analysis. These are: spouse's economic activity; whether or not the sick child is returned to the health unit for treatment; preferred source of treatment for uncomplicated "malaria"; and whether or not a child's community has a community health worker. The results are shown in Table A7 in the appendix.

Children whose mothers were subsistence farmers had a greater risk of a death (3.8 times) compared with children whose mothers were engaged in other occupations, and especially trade. About 10% of farmers' children died compared to 3% of the traders' children. This could be attributed to the limited availability of money to seek timely treatment or take up referral services at higher levels of care. The majority (87%) of the respondents whose sick children had ever been referred to a higher level of care during severe illness but resigned to go, were peasant farmers. Thirty six percent of the respondents had ever been referred to a higher level of care malaria and a majority of them (89%) heeded the advice given by the health workers.

About 15% of the respondents did not return sick children to health units for more treatment out of the 484 who had ever been told to return. Children or respondents who reported not to easily to return sick children to health units for treatment or to obtain more injections were 2.9 times more likely to die than those who were returned as advised by health workers. This means that non-adherence to health workers' advice is a big risk factor for child deaths. The reasons for poor adherence to health workers' instructions may partly be due to the absence of social *support networks* or informal helping systems to provide *support* and *encouragement* for the provider to take the child back for more treatment.

Children whose guardians preferred NGOs for the treatment of uncomplicated malaria were 5.5 times more likely to experience a death than those who preferred private clinics. This could mean two things. Firstly, it could mean that NGOs usually receive the most severe cases of malaria many of which culminate into death. Secondly, it could mean that NGOs health unit workers lack *capacity* (knowledge and skills) to handle severe malaria. However, this second assertion may need to be validated with prospective observational researches.

The bivariate analysis further indicated that children living in communities with community health workers (CHWs) were 2.2 times more likely to die from malaria than

those which did not have CHWs. This finding conflicts with the earlier one which showed that having a community drug distributor was protective of severe malaria. It is possible that community health workers might have been introduced after seeing that many children were dying from malaria. The cross sectional study design does not have the ability to sort out what happened first (the cause) and what happened last (the effect) since the study was carried out after both had happened.

A multivariate analysis established a total of three factors to explain and predict child deaths attributable to malaria in the community. These are: subsistence farming, none-adherence with health worker's instruction to return the sick child for treatment, and preference of NGO to treat uncomplicated malaria. Table 4 shows the results. One notable observation is that the risk factors for child deaths due to "malaria" are slightly different from those identified for uncomplicated and severe "malaria" except for one variable -- the spouse's occupation. Children from farming households are most vulnerable to uncomplicated and severe "malaria" as well as deaths attributable to malaria.

	Chi-	P₋ Value	OR	95.0% C.I. OR	
	square			Lower	Upper
Occupation of spouse – Agriculture	2.528	.072	2.493	.809	7.683
Do you easily return child to health unit for more treatment or injections? - <b>No</b>	7.666	.006	7.584	1.807	31.827
What is your preferred source of treatment for mild fevers in under-5? • <b>NGO unit</b>	1.393	.020	4.372	.377	50.664
Do you use insecticide bed nets to prevent malaria? – <b>No</b>	2.756	.097	.350	.101	1.209

 Table 4: Community level predictors of the prevalence of under-five child deaths attributable to

 "malaria": a logistic regression analysis

In this regression analysis, non-use of ITNs had nothing do to with child deaths. Deaths might have occurred before households obtained ITNs; or the use of ITNs might have been prompted by child deaths in homes. Whatever the explanation, campaigns to use ITNs need to be done in the communities before children start dying from the disease.

#### 5.6 Experiences of disability associated with "malaria"

Again households were asked whether any household member had ever suffered a disability after a severe malaria attack. A total of 440 answered this question of which 279 were from Mukono and 161 from Mpigi District. Forty four (10.0%) of the respondents reported a disability of a family member associated with malaria. Of the 44 respondents, 27 (61.4%) were in Mukono District while (17) 38.6% were in Mpigi District. Within Mukono, 9.7% reported a disability compared to 10.6% in Mpigi district. The two districts were not significantly different in terms of disability prevalence. The extract in the box below presents a case of a household whose child got disabled after a malaria attack.

Box 1: A case of an under-five child who got disabled after a "malaria" attack

One morning when Ibra was about a year old, he got a fever and his head felt hot. I gave him ½ a tablet of quinine. The tablets were bought from a private clinic. My mother was sick at the same time and I took her in town for treatment. On return after about an hour, I found the child had had a convulsion (eyabwe). People had gathered and given him garlic juice, and herbs –mormodica foetida (ebbombo) and vernonia amygdalina (omululuza). They had forced him to swallow by squeezing the nose. He stopped convulsing and I took him to a private clinic. He got quinine injection and valium tablets. At night on the same day, he got another convulsion and he was very hot. We did not give him any drug other than tepid sponging. In the morning convulsion re-occurred. Again, we gave him more valium. We knew that if we give valium, he will get better. We had planned to take him back to the private clinic for another injection but my landlord advised us to take him "engulu" (meaning to Kawolo Hospital).

We took the child to the hospital, got admitted; got 2 bottles of water containing quinine. In total, 6 bottles were put on him. We spent two weeks in the hospital. Although convulsions stopped, his eyes could not blink though he could hear people's voices. He could neither sit nor move and we were referred to Mulago Hospital. On arrival at Mulago he was put on drip and doctors bent him and drew fluids from his back. We were later told that the child's fever had reached the brain. We spent one month in Mulago Hospital. He improved and got discharged.

Later after two weeks he got convulsions again. I did not take him back to hospital because I was waiting for the day we were told to go back for review. When we visited, the doctors told us that they knew he would get that problem now and again and that is why he needed to visit hospital monthly and to keep on medicine. I kept taking him to hospital but there is a time now (due to lack of money) when I do not and instead buys medicine from private clinics - 2 tablets at 400/= each. Ibra got disabled in the left hand. Before he could get lost and unable to trace his way back home. He deficates in his clothes and anywhere he finds. He fears using the latrine and so many landlords keep evicting us from house to house. He is not yet in school. His peers tease him all the time. [The mother works at a telephone booth. The lesson the mother learnt was not to delay taking a sick child to hospital].

Disability cases required constant visits to health units. This was, however, associated with high travel and medication costs which threatened the *self-efficacy* of the caretakers with resultant non-adherence and self-treatment. Rehabilitation or tertiary prevention is quite expensive for poor households which have children with disability. The guardians seemed as well to find difficulty in managing the behavioural problems of the disabled children. This was aggravated by poor community attitudes. There were no follow ups and support services to guardians of children with disability in the study communities.

Some of these families were neither known, followed up, and supported by the relevant government departments, faith based or community organisations. There is limited *bonding, bridging and linking* of children and their families with others for mutual support and service provision.

# 5.7 Treatment actions undertaken to control uncomplicated and severe "malaria" in children

The majority of the study households (81%) used an antimalarial to treat uncomplicated "malaria" in the under-five children. There were no significant differences in the treatment practices between districts. The majority (90.3%) of the study households gave antimalarial within 24 hours of recognizing fever. In Mukono district, 92% gave an antimalarial within 24 hours compared to 86% in Mpigi district. Other drugs given by 56% and 11% of the respondents were panadols, and herbs respectively. There were no significant differences in these practices between districts.

Respondents were asked for the health care systems they consulted first when their children got uncomplicated malaria in the fortnight prior to this study. Most respondents (75%) indicated that they obtained treatment from private clinics/drug shops. The remaining proportion of respondents consulted the public units at different levels of care including the hospitals. Ten percent consulted a health center level three based at the sub-county level. However, laboratory tests for malaria were done in just 4% of the cases. The majority of the respondents (98%) reported having obtained all the prescribed drugs. There were no significant differences between Mukono and Mpigi district in drug accessibility. While 86% recovered, 13.6% were still mildly sick, weak or on medication.

The respondents were asked to indicate the very first action(s) they took when the underfive child got severely sick with malaria. Multiple actions were undertaken. The majority 55% took the child to a health unit while 54% gave an antimalarial at home. Other actions were:- giving a herb (31%); giving a pain killer such as a panadol (25%); tepid sponging 10%; doing nothing (6%); and praying (2%). Other actions were giving a lot of fluids, ORS, onion juice, or passion fruit juice, a mixture of ash and water. These actions were independent of all the important household characteristics, and district. In Mukono district, 57% gave an antimalarial when the child got severely sick compared to 48% in Mpigi. Most rural households in Mukono (61.5%) gave an antimalarial to a severely ill child compared to 37.5% of respondents in the urban areas. In Mpigi district 46.9% of the rural respondents gave antimalarials for under-fives. Among the antimalarials child carers gave were homapak, and quinine syrups.

The practice of giving herbs and other traditional treatment like onions and "smoking the child" varied significantly between male-headed and female-headed households within Mukono district. Most female-headed households (53.8%) gave a herb as first action to a severely sick child compared to 26.7% of the male headed households. Again the efficacy of these remedies and impacts on health outcomes need to be studied. The major sources of drugs used in the treatment of severe malaria were drug shops (41.8%); health units (27.4%); and community drug distributors (12.3%). About 9% of all the respondents reported using left-over medicines. The sources of drugs were independent of the districts.

The respondents reported that they visited a minimum of one health unit and a maximum of 6 places when the child's fever progressed into severe forms. Seven percent of the respondents visited between 3 and 6 places while the majority of respondents visited between one and two places. Some took the child to a drug shop or private clinic following failure of homapak to cure the child. Others moved from one private clinic to another; while some moved between private clinics and health centre level 3 units, vertically up to the hospital. Some respondents moved between units within the districts and outside up to Mulago National Referral Hospital. The extract below best illustrates this practice.

My child got sick while he was 5 months. First, I went to a drug distributor but my child never improved. Then I went to a nearby clinic but the condition worsened and I was referred to Gombe Hospital because the child lacked blood. I was discharged later. Soon the child fell sick again and I returned to Gombe Hospital. When the child fell sick again, I went to Maddu HC4 (a lower level than Gombe Hospital (sic); which referred me again to Gombe Hospital; and Gombe referred me to Mulago Hospital, in Kampala. My child developed a brain problem after suffering malaria. The child got stunted, cannot see, walk or sit. He is now one year and 4 months. (Case from Kabulasoke, Mpigi District).

One major explanation for visiting many places was the tendency of child care givers to prefer using locally based, *familiar* and less costly facilities. Economic, social and psychological *convenience* seemed to be a desirable value for child care takers seeking health care. However, many of the locally based familiar units may not have the capacity to handle severe malaria as the case above shows. Although this mother had at a certain stage been helped by a hospital, when the child got another attack she went to a lower level of care instead of going back to the hospital or even to a higher level of care.

Some of the respondents who took the child straight to the hospital(s) had been advised earlier to do so like in this case.

I just took the child direct to Nkozi Hospital because this problem had happened sometime back and the doctor had told me that if the child ever got severe malaria I should take him direct to Nkozi Hospital (Respondent Buseese B, Nkozi sub county, Mpigi District)

Some guardians seek care from wrong places because of ignorance or lack of guidance by the health care workers. Some children's illness progress into severe forms with poorer outcomes because of an inability to match the degree of illness to the functions of the health care systems. This may be aggravated by limited *social capital and support* in the community. High stocks of social capital would lead to the provision of the necessary information, encouragement and pooling of resources to enable guardians seek care promptly from appropriate places.

Respondents were asked to estimate the time it took the family to decide where to take the severely sick child for treatment, and the time it took to reach the first and last health care units. For some respondents, the decision was made immediately while for others it took as many as 168 hours (7 days) to decide where to treat the child from. The mean time was 15 hours, the median 3 hours. About 13% of the households made decisions after 24 hours. There was no difference in the time taken to make decisions between Mukono and Mpigi district respondents. In Mukono District, 85.1% of the respondents made the decisions within the first 24 hours of severe sickness and 14.9% beyond 24 hours. In Mpigi District 86.4% of the respondents made the decision within 24 hours and 13.6% past the first 24 hours. A significantly larger percent of urban caregivers (95%) were able to make decisions within the first 24 hours of contracting severe symptoms of malaria compared to 83% of their rural counterparts. Service *availability* and *affordability* partly explains the differences in health care seeking practices and outcomes between urban and rural areas.

Children had been sick for a minimum of 0.00 hours and a maximum of 336 hours (14 days) before reaching the first unit. The mean was 33.5 hours, the median 12 hours, and mode 48 hours. It took a mean time of 154.2 hours (24 days), a median of 48 hours (2 days), and mode of 72 hours (3 days) to reach the first unit in the event of a severe illness episode. Thirty six percent of the respondents exceeded the 24 hours to reach the first health unit. A larger percentage of respondents (79%) in Mpigi reached the health unit between zero and 24 hours compared to 53.3% in Mukono district. The remaining 47% respondents in Mukono reached the first level of care after the recommended time of 24 hours. There were significant differences in the time taken to reach the first health care unit between rural and urban respondents. Seventy one percent of the urban residents reached the units within a 24 hour recommended time compared to 58% of rural respondents.

The common reasons given for delay in seeking health care in situations of severe malaria were the *perceived severity* of the condition, and *barrier* related problems. Specific responses were:- "I assumed that the child will get better with drugs given"; "I did not have the money"; "public units do not have the drugs"; and "long distances to higher levels of care". Many people dealt a lot on the issues of poverty as a factor delaying treatment seeking.

The community has limited sources of income. The coffee plantations and bananas were destroyed by diseases. ... Some people obtain treatment from private clinics on credit. Our communities are extremely poor such that the village is even no longer able to collect funds to assist with burials. (CDD Kalwanga A, Kakubansiri Parish, Mpigi district).

#### **5.8 Referral experiences**

Respondents were asked whether any household member had ever been referred to another health care unit for the treatment of severe malaria in the last 5 years. Thirty six percent of the respondents replied in the affirmative. The majority (77%) of the referrals involved children under-five years; while 19% involved older children aged 6-18 years, and 5% involved adults. Within Mukono District 35% of households had ever had a referral of a family member compared to 37% in Mpigi District. This difference was not statistically significant.

When respondents were further asked whether they went to a higher level of care as advised, the majority (89.3%) replied in the affirmative. Among the 102 households who were referred in Mukono District, 93.1% went compared to 80.9% in Mpigi District. The major reason for failure of some respondents to take up referrals was lack of money for transport and upkeep in the referred health unit. Other reasons were that she/he had ever lost a person in the referred unit; and that the referred child died.

The major levels of care where the severely sick children were referred were the health centre 5 (district hospital, NGO hospitals like Nsambya, or Mulago National Referral Hospital,) followed by the health centre 4. In this study 49% of the sick children were referred to the health centre level 5; while 21.8% were referred to health centre level 4; 18.4% to private clinics/dispensary; and 11% to health centre level 3 and 2. Referral experiences were not significantly different between Mukono and Mpigi where 51% of the respondents and 48% were referred to the hospitals respectively. There were no cases referred to lower level units for monitoring and management. This practice may be problematic and a risk factor for children in vulnerable families and children with disability who would benefit from the follow-ups and monitoring. Currently, referral services are not effectively *integrated*) in the sense that while there are upward vertical linkages between the lower and higher levels health care units, there are limited downward linkage. This leaves important functions like monitoring and supporting vulnerable families undone.

The major sources of referral of severely sick under-five children were the private clinics which were reported by 54.9% of the respondents. This was as expected since private clinics were the first source of help for 75% of the households. This was followed by the child carers themselves (22.2%), Health centre level 3 (8%), health center 4 (7.6%), NGO hospital (4.9%), and government hospitals (0.7%).

The leading reasons for referral were: "the child's worsened condition" mentioned by 63% of the respondents, while 27% and 20% reported lack of intravenous fluids and blood transfusion services in the units, respectively. Inadequate drugs were mentioned by 3%. Other reasons given were lack of laboratory services, difficulty to breathe, development of new conditions in the child like paralysis in the leg, and child not recovering. The sick child had been kept in the first unit before referral for a minimum of 0 hours and maximum of 720 hours (30 days). The estimated mean time was 83.2 hours while the median and mode were 10.4 hours and 168 hours (7 days), respectively. The inter quartile range was 94.00 hours.

The respondents took a minimum of 0 and maximum of 120 hours to reach the last health care units where they had been referred. The mean time was 4.5 hours, median 2 and mode 2 hours. There was no significant difference in the time taken by respondents in Mukono and Mpigi to reach the units they were referred to. Overall, 97.1% respondents in both districts took between 0-24 hours to report to the referred health care unit. People rushed to take severely sick children to higher levels of care indicating a high level of most guardians to ensure child survival. *Child survival* is therefore a major value and goal for most households whose children experience severe malaria.

Once at the referred health unit, it took a mean time of 2.4 hours, with a median of 30 minutes and mode of 0 hours to access a health worker. The maximum time taken to access a health worker was 168 hours (7 days). The majority of respondents were able to access a health worker within the first 24 hours after reporting to the referral unit. Eighty eight percent of the referred respondents accessed the health worker in the first two hours while 11% did so between 3 and 24 hours. About 78% of the referred severely sick

children were admitted in the hospital or health centre level 4. Within Mukono district, 76.0% were admitted compared to 81.8% in Mpigi district. These proportions were not significantly different. It may be generalized that health workers quickly attend to the severely sick children.

#### 5.9 Administering antimalarials to sick children: Adherence practices

Respondents were asked whether they always completed their prescribed antimalarials. The majority (69%) of respondents did; 13.4% never completed treatment dosage, while 18% did sometimes. A lesser percentage of households in Mukono District (63%) indicated that their under-five children completed antimalarial treatments "always" compared to 81.1% in Mpigi District. Figure 2 shows reported completion patterns of antimalarials in both districts. Poor adherence practices have been shown to increase the likelihood of a child's death by 2.9 times.

Mpigi District households were performing relatively better in terms of compliance compared to Mukono District. The difference could partly be associated with the presence of village health teams (VHT) which sensitized households on the rational use of antimalarials. The presence of a structure with the purpose of continually sensitizing, encouraging, supporting, and monitoring household behaviours is important in improving adherence to antimalarial treatments of under-five children. In other words, *a structure* that fosters *social capital* is imperative if policy goals of reducing child mortality due to malaria are to be attained.



Figure 2: "My child always completes the antimalarials he/she is given for malaria treatment": Reports from Mukono and Mpigi districts

A number of reasons were given for poor adherence to the treatment regimen. These included:- "laziness", forgetfulness of health care managers in homes, assumptions that the child had got well (since he/she had resumed normal behaviours like playing and eating); adverse reactions to certain antimalarials; "empathy" by the mothers; and non-participation of men in drug administration. Some mothers considered the drugs and treatment procedures to "hurt" their children and thus preferred to restrict their use. Use of tablets in the treatment of malaria discouraged about 10% from completing treatment. Prescriptions of several injections requiring multi-visits to the clinic per day or week also discouraged about 27% from completing treatment.

Community leaders attributed poor adherence to a tendency to leave the treatment task purely on the individual caregivers and households without supervision and follow-ups by the health workers. Individuals tended to forget the time to administer the drugs. Forgetfulness was partly explained by the women's daily busy domestic schedules and absence of clocks to remind them of the time to administer the drug. Due to their absences from home most of the day, few fathers assisted with drug administration. The extract below highlights the normal work schedule of a fisherman.

Men cannot play a role in administering drugs to children because they spend a lot of time away from home, sometimes as much as a week. They enter water at 6.00 a.m to

pull out nets (okutegulula); come out at 9.00 a.m; followed by drying nets up to 1.00 p.m.; come back home for lunch. After lunch, at 3.00 p.m, they go back to the lake to lay the nets returning home at around 8.00 p.m. By the time a father returns home he finds the children already asleep. The mothers need to be sensitized to complete the doze, because mind- you most of them are semi-illiterate. Less than 10% of the mothers have Senior 4 education and 30% with P.7 education. (Deputy Chairman, Golomolo village Bunakijja Parish, Ntenjeru Sub-county)

.... Sometimes women report that the husband comes home on weekends. The husbands have multiple wives and a lot of responsibilities exceeding their resources. Men need to be helped to change their values such that they can better care for their children. Community leaders would be the best people to do this but some of them are not good models. The electorate elects people of similar behaviours and values (Private Practitioner, Lugazi Town Council).

Another reason given for poor adherence was that while some children who were managed by the CDDs were followed-up at home to ensure compliance, those attended to at the health units were not monitored. This constitutes an *inconsistency* in the processes of managing the disease by the different health care systems. Being *followed-up* seemed to be something valued by the households. Non-completion of treatment was also attributed to the tendency of the caregivers to first use left over medicines immediately they recognized fever in the child. In their discretion, they left some prescribed medicine unused since they considered the doze given to the child earlier.

Adherence problems were reportedly aggravated by an absence of fruits that would help to improve fluid intake during the child's treatment.

Juices from passions fruits or oranges are non-existent in most homes to help improve on the fluid intake at the time of treatment. Some households have water melons but lack the technology to extract the juice for the sick child. In urban areas, households go in for sodas or packed juices which have limited nutritional value to the child (SCDO, Mukono District)

The above extract portrays malaria as a developmental disease whose control is a function of the social and economic development of the country. This finding also highlights the importance of the participation of other social service sectors like agriculture, community development and developmental NGOs in health promotion, disease control and prevention. Other sectors have a role to play even in illness management and thus a need for integration of malaria in other sectoral plans and

activities; and collaboration between the health sector and other sectors in accordance with their comparative advantage.

Compliance problems were reported to be more with chloroquine and quinine tablets. Compliance was reported to have improved with the introduction of Coartem. This is largely because of the short time period coartem is administered, and the limited side effects.

#### 5.10 Saving practices and existing financing schemes for child illnesses

Respondents were asked whether they ever put money aside for crises like fever attacks in the under fives. A total of 310 respondents (57%) households put some money aside for child sicknesses. There were no significant differences in this practice between districts. In Mukono District, 59.1% kept some money compared to 53.8% in Mpigi District. A significantly higher percentage of households in the urban areas (74.1%) of Mukono kept some money compared to 54.4% of the rural households. In Mpigi District there were no significant differences in the saving patterns between rural and urban households. About 52% rural households in Mpigi District saved for child illnesses compared to 58.3% of the urban households. There was some relationship between male education and saving for crises particularly in Mukono District but not Mpigi District. In Mukono District, the more education the household head had the more likely it was to save for child illnesses. Figure 3 shows the findings.



Figure 3: Saving practices for child illnesses in both Mukono and Mpigi districts

Saving practices for crises in both districts were independent of the household's perception of malaria being a problem in the home; experiences of severe malaria and child deaths in households.

The common reason given for not saving for illness was poverty. Poverty was characterized as "having a lot of needs, many responsibilities, or having no income generating projects". There were, however, contrary views on why many households were not saving for sickness crises. Many households had got used to malaria attacks such that it was no longer considered *a threat* worth giving priority attention and resources. Secondly, households had developed a culture of crisis or fire fighting in the management of malaria with minimal planning and resource allocation for its control. The minimal household savings are aggravated by low stocks of social capital at the community level – (norms, trust and networks) to push them to pool resources for illness management and prevention. Minimal household savings for disease control and prevention constitute a problem because the public services which would salvage the situation are characterized by a number of service utilization *barriers* in the public and private health care sectors.

Other than the 5% of the respondents who were members of a community based insurance or mutual support group, the rest were not. Generally both districts were characterized by low stocks of *social capital* for illness resource mobilisation and management. Members of the mutual support groups reportedly collected money regularly and helped members to access savings in times of sickness or hospital admission. These were called "munno mukabi" meaning a "friend in need". One such group was found in Seeta Namuganga, Sub-county in Mukono District. Actually the purpose was to mobilize financial resources to meet surgical and admission cases of family members. Otherwise the most common self help groups were meant to help members to manage burials and events like weddings.

Sickness management and funding was culturally perceived to be a responsibility of the family and not the community. Generally, most communities assisted households when the sick child died. Discussions with community members in Seeta Namuganga indicated that the villages have many young children who fall sick frequently and it would be impossible for the community to assist each home given the prevalent poverty. They argued:

# How can you assist another home when your child falls sick and fail to get proper treatment for her/him?

Nonetheless, the 3 households which had organised themselves into community insurance schemes reported that they did not worry about money when their under five child fell sick. They were able to obtain all prescribed medicines whenever drugs were not available in the government health units. Other common mutual support groups were "nigina" and, these, although common did not address sickness. It can generally be concluded that there is minimal fit between the households' perceived needs for disease malaria control and their mutual support systems and resource organisation.

### 5.11 Conclusions

### 5.11.1 Capacity issues

The concept of capacity as propounded by the social work profession and implementation theory is very useful in helping to distill factors at household level that are sustaining the problem of malaria and its adverse effects on the health of under five children. The rest of this conclusion section highlights five capacity areas where households and health workers were found to have capacity worth strengthening or enhancing, and areas where they have limited capacity calling for development.

# Identification of fever/malaria and construction of the malaria problem

- The way households construct the malaria problem goes beyond the bio-medical one of emphasizing the role of mosquitoes so as to include barriers to health care access, cost of care, un-affordability, and environmental factors (physical/natural and social). On the other hand, health workers emphasize the role of inappropriate malaria management practices by households in addition to services access barriers, quality, and poverty. The households do not instantaneously acknowledge the role of their practices in the sustainance of the malaria problem and its adverse outcomes. This limited capacity could be due to inadequate understanding of the science of parasites and how drugs work to eliminate them.
- Most households do not have the ability to differentiate signs and symptoms of malaria with those of other diseases like the millet disease and ebiinyo something likely to lead to poor health care seeking practices and outcomes.
- Because of the commonality of malaria in the study communities, siblings of ill under-fives have the ability to recognize fevers when they occur but powerless to take effective actions to control the progression of fever into severe forms especially when left alone at home with under-fives.

#### Capacity to undertake preventive actions against the disease

- Households have the capacity to undertake risk assessment of malaria in their homes. But preventive actions are not in cognizance with their knowledge of risk factors largely because of poor knowledge of the relevant science.
- Poor households have limited capacity to undertake preventive actions especially the use of ITNs even when provided free of charge because of unsatisfactory living conditions such as sleeping space, inappropriate social norms in homes especially the tendency for adults to take on children's nets, powerlessness of children, lack of critical consciousness about malaria and children's vulnerability to malaria. The poor also have limited capacity to buy full dosages of antimalarials in situations of drug stock outs in public units with a tendency to give just pain killers like asprin or panadol or half doses of antimalarials.
- Generally most households especially the male headed ones have minimal motivation and commitment to undertake preventive actions against malaria due largely to lack of a critical consciousness about the social economic impacts of malaria on the household development.
- While most households do all sorts of things to reduce mosquito entry in the houses and biting, they lack an ability to choose effective preventive actions. This is due to limited knowledge about the science of preventive measures (indigenous and non-indigenous) and the biting habits of mosquitoes.

# Powerlessness

- Although the communities know the role of mosquitoes in malaria causation and how transmission takes place, they are powerless at taking action against environmental causes of the disease.
- While health workers are able to articulate problems in the health care service delivery structures, they are powerless to address many of the deficiencies causing poor performance of the health care facilities. The current structural arrangements of public health services, and limited autonomy to make resource allocation and mobilisation decisions by the low level workers constrains the health workers'

abilities to advocate for increased resources and improved performance of health care units. This reduces on health workers' accountability for health outcomes.

#### Poverty and Resourcefulness

- There is limited ability to plan for malaria control in homes largely due to lack of norms favouring health promotion and malaria control in particular.
- Families whose children get mentally and physically disabled after getting malaria have limited capacity (especially finances, and social support) to enable them regularly visit the health units as required and comply with treatment regimens.
- Saving for treatment of malaria illness is limited to 57% of the households. The
  rest handle malaria in a fire fighting manner. Being used to malaria, absence of
  norms to plan and budget for health promotion at family level, as well as
  economic consumption poverty are possible reasons for a poor saving culture for
  health. Likewise, there is minimal community mobilisation purposed at pooling
  finances to manage future illness events.
- Poverty has a big role to play in terms of disabling households to buy full doses of antimalarials and the subsequent substitution of antimalarials with pain killers; delayed health care seeking; poor or uncompleted housing facilitating easy mosquito entry.

#### Health care seeking

- While households have a high capacity to link with private and public health care facilities during children's illnesses, they have limited capacity for bonding with neighbours for social and financial assistance to enable them (especially the poor families) promptly take ill children to health care units. This increases their risk of personal deterioration.
- There is currently minimal social work, education and rehabilitation services for mentally disabled children who develop behavioural problems after suffering malaria.
- Tailoring the degree of malaria severity to public health function and capacity is still a problem to many households leading to great delays in health care seeking and management.
- Compliance with treatment regimens is still a problem to as many as 30% households with resultant adverse outcomes on the child's health.
- Strategies currently promoted by the Ministry of Health to reduce the progression of illness to severe forms and reduce on deaths and disability such as prompt treatment of malaria with an effective antimalaria were found in this study to be quite effective.
- Health worker /patient communications on important issues for malaria control are given late when the child is already severely sick (medical prevention). This reduces on its potential impact.

## 5.11.2 Malaria experiences and risk factors

- Rural areas are more susceptible to malaria incidences and prevalence than urban areas.
- Sub-counties and urban areas have unique risk factors for malaria transmission.
- Mild, severe malaria and deaths share some risk factors including:- a) living in a rural area, b) living in an agricultural household; and c) health education not being effective to control mild and severe conditions.
- There is no difference between households which prevent malaria and those which do in terms of prevalence of uncomplicated malaria. This could be due to the tendency to choose ineffective preventive methods, or inconsistent use of the technology.
- Significant community risk factors for severe malaria were: living in a big family; under-five child staying all day long with fellow siblings; absence of a community drug distributor, lack of knowledge of availability of homapacks, and lack of money at the time the child falls sick.
- Significant risk factors for deaths of under-fives due malaria were: failure to return a sick child for treatment; preference of NGOs for treatment of mild malaria; and living in a community with a community worker.

#### 5.12 Recommendations: Emerging policy needs

A number of recommendations emerge from the above conclusions. They are organised into:- a) malaria construction and strategies b) resource allocation and distribution; b) malaria prevention; c) community empowerment; d) research and theory building.

#### Malaria construction and strategies

- A comprehensive malaria control policy needs to address the malaria problem constructions of both the households and health workers namely: direct causes (vectors and parasite control), service structures, access and cost issues, service quality, and important values like affordability and availability of drugs, blood, intravenous fluids, environmental management; household behavioural factors.
- An adequate malaria control policy would need to make provisions for community based rehabilitative services for mentally and physically disabled children as well as building communities and networks to provide social support to such families and by such families. Disability resulting from malaria illness calls for more networking and linkages of health units with community based service programs. Policy needs to indicate how to follow up such children and their families for social and technical support.
- There is need to integrate malaria control activities in poverty alleviation programs like NAADS as well as general development program including housing construction and improvement.
- Local governments need to regularly plan and budget for malaria control activities taking into account each ones' unique risk malaria factors. Effective planning for malaria control would call for streamlining malaria in all local government plans just as they do HIV/AIDs, gender and environmental management.
- There is need to strengthen the existing program of HBMF, and messages on promptness of health care seeking and treatment in homes.
- Since most children die at home, there is need to revitalize the reporting and collection of vital statistics on child deaths in the community. This would lead to

improved identification of the most vulnerable children and targeting of resources in policy and planning.

- There is need for the development of referral networks between the high level health units and lower level units and or community based organization for purposes of monitoring and supporting discharged children (attended to by higher level health units) and those who get disabled from common diseases.
- This study has demonstrated the existence of different vulnerabilities to malaria. These include economic and social vulnerabilities. These vulnerabilities can be seasonal as when a community looses a harvest and income due to crop failure and diseases. This calls for policies that are able to identify such seasonality and provide for increased services especially provision of free or subsidized medicines especially in the poor agricultural communities.
- Address the inequality-inequity problem of health unit distribution, functionality and quality in public and private health care units.

# Resource generation and allocation

- Target more financial and other resources to rural agricultural communities and big sized families which are most vulnerable to the disease.
- There is need to have drug reserves for the poor in situations of drug stock outs in public units. This further calls for a means test to help identify the poorest people for such benefits.
- To provide for strategies to improve resource mobilisation and generation in the different health care systems for purposes of improving resources for case management.
- Indicate ways of stepping up and accessing essential inputs (such as antimalarial supplies) for case management in agricultural communities which were found to be most vulnerable to severe malaria and deaths.

# Malaria prevention

Indicate knowledge gaps, behaviours, attitudes, values, and norms of primary child carers and household heads that affect health care seeking, case management, and prevention that need to be addressed by health workers in health units (public and private) as well as in the community. Specifically:

- Health education needs to emphasize the science of the interactions of medicines with parasites in the body and vectors.
- Health education needs to help guardians to differentiate signs and symptoms of malaria with those of other diseases with similar presentations.
- Health education also needs to guide child carers about the appropriate places to take different degrees of malaria suffering children.
- As health units provide health education in the health units, there may also be need to provide the same education to the healthy population in the community.
- There is need to raise the consciousness of families to consider and plan for health and malaria prevention and control in particular. Emphasizing the social economic impacts during community health education would be effective in motivating men to invest in malaria preventive activities and technologies.

## Empowerment

There is need to empower the communities and health workers to enable them influence environmental forces that currently disable them from making transforming decisions, affecting others, and working with others to change negative situations and preventing the re-occurrence of the problems. There is need for negotiation and collaborative actions between service users and providers to change social institutions for improved service delivery. As Hur (2006) suggests, collective empowerment would call for processes of community building, collective belonging, and community involvement.

# Household practices

Address the causal factors for poor adherence to malaria treatment. It is specifically recommended that families be helped to develop social capital for improved drug administration by involving family members to take an interest in the child's treatment and to remind and urge the mothers to give medicine in a timely manner until completed. There is also need to provide knowledge to mothers and fathers regarding how medicines work on parasites and implications of non-completion of drugs especially the development of disease resistance to drugs.

- Siblings and also domestic workers who baby sit under-fives in the absence of their mothers need to be sensitized about malaria and what to do in situations of fevers and other symptoms of malaria.
- There is need to mobilize and organize communities to pool resources for health care and especially the management of malaria.

# Research and theory building

Service utilization is an important variable that implementation theorists need to give attention because it lies in the path to the attainment of the social goals of any one policy/program. This study has demonstrated that varied utilization of treatment and preventive services produced varied outcomes. Policy does not only need to address the factors that hinder service utilization, but also needs to provide for provisions to monitor service use, identifying the enabling and constraining factors and continuously feed the results into policy and plans.

# CHAPTER SIX

# ORGANISATIONAL CAPACITY TO PLAN AND IMPLEMENT MALARIA CONTROL ACTIVITIES AT THE LOCAL LEVEL: EMERGING NEEDS FOR POLICY

This Chapter presents the findings relating to second objective of the study. The choice of the title of this chapter lies in the fact that implementation is largely influenced by the organizational capacity of the health care systems. Organisational capacity refers to an ability to achieve social objectives as a function of the structures, functions, processes, resources, management style as well as external environments or task networks of a health care system (Bossert 2000). This chapter discusses the organizational capacity of households, communities, local governments, and health care institutions and their ability to reduce morbidity and mortality associated with malaria in the under-five children. Specifically, the Chapter presents findings relating to how families organize themselves to manage malarial illnesses, and the values guiding their health care seeking decisions. The chapter also discusses the extent community level institutions prioritize malaria in their work plans; the extent disease control plans are implemented by health units and health sub-districts, and existing resources and opportunities utilized for the attainment of the *highest standard of child health*. It also provides evidence of the involvement of other sectors in disease control, an important element of PHC and HSR. This chapter continues to decipher the risk factors for sustained morbidity and mortality of children due to malaria.

The findings presented in this Chapter largely use qualitative information collected from community leaders, health unit managers, and health unit records. These are complemented by quantitative evidence from the household survey. To ease discussions the study uses concepts picked from Chapter 3 and these are presented in italics.

#### 6.1 Household organization for the management of "malaria"

The management of febrile illness in under-five children by the households involved a number of tasks. The core ones were: deciding the source of treatment, seeking health care, looking for the necessary resources, and administering the obtained antimalarials. Table A7 in the appendix shows the persons responsible for doing each of the malaria management tasks in the male and female headed households.

It was found that most fever management tasks and nursing in both the female and maleheaded households were undertaken by the mothers. Taking children to health units for treatment was normally done by the mothers in over 70% of the households. In the majority of the male headed households, the decisions were made by both the mother and father of the sick child. In 48% of the male headed households, the decisions were made by the mothers. In female headed households, these decisions were predominantly done by the single mothers (75%). Many times single mothers were assisted to make decisions and undertake different illness management tasks by the grandparents of the sick children and other relatives. Administering drugs was predominantly a female activity estimated at 90% and 80% in the male and female-headed households respectively. Other tasks undertaken mostly by women were reminding a sick person to take the drugs, consulting on how to manage severe malaria in an under-five child, and preparing as well as feeding the sick child.

A task which was predominantly men's was that of looking for financial resources. Meeting the medical bills for treatment of the under-five children was reported to be the responsibility of fathers in 79.8% of the male-headed households. In 8% of the male-headed households the finances were raised by the spouses. In 60.8% of the female-headed households, this responsibility fell on women. In about 15% and 22% of the female-headed households the financial mobilisation was done by the children's fathers and grandparents respectively.

This division of child illness management responsibilities between gender required the *availability* of particular individuals when the child fell sick. However, Chapter 5

indicated that there were many times when children fell sick in the absence of adults and especially the fathers. Most fathers in the fishing communities in Mukono district were reported to be away for a week or more returning on weekends. Some fathers did not leave adequate funds for the family's upkeep as well as catering for acute illnesses like malaria. Non-availability of an adult meant that: a) the people remaining in homes with an under five child could not take any action because of lack of knowledge, skills, resources and confidence; b) if the mother surrogates attempted to take some action it might not be effective. Both actions are less likely to reduce progression of mild 'malaria' into severe forms (Chapter 5). Non-availability of adults in homes during the child's illness called for proper delegation of tasks - that is, transferring the responsibilities with the necessary resources and power to the people who remained with the children. This was incidentally not done all the time by many parents.

There was qualitative evidence that many times children of school going age went to school when sick because of an absence of adults at home. Some head-teachers of infant and primary schools reported that:

Some children come to school when sick because they have nobody to stay with when parents go to work (Head teacher, Mehta Nursery School, Mukono District).

The threats created by absences of adults in homes at the time the child fell sick were partly a function of limited economic *empowerment* of women, and low stocks of household and community *social capital*. Communities are not formally *organised* to address many of these unmet support needs for better illness management. This implies that if severe malaria and mortality are to be reduced in the under-fives, families need to be sensitized to the importance of planning for the management of acute illnesses particularly during the absence of certain adults in homes. It means giving the other significant people in the home the knowledge and skills of managing the illnesses. Among the pieces of knowledge and skills needed are: knowledge regarding whom to consult for help, knowledge of the existence of CDDs, signs and symptoms of malaria and severe illness, where to obtain money to meet transport and treatment costs, and being confident to take an effective action. This skills development will be easier with certain structures of families and not others where under-fives stay with fellow siblings of tender age and other vulnerable people. Nonetheless, this study found that many fathers and mothers did not do adequate preparation *(redistributing functions, power and resources)* to have their tasks undertaken by other people who remained with the young children.

Common instructions given by mothers when leaving homes regarding the action(s) to take when an under five got fever/malaria were: "call me from wherever I am", or "inform other adults or neighbour". These responses were cited by 61.4% and 5% of the respondents respectively. Many mothers (26.4%) told the household member to always give a panadol or an antimalarial when they recognized fever in an under five. Other instructions were: "give a herb"; "take the child to the health unit"; "tell the father to buy medicine"; "bathe the child"; "give septrin and panadol"; and "give a lot of fluids". Some of these instructions may not be effective to containing the progression of fever to severe forms. Execution of some of these instructions may lead to delays to get proper treatment for the sick child. Although homapak is by policy the first aid drug for homes, few mothers left instructions to seek out a homapak distributor. Also very few communities had organised mutual support networks to assist mothers with money in the absence of the father.

These findings highlight the fact that the household is another level where policy is implemented and where social organisation needs to be carried out for disease control. Availability of actors (and in this case adults) is another important element of *transactional model of the implementation theory*. Effective policy needs to provide for sustained capacity building of people who commonly stay with under five children (in the absence of the parents) to better manage "malaria" at home. In 88.7% of the studied households, fever in under-five children was recognized by the mothers and grandmothers. The rest of the fevers were recognized by other members of the families including siblings.

#### 6.2 Availability of health care systems and household choice of a service provider

Households were faced with three major decisions to make during the child's illness. The first was deciding on the therapy to give the sick child. The second was deciding on where to obtain help or therapy from; while the third decision related to how to obtain the necessary financial resources to meet the medical costs. The choice of the source of health care depended upon: (a) the available health care systems in the community, (b) values relating to preferred sources of care, c) whether "malaria" was uncomplicated or severe. Findings relating to these decision making tasks are discussed below in some detail.

There is a lot of variation in the distribution of health care units in the studied communities. Some communities had more NGO health care units while some had government units. Health care units varied in sizes, functions, modalities of accessing care, cost and quality of care received. Chapter 2 indicates that the pattern of health service distribution especially by the NGOs is partly historical. Thus, some facilities were paying units while others offered free services. Some households lived near the government and NGO health units. Subsequently, some people are not assured of the same access to health care in the two districts and within health sub-districts of the same district. For example, some places like Lugazi Town Council had two hospitals one of which was set up by the Sugar Corporation to serve its employees; while another one of Kawolo Hospital was set up by government to serve the general public. In comparison, Mpigi Town Council had only one unit of a lower grade (health centre 4). Hence, some households had abundant health care resources to choose from to manage malaria while others were physically isolated, under-served, and the services unaffordable. The existing *inequalities* in the distribution, affordability, and quality of health care services may partly explain the high morbidity and mortality due to malaria in Uganda. All children who suffer from the disease/illness do not receive the same type and quality of services. It is apparent from this finding that inequalities go beyond physical distribution to include whether any two children suffering from a condition *access* the same quantity and quality of health care services. Figure 4 shows the community health care resources reportedly available in the studied

areas.

Figure 4: Existing community health resources in the studied villages/parishes of Mukono and Mpigi Districts by 2007



most available community health resources in the studied districts were community drug distributors (CDD)<sup>37</sup> mentioned by 68% and 90% of the respondents in Mukono and Mpigi district respectively. These were followed by private clinics and drug shops. Slightly more than half of the villages visited had a private clinic or drug shop.

There were no significant difference in the distribution of private clinics and drug shops in both districts and between rural and urban locations. Actually it was observed that most rural areas did not have private clinics but had drug shops. The drug shops functioned as private clinics selling drugs as well as examining and treating patients. Most were registered and licensed as drugs shops but functioned as private clinics. This may, however, be a risk factor and an impediment to disease control because systems take on *tasks* for which they have no *capacity* to manage. Subsequently, if severe malaria and mortality are to be reduced, actors need to carry out those tasks for which they have the requisite knowledge and skills. This further calls for the enforcement of the existing regulations governing the private sector to enhance better management of malaria.

The

 $<sup>^{37}</sup>$  CDD is a structure of community based volunteers and residents of a village. This structure was set up by government to distribute free homapacks to under –five children suffering from "malaria". At the time of this study the homapacks contained chloroquine and fansider tablets in blister packs for children aged 6 months to 2 years and 2 to 5 years.

Corollary, failure to enforce the existing regulations may be a factor sustaining the high morbidity and mortality of the under-fives from malaria in Uganda.

There was a significant difference in the distribution of community drug distributors in Mpigi and Mukono District with the former having more active CDDs. On average, a village was reported to have two CDDs each. Figure 4 shows that there are villages which are not served by any community health care resource system. These remain un-served with grave implications on the health care seeking and health status of children. Use of CDDs was reported in Chapter 5 to have reduced the risk for severe malaria. The traditional birth attendants (TBAs) provide maternity services in the villages and manage some malaria cases.

#### 6.3 Household values and choice of a health care service provider

Respondents were asked for their preferred sources of care for uncomplicated and severe malaria in children. This was done because preferences are values which propel household to undertake certain actions, inactions or delays with implications on disease control policy outcomes. Respondents had different preferences regarding the source of care for uncomplicated and severe "malaria". There was a general preference for private clinics for the treatment of uncomplicated malaria in children in both districts. There was also a general preference for government units with respect to treatment of severe malaria. An average of 42% of respondents preferred to use private clinics followed by homapak (29%), government units (17%), drug shops and NGO units (5%) in that order for the treatment of mild malaria. Preferences of health care systems in rural Mukono differed from preferences in the urban Mukono. The majority of rural households in Mukono (50.6%) preferred private clinics in the treatment of uncomplicated "malaria" compared to 39.5% of their urban counterparts. The inclination of rural households to prefer to use the drug shops in the event of uncomplicated malaria may be a function of unavailability of alternative sources of care. Many rural areas were endowed more with drug shops than government or NGO units.



Figure 5: Preferred sources of treatment for *uncomplicated* fevers/malaria in under five children in Mukono and Mpigi Districts

In Mpigi district, the most prominently used source of care was the homapak. This strategy was common in both the rural and urban locations of the district being preferred by 46.3% and 46.7% respectively. The CDDs were followed by private clinics which were again better preferred in the urban areas than the rural areas. There are two explanations for the high preference of homapak by Mpigi district respondents. Firstly, Mpigi had a structure of Village Health Teams (VHT) which promoted the use of homapak. They ensured that homapak was available all the time in the villages and sensitized the households to its use. This encouragement helped to address the otherwise negative perceptions about homapak. The VHT members were in turn supervised, supported, and called to annual refresher trainings which motivated them to continue working. The provision of *managerial resources* – notably, support supervision and monitoring assured effective policy implementation by the CDDs in Mpigi district. In turn, the sustained functionality influenced service utilization by the guardians of sick children. Chapter 5 indicated that people who knew the availability of CDDs and existence of homapaks were more likely to use them and this practice averted cases that would have progressed into severe malaria. Corollary, it can be inferred that part of the high morbidity and mortality due to malaria may be the limited financial and *management resources* provided to the different health care systems - both the public and private sectors. The emerging values from the above findings are *availability* and *functionality* of service delivery structures.

When respondents were asked for their preferred sources of care for severe malaria in children, most (51%) preferred government units; while 32% preferred private clinics, and 15% NGO units. Very few respondents (3%) preferred continuing the children's treatment at home in both districts; or even in private clinics and drug shops. There were significant differences in preferences made by respondents in Mukono and Mpigi district and between rural and urban respondents of Mukono district. Figure 6 shows the findings.

Most households preferred government units for the management of severe malaria because of the *capacity* or ability of the government units to manage such conditions; *familiarity* with government units, and the desire for rigorous and scientific *diagnosis*. Logistic regression analysis indicated that preference for government units in the treatment of severe malaria varied with district, urban /rural locations, education of the household head, frequency of money shortages during the child's sickness, perception that "NGO units do not have drugs for severe malaria" and the attitudes that "government units are the best at treating severe malaria".



Figure 6: Preferred sources of health care for severe malaria in under five children in Mukono and Mpigi districts

Another determinant was the perception that: "laboratory services are an important service". Table A12 in the appendix summarises these findings.

Mpigi district respondents were less likely to prefer government units in the management of severe malaria than Mukono respondents. Respondents in Mpigi explained this in terms of drug unavailability and other medical supplies like intravenous drips and blood. Urban respondents were 1.9 times more likely to prefer government health care units than rural respondents. This could be attributed to the *availability* and *accessibility* of government units in urban areas. All urban areas had government units of higher grades (grade 4 and 5) with the capacity to handle severe malaria. Rural households and villages visited tended to be served by relatively lower grades of government units (grade 2 and 3), some of which did not have the capacity to handle severe malaria. For example, many did not have laboratory services, expertise, and blood transfusion facilities<sup>38</sup>. Households seemed to differentiate units with and without the capacity to handle severe malaria. In other words, households value units with *capacity* to handle the different degrees of illness and especially the severe forms. One such capacity is the availability of

<sup>&</sup>lt;sup>38</sup> Blood transfusion was available at the health centre level 4 and 5 (the hospital).

laboratory services. Respondents who thought that laboratory services were important in the management of severe malaria were two times more likely to prefer government units in the management of severe malaria because of the possibility that a proper diagnosis will be done.

It seems that primary child caregivers value more *rigorous, scientific diagnosis* in the management of malaria, and especially the severe forms. Another value that seemed to emerge from the respondents' preferences for those units which provided laboratory services was what the study called *value added or added value*. Respondents wanted to get extra services like laboratory services or explanations for the children's conditions which they could not obtain from home or self treatment. This is an aspect of quality of care provided by a health care system. This means that poor quality of care may be partly responsible for the wide spread self treatment and delays to seek professional care; and yet, Chapter 5 indicated that promptness to seek treatment for febrile conditions in underfive children was protective of severe malaria.

Respondents with primary and secondary levels of education were 2 and 1 time (respectively) more likely to prefer using government units than the uneducated ones. Respondents who had never experienced any money problems during child sicknesses were less likely to prefer using government services than those who commonly experienced money constraints for medical treatment. As expected, respondents who knew that "government units stocked antimalarials for mild fevers all the time" were 3 times more likely to prefer these units for treatment of severe malaria than those who did not know. Also respondents with positive attitudes that "government units are the best at treating severe malaria" were 2 times more likely to prefer government units for the treatment of severe malaria in children.

It was also found that knowledge and attitudes that "government units do not have drugs for mild malaria" did not affect the respondents' preferences of government units. This is a consistent finding with an earlier one on uncomplicated malaria that affirmed *familiarity* to be a value cherished regardless of the weaknesses of the health care system. Similarly, respondents with some experience (positive and negative) with NGOs were more likely to use NGOs for the treatment of severe malaria. Again this confirms the existence of the value of *familiarity* in determining preferences. Those knowledgeable about NGO units were bound to continue using them regardless of their weaknesses. Receipt or non-receipt of "advice on feeding" which is commonly provided as part of the integrated management of childhood infections (IMCI), did not make respondents favour government units.

All these findings have great implications for policy for malaria control. For example, if mothers prefer to treat uncomplicated malaria in private clinics which are also the nearest to them, to what extent does policy enable these units to offer quality service at reasonable prices? To what extent does the policy enhance or foster this natural division of responsibility in the management of mild and severe malaria between the private sector and the public sectors? These issues are explored more in the forth coming chapters.

#### 6.4 Capacity to plan and implement malaria control activities by the community

Although Chapter 5 indicated that malaria was perceived as one of the leading health problems, and communities knew the risk factors, very few villages reflected malaria control activities in the annual plans which they submitted to the sub-counties for funding. Annual plans for 16 villages for financial years 2005/2006 and 2006/2007 were studied. Out of the 9 villages which gave information on their plans for FY 2005/06, only 3 (33%) reflected malaria control activities in their plans. In the FY 2006/2007, again only 3 villages addressed some aspects of malaria control in their work plans.

Activities which were commonly reflected in the village, parish and sub-county plans were procurement and distribution of ITNs and construction of health units. Two out of six sub-counties reportedly addressed the problem of malaria by constructing health units and staff housing. Construction of the staff houses was partly meant to improve health worker *availability* and *accessibility, equity* and quality of care. Two sub-counties planned and budgeted for malaria preventive activities. Nonetheless, plans for malaria control and prevention were not continuously done in subsequent years by those sub-

counties which were sensitive to the disease. For example, Ntenjeru sub-county budgeted for trainings, and awareness campaigns for malaria in FY 2007/2008 and not for 2008/2009. Plans for malaria prevention were also not comprehensive as they did not specify the targeted behavioural changes (see Table A14 in the appendix). Thus, there was a general mismatch between perceived risk of malaria and *community action*.

The town councils of Lugazi and Mpigi were relatively more proactive and more involved in malaria preventive activities than the rural sub-counties. Malaria control activities engaged in by the Lugazi Town Council included: encouraging people to use nets, and re-treatment of nets. Lugazi Town Council budgeted 3,000,000/= for malaria control activities in 2006/2007. The budgeted for activities included village community sensitization about the vector, (at least once a quarter) and spraying houses. Although the town councils embraced malaria in their plans they were constrained by low levels of funding. For example, the real money the Environment Department of Lugazi Town Council needed to execute that plan was reported to be 12 million Uganda Shillings but it received just 3 million representing 25% of the needed funds (Senior Official in Lugazi Town Council). *Financial* inadequacy was therefore a major *threat* to the execution of the plan.

Malaria prevention in Lugazi Town Council was also constrained by *powerlessness* and compromise with the perpetrators of the problem. While the sugar plantations were a major risk factor and breeding ground for mosquitoes, and the Council had enacted certain bye-laws to correct the problem, it could not enforce the laws for fear of antagonizing the investor who was the major source of revenue for the Council amounting to about Shs 380 million per year. Technical leaders had been cautioned by the Council "not to push the investor much" (Senior Officer, Lugazi Town Council). Nonetheless, SCOUL had employed an environmental health officer to work with the Town Council Environmental Health Department on such issues.

The malaria control and preventive activities planned and executed in Mpigi Town Council were slightly different from those of Lugazi. In collaboration with the Hunger Project, the Town Council distributed insecticide bed-nets to 3500 under-five children covering 11 villages with each village getting about 20 ITNs. Pregnant mothers got nets from the health centre 4. Also HIV/AIDS patients got free nets. Another proposal had been submitted to Global Fund to obtain another 10,000 nets. There was also a plan to obtain nets from the Malaria Consortium at lower prices of about 7000/= to sell to the adults. While these show some activeness of the Council, important actors like the entomologist and public health department were not *fully committed* to malaria control. For example, the Mpigi Town Council entomologist was concerned more with bee growing and honey harvesting and least with mosquito breeding sites. The Public Health Department was concerned more with sanitation improvement and making sure that houses were built according to architectural plans. This finding actually questions the appropriateness of the choice of the top-down model used by the country and decentralization in particular. The assumption that implementers will carry out the policy actions issued by central government and that the local governments will address the most pressing local needs without putting in place *enforcement* mechanisms is wrong and partly explains the sustained problem of preventable diseases like malaria.

The major reason given for failure to reflect malaria in the village level plans was lack of knowledge regarding what villages were expected to do about malaria. Most leaders did not know much about the malaria control policy; and tended to associate policy with what the technical people and especially the health workers told them to do or what they saw health workers do. The extracts below illustrate this finding.

Policies on malaria are not known. We just learn from the technical staff how this or that should be done. (Chairman LC1, Ntenjeru Sub county).

I don't know the government policies with regard to malaria control and our responsibilities as local leaders. We get to know about government policy when we are required to nominate somebody like a CDD for training (Chairman LC1, Bunakijja parish, Ntenjeru Sub- county).

Policy documents were not available at the village and parish levels in all the studied villages of both districts. Thus community leaders lacked guidelines on what and how to sensitize the communities on malaria. Also village leaders did not have the capacity to identify malaria control needs. The limited planning *capacity*, the predetermination of

the activities and funding of local governments (by central government); and the limited local revenue collections in districts and sub-counties explained the neglect of malaria control and preventive activities in local level development plans. The central government emphasized infrastructural development leaving out activities like social mobilisation, sensitization and behavioural change. Social mobilisation and behavioural change for disease control were supposed to be funded with locally mobilized revenue which was reportedly very small and/or non-existent. The main grants<sup>39</sup> given were for infrastructural development.

Other factors explaining the neglect of common diseases in local level plans and the subsequent failure of policy implementation included:

a) Beliefs that malaria treatment is the responsibility of individuals while other preventive activities are the responsibility of government, also threatened the collective *efficacy* to take some *community action* against malaria. Malaria is not an institutionalized problem; but rather it is perceived as an individual person's concern, a private trouble correctable with individual effort and resources.

Malaria is perceived as a personal issue, because when one is sick, the individual goes to the health unit. The institutions might have taken over this perception that malaria is an individual problem. There is also a false hope that malaria is treatable and you can get assistance... the problem comes when you go to the health centre and you are told that there is no drug (Officer Mpigi Town Council).

This situation calls for conscious raising of the malaria problem not only of individual households but also the community institutions including local government departments.

b) Lack of clarity regarding who should undertake and fund the *interactive* or *political* implementation tasks associated with malaria control and prevention also accounts for the limited funding of the malaria control actions at local level.

There is a tendency to think that the health sector will sensitize and raise the necessary resources while the health sector also assumes that the sub-county through the health assistant will sensitize using Sub-county resources (Counsellor Seeta Namuganga Sub County).

<sup>&</sup>lt;sup>39</sup> The main grant obtained by local government from central government were : LDGP, PHC, PMA and NAADS. LGDP and PHC were meant for infrastructure development. PMA and NAADS was for agriculture. Since 2004, the graduated tax which had been a major source of revenue for local governments had been banned.

Most problems of the health sector are addressed directly to the District Director of Health Services. Sometimes the Sub- county never gets to know...For example ITNs were distributed without the knowledge of the sub-county (Sub Accountant, Seeta Namuganga Sub- county)

These problems could be a function of a failed *communication between actors and integration of the policy delivery systems.* Although the sub-county council had its secretary of health representing it in the health unit committee meetings, and one would expect easier sharing of information on the plans, resources, and capacities of either. However, this was not effectively taking place in some sub-counties. The sub-county council allocated funding to a few activities considered difficult to get with PHC funds. PHC funds were provided to public health units. This left certain business relating to disease control unaddressed by both the local councils and the health units. It was observed that poor relationships between political leaders and some health workers compromised the amount of effort and resources that would be put in disease control at the local level. This was aggravated by the limited institutionalization (a lack of shared understanding of the gravity of the problem between the implementers, policy makers and suffers) of the problem.

c) Inability to balance environmental management for disease control with people's demands for economic development was another impediment to planning for malaria prevention and especially environmental management by local governments. The extract below provides the empirical evidence.

Managing the environment is difficult because it conflicts with people's economic activities. We can encourage filling up pits, and bye-laws exist but they are not enforced because of conflict of interests between political and technical interests (Counselor Seeta Namuganga).

This extract highlights the existence of *interest coalition groups* which shift the implementation processes of malaria control and prevention. The fear to enforce existing environmental byelaws by the local leaders also portrays the existence of *powerlessness* among the political, technical and the community members. Powerlessness was aggravated by the fact that the studied communities were not organised as *social psychological communities* able to share a common view and interpretation of the reality

of malaria. It is the realities which should have guided their everyday environmental management practices.

# 6.5 Capacity to plan and implement malaria control activities by the health units and health sub-districts (HSDs)

The study investigated whether and how the following aspects of health care were integrated in planning and implementation of the malaria control policy by the health units and health sub-districts:- a) *interactional and technical tasks;* and (b) curative and preventive services in the public and private health care systems. Each of these is discussed one by one below.

While community organizational theory emphasizes the need to balance the *interactive* and *technical goals* in the selection of community organizational goals, this study found that most emphasis was put on technical goals, and less on the interactive goals. The technical tasks were planned, implemented, monitored, and reported on in the health information management systems (HIMS); but the interactional tasks were not given the same attention by health workers.

Curative and preventive services for malaria control in both districts were planned for by the health sub-districts in an integrative manner. Four plans for Buikwe West, Nakifuma, Mukono South and Mawokota South health sub districts were studied to assess the direct malaria control activities planned in the FY 2006/2007 and the *feasibility* of their implementation. Matrix 1 in the appendix summarises the findings. The focus of activities varied between the four health sub-districts. The planned activities included improving antimalarial drug availability and case management in health units; increasing IPT uptake; and promoting use of bed nets as well as indoor residual spraying.

While some of these activities could directly be carried out by the health sub-district incharges, some required the direct *participation* of the constituent health units and the community members. It was, however, observed that the lower level health units and the communities did not reflect some of these activities in their work plans. Because they were not planned for at the lowest level, there was no assurance that they could or were implemented because they were not *integrated* in lower level units, community plans and those of the sub-county. Some planned activities for malaria control were also not realistic in the sense that some could best be planned and implemented by either the district or the Central Government. For example, the plan to increase drug availability very much relied on the Ministry of Health and Finance which determined resource allocation and funding ceilings. Another example is the proposal to increase IPT uptake by pregnant women without proposing relevant *interactive tasks* for community leaders.

None of the studied health sub-districts had ever done any malaria control needs assessments to guide the design of malaria control interventions. The ideas included in the planned activities originated from the top, or were erratically arrived at, making them less implementable. It was difficult to know the justification for the choice of the malaria control activities out of the many indicated in the Uganda Minimum Health Care package (UMHCP). Health unit committees which were supposed to carry out the *interactive* roles with the community were not budgeted for by any HSD. It was only the health unit committee meetings held at the units which were budgeted for.

Protection against infection and re-infection with malaria for children admitted in health units was also observed to be minimally considered. While most health units with admission services were provided with ITNs for use by the admitted children, some did not use them for fear of thefts by patients and their attendants. Some pediatric wards used nets during the non-malaria seasons but not during the malarial seasons when they were most needed. Overcrowding in wards was given as the reason for the admitted children not sleeping in nets during the malarial seasons. Children who were admitted with other conditions were likely to get malaria because of the limited sleeping space or *capacity* to fix the nets, and inadequate *managerial resources* to abate thefts of nets. Lack of protection against malaria for admitted children was a common phenomenon in all the health units with admission services. A health unit like Kawolo Hospital had window screens to protect against mosquito entry but most were worn out, allowing in mosquitoes. The hospital reported not obtaining capital development funds to do the renovations. Incidentally the "Yellow Star" clinical quality assessment form did not address these aspects of quality of care. Whether or not the disease control policy addresses protection against infection and re-infection of common diseases when a patient or an attendant is in the confines of a health unit is explored in Chapter 7.

Generally, the distribution of nets was not always *integrated* with clinical care in clinical settings. This made it difficult to target the scarce nets to the children most vulnerable to getting malaria. Poor monitoring of children who routinely report to health units with malaria also constrained providing free nets to the most vulnerable children. However, in Mpigi District, the distribution of nets in the community was tagged to the frequency with which a child used homapaks and to the child's immunization status. This resulted in better targeting of scarce resources to children most *vulnerable* to malaria attacks.

The private-for-profit health care sector was mostly engaged in the provision of curative services and minimally in the preventive services and related *political* or *interactive tasks*. Private clinics and drug shops stocked and treated malaria with a variety of antimalarials including those banned by government like chloroquine tablets and injectables, as well as fansidar. Contrary to expectations, most did not stock coartem because it was considered expensive to the people they served. Others had no adequate information about it, thinking that coartem was "a government drug" which should not be stocked by private clinics and drugstores. Many cases were also treated with second line drugs like quinine injections. Below are some extracts giving evidence to this.

Patients first go to drug shops which provide second line drugs for the patient's quick recovery. When this treatment fails, that is when the child is taken to hospital which puts the child on other types of drugs (Senior Health assistant Mpigi district).

A bigger problem is that malaria is not treated according to guidelines. They always use injectables although they attended launching workshops of coartem (In charge of a HSD, Mukono District).

It is apparent that many private practitioners did not fully implement the national malaria treatment policy. The first line drugs used by the private clinics were often different from those recommended by government for uncomplicated malaria. The private practitioners acknowledged this practice but blamed it to the rampant unregulated household self-treatment practices of "malaria". It was estimated by some private clinic managers that seven children out of ten arrived at the private units having received some antimalarials at

home. Parents were reportedly giving all sorts of drugs including chlorophenical, panadol, aspirins, chloroquine, and quinine. Most sick children were taken to the private health care units between 3 and 7 days (Chapter 5). Most of these children who reported to the private for profit health units would be having very high temperatures; and about 2 out of 10 would be convulsing. It was, therefore, argued that the private practitioners handled complicated cases which needed second line drugs. Nevertheless, they treated children who had not received any antimalarials at home, with chloroquine tablets or injectables and fansidar. Some private clinics also gave antibiotics to fight other infections. Effective case management is disrupted by unfavourable *conflictual environmental factors* and especially self-treatment. How well the malaria control policy addresses these dynamics in the management of malaria is discussed in the forthcoming chapter.

Another reason given for treating malaria with drugs outside the treatment policy was that some of the banned drugs still worked depending on the patient, the quality of prescription and use. Some community leaders affirmed this indicating that some children who were taken to private clinics cured, while some did not. The continued use of CQ and SP was justified by the district health officials in the following words:

Many people cannot afford to buy the new drug at market prices. Besides we have not phased out CQ (Heath Officer, Mukono District).

Use of non-standardised antimalarials was further explained by a number of factors: These included: (a) the existence of "fake" antimalarials on the open market, (b) the high cost of the government recommended antimalarials, (c) the limited working capital of private clinics and drug shops (d) limited skills and training of health workers, (e) limited supervision of the private health units by government, (f) limited research into prescription practices for common conditions in the private sector and g) limited research in drug performance on the ground. While these problems reflect weaknesses of either the clients of the private health care system or government, it was observed that the private health sector was not mobilized and organised as a *community* for development of appropriate *social capital* and *empowerment* to influence public policy for improved facilitation and case management.

While the private health care practitioners attended to many cases of uncomplicated malaria and referred many severe cases to the public units, it was reported that they had a behaviour of not giving treatment records to patients. This concern was mostly raised by the in-charges of government health units and relatively bigger NGO units which commonly received some of the severe cases.

This created a lot of problems because you don't know what treatment the child got. This slows recovery because when the child arrives she is first put on panadols until the next day when we start treatment (health worker in an NGO health unit, Ntenjeru, Mukono District)

This finding points to a need to improve case management by requiring health workers in both the private and public sector to easily share information on patients. Information sharing is an important aspect facilitating the *integration* of *service delivery*.

#### 6.6 Health education in health units and health sub-districts

Health education was reported to be the function of the individual health units (both public and private), parish development committees, village health committees (where they existed) and community drug distributors assisted by the local political leaders. Health education was also supposed to be given during the outreaches and on national child days<sup>40</sup>. However, some health workers reported that they did not provide much information to child caretakers because of the long lines of patients and understaffing. Provision of health education to groups of clients called for the designation of a staff to undertake the activity. It was, however, found that none of the six health sub-districts studied had a focal person in charge of health education. Also, none of the health units (with the exception of the hospital), had a designated person in charge of health education.

Although the communities had a structure of VHT/CDD, health inspectors<sup>41</sup> and health assistants<sup>42</sup> responsible for health promotion, many of these functionaries were not

<sup>&</sup>lt;sup>40</sup> The national days were managed twice a year in May and November.

<sup>&</sup>lt;sup>41</sup> Concerned with health promotion and especially sanitation and hygiene, food safety etc in the counties. They are based at the health sub district.

integrating malaria in their work plans. Actually some felt it was not their duty to give health education. Some did not feel confident to educate people about malaria and especially the controversial issues of DDT. The community component of health education for malaria control was also reported not to be well developed. Most health education in both the clinics and outreaches were targeted at the women, leaving out men who controlled the resources needed for curative and preventive activities. Men were not easily accessible except in other fora like the NAADS meetings. However, the NAADS Program integrated HIV/AIDs in its activities but not malaria. This issue is followed-up later when discussing inter-sectoral collaboration for malaria control.

Generally, the community health resource persons seemed not to share the same inspiration and concern for malaria control as the top bureaucrats of central government. A shared concern and inspiration to fight a problem are equally important for the successful policy implementation as is *clarification of policy goals and objectives*. It is the limited concern and inspiration that created limited *commitment* for malaria control. This was aggravated by limited *technical abilities to decide on what is feasible to do*, and to do it. Other reasons for the limited *commitment* of grass-root health workers to fight malaria were the reported detachment of the National Malaria Control Program with the grass-root policy implementers. The National Expanded immunization Program and Tuberculosis Program were reportedly active on the ground because the senior officials of the Ministry of Health regularly visited the local level policy implementers, providing the necessary information and support supervision.

#### 6.7 Capacity to monitor malaria control activities in the study districts

The study districts were not doing any monitoring of malaria morbidity or treatment activities. This is because these were not part of the districts selected to monitor malaria morbidity trends. Malaria morbidity and treatment was monitored in ten sentinel sites distributed country wide. These included Apac, Aduku, Aberi, Kanungu, Kabale,

<sup>&</sup>lt;sup>42</sup> These work under the health inspectors being in charge of sub counties. The are mostly concerned with prevention of diseases and specifically undertake sanitation and hygiene activities; market sanitation, health education in general, disease surveillance; rodent and vermin control, infectious disease control, nutrition improvement and immunization. They also plan for the community to obtain safe water, health units, and public latrines. They mobilize for child immunization and sometimes do the immunization themselves.

Walukuba/Jinja, Masindi, Tororo/Nagongera, Iganga and Mubende (verbal communication with Dr Kamya a Consultant Physician and malaria researcher). Although the study districts were not part of the ten malaria surveillance centers, their contribution or input in the activities of the surveillance centers appeared minimal.

Another finding was that while malaria morbidity trends were being monitored, febrile children were not fully monitored especially when they had to continue treatment at home. Monitoring of sick children at home was not consistently done by the different types of health care systems with the exception of the community health resource persons – the CDDs. The HBMF strategy was designed in such a way that sick children treated with homapak were followed up in their homes to ensure compliance and referral of non-responding children. This was not done for children who received treatment from the health units. Health units were not linked to the community health resource persons which had an ability to reach and monitor sick children in homes. Therefore, health care units did know how well mothers used the antimalarials, and how well children responded to drugs. They could also not identify vulnerable children and families requiring technical support, supervision, and resources like ITNs. This constituted an inconsistency in the procedures (processes) used by different malaria control programs, and lack of *integration of service delivery structures*.

The importance for monitoring sick children at home arises out of the finding that most sick children were taken to health units by women of low education and compliance with treatment was not always satisfactory (Chapter 5). Although Chapter 3 indicated that compliance increased with the use of more effective antimalarials like ACTs, this study found that many children were not treated with Coartem and thus the need for compliance enforcement. Chapter 5 indicated that poor adherence to health worker instruction was a predictor of severe illness in a child; and therefore the need to support the illiterate and semi-literate mothers when their children fall sick. This study found a family which had ever lost three children from "malaria" but this family had not been followed up to identify the risk factors in the household *environment* and avert subsequent child deaths.

Major reasons given for not following up some high risk children were well articulated in the quotation below.

Following up parents is difficult because the catchment area is big; the staff lack the time to follow up patients, patients come far from the unit;... and it is not part of our job description (In charge Bulwadda HC 2, Kabulasoke Sub county Mpigi District).While opportunities existed to use CDDs to provide the necessary support to all sick

children at home, it was observed that the CDDs might not know the sick children who visited the health units unless some mechanisms were worked out to inform them. There were also arguments that giving the CDDs more work would necessitate paying them a wage or other incentives which local government functionaries considered impossible.

#### 6.8 Resource availability for malaria control activities

#### 6.8.1 Antimalarial availability and quality

The importance of studying the *availability* of antimalarials lies in the premise that the *right to the highest standard of health* cannot be achieved unless critical resources for the management of malaria are available. Drug availability was found by this study to be highly valued by the households and health workers.

Many respondents (36.7%) in both districts reported that antimalarials for the treatment of uncomplicated "malaria" were sometimes unavailable in government units. There was no significant difference in this response between districts with 44% and 46% of the respondents in Mukono and Mpigi respectively, reporting inadequate drug supplies for uncomplicated malaria. Likewise, between 48% and 45% of the respondents reported unavailability of drugs and supplies for severe malaria in government units all the time. The situation of drug availability in NGOs was different from that in government units. About 72% of the respondents in both districts reported the availability of drugs for severe malaria in NGO-owned and managed units. There were no significant differences in the responses given in Mukono and Mpigi district. Between 71% and 73% of the respondents in Mukono and Mpigi reported that NGO units constantly had all the drugs for severe malaria.

The household survey findings were validated with an analysis of the antimalarial stock patterns in selected health units. This analysis involved studying the drug stock-cards of seven government units covering two financial years -- 2005/2006 and 2006/2007. The data extraction involved establishing the number of days different antimalarials were out of stock in each unit. The stem and leaf in Figure 7 shows the results.

There was a great variation in antimalarial drug stocking patterns in government health units. While different types of antimalarials were in stock at the time of the study, most had been out of stock at some time in the year and a half preceding the study. An antimalarial which had been out of stock for the longest period (a mean of 480 days) was quinine tablets. A drug which had never run out was the red homapak. Coartem for children and also adults run out of stock for a mean period of 150 days and 270 days respectively. Antimalarials which were not available on the day of study were CQ injectables and quinine injectables. Health units continued to stock the non-recommended drugs of chloroquine tablets and injectables.





type of drug

Source: HMIS 015. STOCK CARD

The constant non-availability of the recommended drugs meant that the sick children were treated with non-effective drugs or were told to buy the antimalarials from the open market. Both actions constituted a risk factor especially for children from very poor families because as evidenced in Chapter 5 such families resorted to buying cheap but ineffective antimalarials, giving pain killers or herbs. The non-availability of antimalarials in a health unit also implies the existence of *inequities* in accessing quality of care by the same child in a space of time. In other-words children who fell sick were not always assured of the same quality of care from the same health units across a time period; and this partly explained the sustained morbidity and mortality of under-fives due to malaria.

The continued stocking of banned drugs meant that some children continued to receive ineffective drugs leading to treatment failures. The continued stocking and use of banned drugs was justified on the grounds that nurses demanded their procurement urging that chloroquine tablets were still effective in the treatment of malaria in some children and in managing other conditions. Secondly, it was reported that by the time the new treatment policy were effected, units had already big supplies of the banned drugs and it required time to replenish them. Nonetheless, some health units used the banned drugs as buffer stocks for coartem stock outs. This study found that the management of the transition from the old malaria treatment policy to the new ones was problematic partly explaining the persistent morbidity and mortality from malaria.

Figure 8 shows the stocking pattern of antimalarials in 7 health units for which information was obtainable. There was no uniform pattern in antimalarial drug stockouts between units of the same level; and units located in the same health sub-district and district. This could be due to the limited number of units studied or to differentiated *managerial resources* of the in-charges. Drug stock-outs had taken the longest mean period (about 480 days) in the health center 4 of Mpigi Town Council and health centers 3 of Seeta Namuganga. At the time of the study 4 units out of 7 had at least one antimalarial in stock. Three units did not have any antimalarials. Maddu health centre 3 had run for about 50 days without any antimalarial. Children reporting to the unit with uncomplicated or severe malaria were bound to worsen or die, especially if their guardians lacked the money to buy drugs from the open market or take them to a far off public unit.

The leading reasons for the drug stock outs included managerial problems, government financing and allocation policy, and limited funds. Delay to restock was associated with the long procurement process with the National Medical Stores (NMS)<sup>43</sup>; delay to make orders; unpaid debts for drugs; delays of the central government to release funds to the NMS for each unit; and unavailability of certain drugs in the NMS. The drug financing policy was reported to be a problem in that allocation was universally based on the health unit size/function; disregarding the unique cases and problems handled by each unit. For example, it was reported that Kawolo Hospital was allocated the same amounts of money as other hospitals despite its location, nature of health problems handled, size of its catchment area, and total caseload. Kawolo Hospital and also Mpigi Health Centre 4 had a big burden of motor vehicle accidents and HIV/AIDS which competed for the same resources with malaria. The burden on resources was reportedly too big, yet the allocated funds were reducing.

<sup>&</sup>lt;sup>43</sup> This is a corporate body mandated to import and sell essential drugs to the government health care units.

Figure 8: Stem-Leaf Plot of the means and median number of days antimalarials were out of stock in each of the 7 health care units of Mukono and Mpigi districts (in a one year and a half between 2005/2006 and 2006/2007)



#### Name of health unit

#### Source: HMIS 015. STOCK CARD

*Funding inadequacies* made it difficult for the lower level health care units to obtain all the drug quantities they requested for. Coartem was freely given to the health units by the MOH using donor funds and was, therefore, not deducted from the credit line funds with the NMS. Coartem had a ceiling beyond which a health unit could not go and was sometimes not available with the NMS. In the absence of drugs in the NMS, the units (through the District Health Officer (DHO)), bought drugs from the open market or from the Joint Medical Stores using a PHC grant. Use of the Joint Medical Stores<sup>44</sup> (JMS) was, however, problematic because it always required a cheque or cash from the district which was difficult to organize in a timely manner when faced with drug shortages.

<sup>&</sup>lt;sup>44</sup> JMS is an NGO importer and seller of drugs and medical equipment to NGO units and also government units on cash basis.

Antimalarial orders and those of other drugs were reportedly based on the patient cases received in the last two months, drug stocks still available and needed, and funds allocated to the unit. The cost of drugs also affected what was ordered. Drugs which could cheaply be obtained from the open market were commonly not ordered from the NMS and this included some antimalarials. HSDs did not consider individual diseases when ordering for drugs. This might have created drug shortages for malaria control especially during the malarial seasons.

One of the *coping strategies* adopted by some health units during stock-outs was rationing of drugs. Drugs were available for two or three days of the week. This strategy was commonly applied in the hospital and health centre 4. It was reported that most people knew the days on which health units received the drugs; and they visited the units just on those days. Drug rationing implied that some sick children were kept at home to wait for those days when government units had drug supplies leading to delays in health. These delays could subsequently, lead to progression of mild malaria into severe forms and deaths. Drug rationing also meant that guardians had to negotiate their environment to obtain funds to buy the drugs from the open market on days drugs were out of stock. The carers could either sell their crops or animals to obtain the necessary drugs or borrow from their informal support systems. Looking for markets to sell crops and animals would sometimes take time to raise the cash needed to pay for drugs. The time taken to look for the money and obtain drugs would increase the likelihood of uncomplicated "malaria" developing into a severe condition. Likewise, Chapter 5 indicated that there were limited support systems to help especially the poor families because of the high incidences of "malaria" in families, the rampant poverty, low social capital and especially bonding, as well as the tendency to think that illnesses were a concern of the individual family. Thus, drug shortages in government units and rationing create many stressors especially in poor households and thus the need to target policy and program resources and attention to the most poor and disadvantaged whenever there is a stock out.

This study also obtained information on the perceived quality of antimalarials. Many health workers and household heads (especially in the urban areas) reported the existence of fake antimalarials on the open market. The fake antimalarials were reportedly cheaper than the "true" antimalarials.

...but the drugs from the National Medical Stores (NMS) are good. But when I was working in private practice, the medicines I used to see were very much inferior... One time I disposed of chlophenical and ampicillin (health worker in Nakifuma HSD).

Most fake antimalarials were reported to be manufactured in India. Most drugs used in the study communities had been imported from either India, Pakistan or both.

Those from India are of a rather poorer quality. We have tried to test this out with quinine injectable; one child given a German made drug recovered faster compared to the child given an Indian made drug (Health worker, Mukono district).

Antimalarials, (particularly the tablets) made in India were reported by many health workers to be less effective than those made in the western countries; and yet the fake ones were about four times cheaper. Most drug shops and private clinics in the studied communities preferred to invest in the cheaper type of antimalarials which the community could afford. The cheap ones made recovery very slow and re-occurrence of malaria fast within a very short time. The presence of fake antimalarials resulted in some health workers changing their prescription patterns. Some health workers reported to start treating a sick child with the second line drug; that is, quinine intravenous (IV) first, followed by CQ/SP. Although children recovered, the long term impacts of such practices may not be known needing more research.

The perceived cause of the existence of fake antimalarials on the market was characterized by accusations and counter-accusations between the private health sector workers and the government functionaries. The private practitioners attributed the phenomenon to corruption of government officials who permitted entry of inferior drugs into the county. The National Drug Authority (NDA), an independent corporate body has the mandate to ensure the quality of drugs. The district health officials in Mukono acknowledged the presence of the inferior drugs, especially in the private sector, and also the problem of poor use of drugs by individuals. The existence of fake drugs was further blamed on the private sector practices by the government health workers. The private health sector was alleged to keep expired drugs. Expired drugs were commonly found during government inspections. While health workers in government units indicated that

health workers had the right to reject any sub-standard drug supplies, the private clinic practitioners and drug shop managers were not organised in the study communities and, therefore, had limited *social capital* and a *common voice* to raise such issues with government and suggest solutions. At the time of this study, the private health sector lacked *collective efficacy* to work on the evidenced *conflicting environmental factors and disruptions* that negatively affected their operations and outcomes.

The existence of poor quality antimalarials had not been quantitatively documented in the districts. Health care managers of the districts and HSDs did not have the empirical evidence on this nor did they have the *technical resources* and other resources (such as funds, time, motivation) to do operational research on these issues. The districts' functions were limited to requisitioning, using, and accounting for drugs and funds. Both districts did not do any studies on effectiveness of antimalarials because of poor funding.

Such studies can best be done by the Surveillance centres because they have the money (Deputy DHO, Mukono district)

There was also no mechanism or structure to enable the clinicians to input researchable questions into the national malaria control monitoring and research agenda, or into that of the country's research institutions. Monitoring of drug quality was reportedly done by the drug inspectors who were based at the district and health sub-district headquarters. There was no proactive reporting structure for community members to report suspected bad medicine. Likewise, while many district officials alluded to poor household treatment practices of malaria, they could not indicate how big the problem was, its distribution and the reasons for the existence of the problem. They had also not forwarded this problem to research institutions for study. Likewise, the research institutions were not effectively networked or *integrated* with the malaria control program implementers. Research institutions had not created structures to identify, and define clinical researchable areas required by practitioners on the ground. More quantifiable studies need to be done to sort out the most significant factors in the drug quality discourse.

The use of non-standardised antimalarials by the private sector was also associated with the high cost of coartem. It was estimated that an adult dose cost between 12,000/= and
15,000 = (US\$7-9). The dose for an under-five child was estimated to be about a half or a quarter of the price of the adult doze. This may be expensive especially in many rural communities where 30% of the households cannot earn US\\$1.00 a day.

Government should subsidize coartem and put it on the open market. Government knows the poverty of the people. They cannot raise the cost of coartem. This is worsened by the fact that public units where coartem is placed are far. For example, Mawuki is about 3 miles from here and Kifampa is 5 miles away (Private Clinic practitioner, Kabulasoke Sub-county, Mpigi District)

The limited working capital of the private-for-profit units was also blamed for the use of non-standardised antimalarials. The limited capital could not enable the private for-profit clinics to stock the right kind of drugs. The limited capital cannot also enable the private practitioners to put in place the right facilities such as laboratory services for better management of malaria. A statement like that one below says it all.

Can government give incentives or even loans to private clinics to stock adequate drugs because they are doing a good job? Can government remove taxes on drugs?" (LC1 Chairman Seeta Namuganga, Mukono District).

Accessing incentives from government to improve the management of malaria cases and other conditions may require a *common voice* and hence organizing the private clinics and drug shops into an association able to lobby, and *negotiate* for support from government. At the time of this study the private health care sector was not organised and lacked a common voice to demand for facilitation to improve health care and effectively to contribute to the reduction of morbidity and mortality associated with malaria. There was no government or NGO service in the two districts to organize, build the private practitioners into networks with an ability to negotiate and lobby for better facilitation from government.

#### 6.8.2 Staff availability and quality in health care units

The discussion of health worker *availability* is important because it is a core element in policy implementation and in the attainment of the *right to health*. Availability is discussed in relation to the extent vacancies especially in government units were filled; as well as the actual physical availability of health workers in health units at the time period they were expected and when they were most needed by child carers. Staffing levels were studied for two health sub-districts of South Mukono, (Mukono District), and Gomba

(Mpigi District) for which full information was available; and for CDDs in all the studied communities.

The distribution of homapaks to the under fives started in Mukono and Mpigi districts between 2004 and 2006. In most villages two people were reported to have been selected and trained to distribute the antimalarials to sick children. However, with time some CDDs had lost interest and had stopped collecting and distributing the drug. This was especially true in Mukono district. Some of the community drug distributors had been replaced while others had not. CDD availability has been discussed and presented in section 6.2. While the village leaders were supposed to mobilize funds from the community to facilitate the CDDs with transportation to collect antimalarials from the health units, this was not being done.

The major reason explaining the attrition rate of CDDs was the limited facilitation and support given to them by local government and the communities they served. The CDDs used personal money or family transport to collect drugs from the nearest health care units. Supervision was minimal except in Mpigi where the program was being supported with WHO funds. The perception that homapaks did not contain strong drugs and reduced use by the people, also led to demotivation and withdraw from the HBMF Program. This was worsened by the Ministry of Health's introduction of a new drug, Coartem, for treatment of uncomplicated malaria. In otherwords, two treatment policies were being implemented concurrently which led to confusion and mistrust of the homapaks by the community. Although some people had stopped using homapaks, there were still some households which used them and the children recovered.

At the level of the health units, Mukono district was relatively better-staffed than Mpigi District. The minimum and maximum staffing gaps in Mukono District were 28% and 38 % respectively. On the other hand, staffing gaps in Mpigi were 40% and 70% respectively. Generally, lower level units were less staffed compared to higher levels of care (hospitals and health centres 4) in both districts. This constituted a disharmony because as seen in Chapter 5 most of the uncomplicated malaria cases sought care from

the lower level units. In most units of both districts there was a tendency for units to recruit many junior staff in the vacant places of senior staff. This implied that many severe and complicated cases were being handled by health workers with limited knowledge and skills or *capacity*, which partly explains the sustained deaths and disability of under-fives from malaria.

The staffing gaps by cadre of staff was analysed for Kawolo Hospital for which full information was available. The largest staffing gap (52%) was with other administrative and support staff such as medical social workers, nutritionist, secretaries, supply officers. Among the medical professionals, a large staffing gap was with the nurses (27%), followed by allied health workers (25%) and doctors (15%). (District Health Annual Report FY 2005/2006). A relevant cadre of staff which was generally missing, especially at health centre 3 were the laboratory technicians. This implied that malaria was presumptively treated just like the lay people did at home. The extract below highlights the impacts of presumptive treatment by health workers.

We treat fevers and possibly not malaria leading to wastage of malaria control drugs. This area has typhoid because it is near the lake where people take unsafe water. The patient stays with the other disease longer; it is also time and money wasting on the part of the patient and health unit (in charge of Golo HC 3, Mpigi District).

Most primary health care units in both districts closed at 5.00 p.m., yet the HC4 and HCs 3 were expected to open 24 hours; while the HC2 were to open 12 hours. This study found that health workers worked half day on Saturdays and closed completely on Sundays. The major explanation given was lack of accommodation for staff at the health units. This meant that if a child got severely sick he/she would not get the desired treatment promptly. Although lack of accommodation was given as an excuse, it was observed that engagement in private clinics and drug shop management was also another hidden factor threatening staff availability in public units. This had another distal explanation such as poor remuneration of health workers by government. Although the proportion of health workers working in both sectors may not be known, it is possible that this practice may be depriving of poor people access to trained people in government units where they seek services for severe malaria. There is thus, a need to improve the

remuneration of government health workers for purposes of improving their *availability and accessibility to the poor*.

Staffing levels were not tailored to the malarial seasons in the health units which were studied. Malarial seasons involved an increase in the patient load of children and adults suffering from malaria and a subsequent change in the patient /clinician ratio in both the out-patient departments (OPD) and the wards. For example, in Kawolo Hospital, the number of child cases admitted with malaria during the non-malarial seasons was estimated at 40 children<sup>45</sup>. In malarial seasons the number went up to between 60 and 70 children. This increase was, however, not matched with an equivalent staffing level. It was apparent that sick children waited for long before they were attended to. Also unit staff got fatigued and *stressed* with a resultant possibility of ineffectiveness. These observations are well supported and explained by a health worker in Kawolo Hospital:

One of the reasons why mothers do not wish to use the hospital is the long lines and time of waiting due to few staff. The setting of ceiling of staffing set by the Ministry of Health is a problem because it does not consider the programs on ground. By the time a clinical officer reaches the last patient in OPD, it is wondered whether he/she is still able to diagnose properly (Health worker, Kawolo Hospital)<sup>46</sup>

The changes in the health worker/patient ratios during the malarial season compromises the quality of care *threatening* the quality of outcomes. Thus, there is need to relieve this stressful situation by improving the level of *person-environment* fit; that is, the demand for services with the provision of the human and other resources.

Another major *threat* to staffing and staff *availability* was the volatile use of *integration* of health programs. While all health programs in public units were expected to be integrated, it was found out that certain programs such as ART and PMTCT retained certain vertical features which interrupted staff deployment and availability for malaria patients in OPD. The new programs offered small allowances to staff, took staff for trainings and workshops, making them more attractive to work with than the normal OPD services. Furthermore, some programs and especially the HIV programs were introduced as projects with drugs but without providing extra staff. This mixture of planning

<sup>&</sup>lt;sup>45</sup> Kawolo Hospital has a capacity of 28 pediatric beds

<sup>&</sup>lt;sup>46</sup> Staffing norms were reviewed every 5 years.

approaches in the same institutions depleted the already existing staffing position, leading to poorer access of malarial patients to health workers in some units.

Skills availability among staff to manage malaria, was not systematically studied for both the public and private sector. But it was reported that most staff in the public units in both districts had been trained in IMCI strategy and also in the use of COARTEM. Few private practitioners were trained in the new malaria treatment policy. Organising training for the private practitioners was partly complicated by the informal nature of many drug shops and private clinics, many of which were not registered with government. Their informality made it difficult to integrate them in the mainstream district and HSD plans. This study, however, argues that the problem is that the few registered and licenced clinics and drug shops were also not *organised* and had low *social capital* to negotiate incentives attractive enough for others to register. Most health unit managers including that of Kawolo Hospital did not have a plan for capacity building for malaria control. Focus of the hospital was mainly on HIV/AID programs. In other words malaria is not accorded priority especially in situations of limited resources leading to an *ends-based non-compliance* problem.

Although there was no systematic study of the capacity of the health workers to manage malaria and other political activities, there was some evidence in both districts indicating that some private for profit health workers were unskilled or did not regularly obtain refresher courses on the new clinical knowledge and skills of managing common conditions. The limited skills are evidenced by findings of a survey which was carried out by Nakifuma HSD among the 5 maternity homes, 11 clinics and 69 drug shops.

Most drug shops offer the services of clinics such as prescribing, and treatment. Most drug shops lack operational licenses, and some drug shops and clinics were being run by unqualified personnel. Although they claimed to be qualified they had no supporting documents..... In Seeta Namuganga, for example, 12 clinics/drug shops had been registered and licenced out of 21 operating on ground. In the 5 sub counties studied i.e. Seeta Namuganga, Kimenyedde, Kasawo, Ntunda, and Nabbale, there were 110 clinics and yet only 85 (77.3%) were registered and licenced (Health Inspector's report dated 20/4/2005).

The private clinics have been trained how to manage malaria and have been given the Uganda Clinical Guidelines (2003) and the National Guidelines on the management of common conditions. But it is long ago when I last mobilized and trained private

practitioners. But the Drug Inspectors and in-charges of HSD are supposed to monitor and support them (District Health Officer, Mpigi)

The tendency for a group of people to undertake tasks for which they do no have *capacity* nor the *legitimacy* has been pointed out earlier to *threaten* the success of policy implementation. Corollary, the tendency for drug shops to undertake clinical management tasks of private clinics may threaten the quality of care and ability to *attain the highest standards of care and health*. More research would be needed to establish the extent of the impacts of these role exchanges.

Continuing education for full time private practitioners was not only minimal, but support supervision by government was also minimal or non-extent in both districts. Managers of the six health sub-districts studied reported that they had minimal relationships with the private health care sector.

Private clinics are not willing to be supervised because they did not cooperate when it was tried. The problem is, licensing is done by the district and supervision by the lower health units (in charge HSD, Mukono District).

Hence, government health unit managers reportedly supervised only their own unit staff. The major reason given for failure to supervise the private practitioners was the poorly *integrated policy delivery structures*. The drug shops were supposed to be supervised by the district and in some places by the drug inspectors based in the health sub-districts; who then reported to the National Drug Authority<sup>47</sup>. On the other hand the private clinics registered with the Ministry of Health. The parallel supervisory structures of the drug shops and private clinics could be a risk factor sustaining child morbidity and mortality due to malaria because the supervisory content is different yet both sub-systems undertake the same health care activities for disease control. There may be need for disease control policy to harmonize the structures for the supervision of the drug shops and private clinics.

<sup>&</sup>lt;sup>47</sup> It was understood that in the nearest future, it would be the regional drug inspectors to register the drug shops.

## 6.8.3 Funding of malaria control activities in units

Government health care services were funded with four types of grants: the delegated funds, the Poverty Action Funds (PAF), the Primary Health Care funds (PHC) and credit line drugs. The delegated funds were meant for recurrent expenditures such as salaries. PHC funds were apportioned with 50% being allocated to buy drugs, 30% for integrated outreaches, 10% for administration, and 10% for health unit management. The credit line funds were for drugs and these were deposited bimonthly with the National Medical Store (NMS). Each unit ordered drugs in accordance with the funds allocated to it and credited with the NMS. It was when the NMS did not have the required drugs that the units used the 50% PHC funds to buy drugs from the Joint Medical Store (JMS)<sup>48</sup> or private pharmacies.

One major finding relating to funding was that the funds provided were too small to enable the local level actors to effectively implement curative and preventive activities. For example, the actual budget of Kawolo Hospital for drugs was reported to be 980 million Uganda shillings per year but the unit received only 112 million (11.4%) with a funding gap of 89%. This created shortages of drugs, calling for rationing. Funding shortages were also reported by the lower level units. For example, in FY 2005/2006 Seeta Kasawo Namanoga HC2, in Mukono District was supposed to get 6,240,000/= but instead got 1,600,000/= (26%). Lower level health units in Mpigi also received just about the same amount of money. Financial resource allocation did not take into account malaria seasonality in both districts. The total financial envelop was not only small, but was reportedly decreasing partly due to the newly opened units.

We are running a declining budget. In FY 2005/2006, the 50% of the recurrent budget was 290,489,000/= while in FY 2006/2007, the budget was 283,752,000/=. The budget for last financial year 2005/2006 was 117,694,000/= while for 2006/2007 it was 116,694,000/= (Medical Superintendent Kawolo Hospital, Mukono District).

Although the district health officers could reallocate funds from one unit to another, "the cake is so small.... It has been constant for the last 5 years and is reducing by 5.2% in FY 2007/2008" (DHO Mpigi district).

<sup>&</sup>lt;sup>48</sup> Joint Medical Store is a private-not-for profit NGO whose mission is to supply medicines, medical equipment, and related health care supplies to NGO health units and also government units. (JMS February, 2007)

It was also reported that there was always a difference between the actual needs of units and the predetermined budgets. The standardization of financial allocations caused problems in some health units, particularly those located on the highway which handled the bulk of motor vehicle accidents. Accidents in hospitals like Kawolo and Mpigi Health Centre 4 consumed a lot of resources depriving other conditions of logistics. These external factors created *disruptions in the policy environment* with resultant policy implementation failure. Until the costs of such interruptions to budgets were estimated and catered for in a special way, common problems like malaria will continue to be deprived of essential resources leading to poor management and outcomes.

Other findings were that: a) financial resource allocation did not vary with the malarial seasons; b) funding accorded more importance to curative and less to preventive programs; and c) health education was not apportioned a percentage of the PHC funds and neither did health sub-districts or units allocate adequate funds to it. The extract below summarises the findings.

...Prevention is not accorded priority; emphasis is on drugs and treatment. No manuals on malaria or mosquitoes exist. Plans to provide health education are done but not executed due to lack of money. Ten percent of the PHC funds are meant to be spent on prevention but prevention is now restricted to child immunization and outreaches. Resource allocation to preventive activities are inadequate. Doctors were reported not to have the capacity to conceive of behavioural change activities for malaria control... Additionally, people are not eager to spend their time on sessions discussing prevention (health assistant, Mpigi district).

As indicated earlier, health education was expected to be funded with locally-raised funds. Other "soft ware needs" of programs such as community mobilisation, social capital development, behavioural and attitudinal change for disease control were also relegated to unreliable small revenue generated by sub-counties and districts. Even if locally generated funds were adequate, local politicians preferred to invest money in infrastructural development and not community organization for behavioural and attitudinal changes – the "soft ware needs" of programs. Political performance is more associated with the number of health units or schools constructed rather with the "soft ware" aspects of human development whose outcomes take long to be observed. For

example, in the financial year 2005/2006, one health assistant in Mukono District budgeted for 720,000/= to carry out home visits, school inspection, food handlers, water and sanitation and health education. But only 80,000/= was released, and he could, therefore, not do any health promotional activities in the communities. Usually local politicians realized the need to invest in soft ware needs quite late when their years of service had run out.

## 6.9 Inter-sectoral collaboration for malaria control and existing opportunities

Collaboration with other sectors in the fight against disease is one tenet of primary health care (PHC) and an aspect of *social capital*. This section presents findings relating to the activities undertaken by other actors such as infant schools, the community development departments, the faith based organizations, community based organisations (CBOs), the National Agricultural Advisory Services (NAADS), fisheries departments, and industries. The choice of these particular institutions in this discussion was based on the following criteria: a) an institution serving under-five children, b) having the mandate and abilities to mobilise and sensitize the community on developmental issues, c) being engaged in production activities and poverty alleviation, d) founded on the trust of its membership and having influence on its members; and e) directly or indirectly working in an environment that breeds mosquitoes.

## 6.9.1. Infant and primary schools

This study found that it was common for young children to fall sick while at school. For example, in the household survey 76.2% of the respondents reported that their young children had ever got "malaria" while at school. Some children manifested malarial symptoms while at school, while others went to school when sick or recuperating. The schools witnessed both mild and severe malaria in young children. One child was reported to have died while at school in Seeta Namuganga. It was estimated that between one and 5 children fell sick while at school each day.

Regardless of whether the parent knew that the child was sick or not, the common reactions of school teachers to sick children was to send them back home. This was mentioned by 43.2% of the respondents in the household survey. The sick child was

sometimes either accompanied by another child or sent back home alone. About 11% reported that their children were given an antimalarial and panadol, while 5.2% were given antimalarials alone, and 5.5% were given panadols alone. In 3.7% of the cases, the children were taken to a health unit nearest the school for treatment. The medical treatment bill was met by the parent of the sick child. In situations where the teachers did something, 61.1% the parents were not informed of the drug the teachers had given the child.

All the eleven teachers interviewed indicated that although malaria was common during the rainy seasons, they had no policy to guide them in the management of fevers in children.

A school is required to have a first aid box containing scissors, bandages, razor blades glucose, liniment, and drugs for dressing wounds. There are no malaria drugs in the package (Head teacher Kawuna Public School).

Some few infant schools visited stocked panadols, CQ and SP. They did not have homapaks. Most head teachers knew about homapak but did not know how to access it implying that the health systems and education systems were *not integrated on the issue of managing malaria*. Children who got convulsions while at school were given panadols with a tepid sponge to reduce temperature. Some few schools which stocked CQ and SP reported that they did so because

If we do not provide treatment, the children sometimes return to school the next day without having received any treatment at home. ... The reason is that most parents work in the islands and take time to come back, leaving siblings at home with little money. (Deputy headmaster Katosi Central, Ntenjeru sub-county, Mukono District)

Some teachers did not know whether every school was supposed to have a first aid kit. Teachers thought that it would be good to have an antimalarial in the first aid kit but also acknowledged they did not have the expertise to administer drugs. Other *challenges* and *threats* to schools managing malaria were:- a) teachers did not know the dosages of antimalarials to give; b) they had never been trained in the management of fevers in under-five children although some had obtained training in the management of bilharzia; c) the cost of the drug was prohibitive for the infant schools most of which were privately owned and managed; d) they could not know what antimalarials and doses the parents

had given the child before; and e) some children came to school without having taken any breakfast which meals would be needed before drugs were taken.

While pupils were taught about different diseases in the curriculum and as part of their extra curricula activities, malaria had no manual developed for use by teachers. Absence of a well developed manual for use by schools made teachers pay minimal attention to malaria. Malaria was discussed as a science subject in junior and upper primary, covering transmission and prevention. Malaria was not as comprehensively addressed as HIV/AIDS which had a published manual developed as part of the Presidential Initiative on AIDS Strategy for Communication to Youths (PIASCY). This implies that participation of other sectors in malaria control requires development of tools /manuals appropriate for the actors. Generally, schools were not effectively used in the fight against malaria for improved health of the pupils and their families thus constituting a missed *opportunity*. Nonetheless, there was agreement among the teachers and head teachers that schools could ably be used to sensitise the community about malaria.

... Once you teach the child something, the child learns to do it e.g. putting on shoes.. The problem is that nobody seems to care. There is no sensitization. Somebody said that 'government takes the taxes; but we are nobody's business'. People are ignorant and nobody helps in every sector. There is nobody to sensitise and remind people to do things; household priorities are upside down; some people have the means to do things but they do not; they are stubborn... (Head teacher Mehta Nursery School)

What is causing the disease to spread much is ignorance. Malaria lacks sensitization. Schools can be used to sensitize communities if given the opportunity. The way government informs the public about malaria is through radios but, every household may not have a radio. Even those who have radios prefer to listen to music..." (teacher at Katosi Central)

#### 6.9.2 Community Development Departments

Community development departments are social work agencies with the mandate to mobilize and sensitize communities to embrace and fully participate in government development programs. They are also the experts in influencing behaviours and attitudes that impact on development. The community development departments serve all sectors plus managing their own functions of fostering adult literacy, protecting and promoting the rights of vulnerable populations such as women, children, persons with disability and the aged. Community development departments were minimally involved in community mobilisation and sensitization for malaria control. Out of the six sub-counties studied only two (Ntenjeru in Mukono District and Mpigi Town Council) had a plan for community mobilisation and sensitization for malaria in the FY 2007/2008. The community development department of Mpigi Town Council had planned to secure more insecticide bednets at subsidized prices for the people.

Although community development workers are the experts in effecting behavioural and attitudinal changes, the majority did not mention this as something they ever engaged in or planned to do in the future. They were not at all involved in addressing behaviours and beliefs that threatened the effectiveness of the malaria treatment and prevention strategies. They did not deliberately plan together with the health department on issues relating to mobilisation, sensitization of communities on, for example, creating communities' demand of bed nets. This is well illustrated with the extract below.

The health department has not or rarely engages the community development department in its activities. However, the Community Development Department engages the Health Department when it gets the money for HIV/AIDS. I do not want to appear to be imposing myself on another officer because he/she might think that I am after their money (Senior Assistant Health Educator, Mukono district)

I used to meet with the Inspector of Health but, he later complained that the CDO was over-superimposing; that she was doing his work. They did not want me to know what they were doing (CDO Mpigi District).

There is lack of appreciation of the work of the CDO. This is shown especially when allocating resources. Most people prefer to allocate resources to the hardware and not software. The politician has fallen prey to this. Politicians often tell the people during political rallies that they will construct this or that health unit. Where government's heart is, is where money will be invested (SCDO Mukono district).

Nonetheless, all the CDOs reported that they sometimes collaborated with the health department officials at different levels to implement HIV/AIDS projects, water, and sanitation programs.

Four explanatory factors could be discerned for the minimal collaboration between the health departments and social work departments at community level. Firstly, is the

power struggles over resource control and professional jurisdiction over health problems. The power conflicts blur the actors to consider the comparative advantages and potentials of each to contribute to the fight against malaria. The power struggles are aggravated by the *attitudinal mismatch theory;* that is, public servants having their own agenda which conflicts with those of the principal's directives of inter-sectoral collaboration. The power struggles could also be due to an earlier mentioned problem of lack of a shared concern and inspiration to fight the problem. This study is of the view that local government does not feel convinced that it has the obligation to secure people's right to health and *account* for the high morbidity and mortality of children and others. The existing conflicts between political and technical people as well as between professionals impede disease control and prevention activities.

Secondly, actors at community level lack the *technical resources* to analyse aspects of malaria control and prevention to be worked on by the social workers and other professionals. Thirdly, is the tendency to regard malaria as a purely bio-medical issue yet as observed in Chapter 5 and in this one, malaria is largely sustained by behavioural, community, and institutional organizational problems. Fourthly, is the issue of *powerlessness* of community level social workers whose work of community mobilisation and sensitization has been relegated to non-dependable sources of local government revenue. This finding implies a need for both the health and social workers to be empowered with political skills to lobby for improved facilitation from government to effectively service all the social service sectors.

Community Development departments were also reported to have been beset by grave understaffing brought about by the delay of the districts to fill the vacant posts of the community development officers, their assistants, and parish chiefs at the sub-county levels following the civil service restructuring exercises in the districts. Thus *non-availability* of staff in all vacancies impeded policy implementation and attainment of the highest standard of health for children.

## 6.9.3 Fisheries Department

The Fisheries Department based in the district of Mukono district, was visited to assess what it was doing about malaria or the vector, and the extent malaria was *integrated* in its plans. The Fisheries Department in Mukono District was concerned with the removal of the hyacinth weed from Lake Victoria for the sake of preserving the lake and the fish. The hyacinth affected the fish breeding sites, accelerated water evaporation from lake, and also created breeding sites for mosquitoes. Malaria control was, therefore, indirectly addressed by the removal of the hyacinth weed.

The Provisional Fisheries Sector Strategic Plan of the Ministry of Agriculture Animal Industry and Fisheries had mainstreamed HIV/AIDs but not malaria. Likewise the Fisheries Officer had integrated HIV/AIDS in his programs on the landing sites by obtaining and distributing condoms to fishermen. He also worked with the tsetse fly control officials but not the malaria control program. The Department and the Beach Management Committees had obtained bilharzia drugs and distributed them too. Although many fishing communities on the Lake Victoria shores complained of increasing mosquitoes and malaria, the Fisheries officer did not know what else he could do about malaria. Thus, lack of *comprehension* of the tasks to undertake impeded integration of malaria in the Fisheries activities.

#### 6.9.4 The NAADS Program

Some parts of Mukono district had the NAADS program. This program was doing a lot in the agricultural and animal husbandry development sector, with a relatively good budget. In Seeta Namuganga, for example, it was engaged in promoting improved banana plantations for groups and individuals, and setting up local chicken breeding centres. In the FY 2005/2006, the NAADS Program in Seeta Namuganga obtained 56 million for the farmers. Services provided under the NAADS program included advisory services on demand, technology development, provision of tools to farmer groups on credit; and education about modern farming, gender, HIV/AIDS, and nutrition. Among the major threats to productivity in a sub-county like Seeta Namuganga were the limited land for production, unreliable rainfall, deforestation and malaria. Although malaria was a big

*threat* to productivity and the attainment of NAADS goals, malaria was not *integrated* in any of its activities. This constituted a missed opportunity.

## 6.9.5 Community based organisations

Community based organization (CBOs) are self help groups made up of residents of the same village or parish. The number of CBOs varied across communities with some villages having social and economic clubs while others did not. Some of the common CBOs were NAADS groups, Nigina, Munno mukabi, Kigudde wani. The Nigina self help groups were concerned with household development. Group members gave gifts such as plates and cups to the members in rounds until all members got. Munno mukabi social cultural groups assisted in situations of deaths of community members to collect food for the mourners. Kigudde wani helped members to organize social functions like weddings and graduation parties.

Other than a few mutual support groups which collected money for illness, the majority of social groups did not address malaria directly. This is because sickness management was regarded a family business. Social groups like munno mukabi helped after the deaths of children had occurred indicating that their values were upside down. Nonetheless, these self help groups presented an opportunity to mobilize for sickness when *organised* accompanied by *conscious raising* about malaria.

## 6.9.6 NGOs: the case of the Area Development Program Nkozi

The Area Development Program (ADP) based at Nkozi Sub-county, Mpigi District, is a World Vision funded development program. Although malaria is a threat to development efforts, the ADP did not have a malaria control program for the entire community. As a child focused agency, the ADP contributed to the medical treatment of its sponsored children, orphans, and vulnerable children (OVC) and also provided bed-nets to the same. The agency did not plan to give out nets to the community because it had been thought that the government had given out free nets to all. This constituted a *communication* gap since government had not distributed bed nets to all the people as alleged by the ADP workers. Such communication gaps between actors serving the same population is bound to affect policy implementation and outcomes. It was, however, reported that World Vision had conceived of a new project which was going to address TB, HIV/AIDs and malaria, targeting World Vision staff. Staff were going to be availed free treatment if they suffered from HIV/TB and malaria.

## 6.9.7 Faith based organisations

Malaria control activities undertaken by faith-based organizations were quite limited in number and scale. Some FBOs had started health care units which believers were expected to use at minimal cost. Many Catholic parishes had such initiatives in the studied communities. Families which could not afford treatment costs were not assisted by any religious congregation in the communities studied. Most FBOs reported that they could not provide any financial assistance to the sick children because their congregations were poor.

However, some church leaders had started different income generating projects like piggery, "give the cow", and collective crop production to reduce on social assistance to believers. Some of these projects had unfortunately failed. The churches discussed development issues but were not linked to malaria. Also churches talked about HIV/AIDs but not malaria. Most religious leaders acknowledged that they did not know what to discuss regarding malaria since they had never been trained themselves. One pastor indicated his ignorance in these words:

We know that mosquitoes bring fevers but we do not know who is most affected (Pastor Gimbi 1 Seeta Namuganga, Mukono District).

Health education can be incorporated in church sessions. St Peter's COU has 3 sessions and it gets filled up. This is good forum to teach about malaria. But still the church leaders need to be sensitized (Information Secretary, Nakazadde Ward Lugazi Town Council, Mukono District).

Lack of knowledge of the policy and *comprehension* of what the churches can do about malaria is the major impediment against effective participation in malaria control and prevention by the faith based organisations.

6.9.8 Industries: the Case of SCOUL

The Managers of the Sugar Corporation of Uganda (SCOUL) reported that they had discussed the issue of malaria and had stocked adequate antimalarials in its hospital. If the prescribed drug was not in the company hospital, the worker was allowed to go and buy it elsewhere and present a receipt for refund. SCOUL also reported putting ITNs in its hospital and its shops at sub-sidized prices for the workers to buy (at 3500/=). Each worker was allowed to buy 2 nets. SCOUL also carried out indoor spraying with insecticide. The spraying of houses was done 3 times each year in February, July and November with the assistance of the Lugazi Town Council. Major complaints obtained from workers who used the hospital services and slept in SCOUL houses were the poor quality of antimalarials used and the insecticides used to spray houses.

At one time Town Council sprayed and killed every insect and it took one month to see mosquitoes; and yet at other times it sprayed and within 2 days mosquitoes re-appeared. (Chairman, Lower Kabowa LC1, Lugazi Town Council).

## 6.10 Summary of missed opportunities

- (a) Minimal or non-involvement of community institutions in the fight against malaria reduces on the avenues for reaching out certain population groups with disease control technologies at minimal cost.
- (b) Certain population groups such as school going children and fishing communities not being able to access effective antimalarials promptly.
- (c) Reduced identification with the problem by local governments; minimal planning and budgeting for disease control and reduced accountability for people's health.
- (d) Reduced opportunities to mobilize resources for disease control due to failure to share existing limited resources with well funded programs and projects.
- (e) Inability to undertake interactive tasks for disease control and addressing behavioural risk factors which were reported to perpetuate the problem of malaria.
- (f) Provision of health education at minimal cost in places like the churches and mosques.
- (g) Resource mobilisation for disease control interventions..
- (h) Identification of the most vulnerable to ill-health in the communities and supporting them.

## 6.11 Levels of implementation of malaria control and prevention activities

This section summarizes findings relating to the extent health care systems implement malaria control prevention activities in the study districts. Findings are presented in the Matrix A2 in the appendix. It is clear from the matrix that all health care systems have certain capacities and are doing something about malaria. There are also many aspects of control and prevention that each is not doing or is constrained to do. Below are some concrete observations made from the matrix.

All health care systems tend to focus and implement a few aspects of malaria control and prevention relegating others. Thus, health care units (both public and private) are spending more effort and resources planning, implementing, monitoring and reporting on the clinical/technical aspects of the program and less on preventive aspects and interactional aspects.

It is observed that even the single activity undertaken by a health care system is not satisfactorily done. For example, curative services are threatened by drug stock outs in the public units forcing health units to use non-recommended drugs, and to ration. Subsequently, poor homes are forced to resort to using painkiller or herbs alone without antimalarials. Implementation processes like monitoring of children on treatment is restricted to severely sick children admitted in health units but not those who complete their treatment at home. Health education is provided to carers of sick children in clinics and minimally in communities for the attainment of primary health care. Health education is provided to women in clinics but not to men who are responsible for financing malaria control and preventive activities. Planning for malaria prevention is done by some communities but not 100% implemented due to funding constraints. Planning and budgeting is done for technical tasks of the program but not for the interactional tasks and soft ware activities like behavioural and attitude change.

Certain pertinent activities relevant for improving planning and case management are not done at all. A good example of this is research in malaria, use of drugs, and management challenges. Other actors outside the health sector have potential capacity to main stream malaria in their day to day activities but they have not been given an opportunity or enabled to do so with resultant creation of missed opportunities. Health sub-districts have minimal relationship with the private for profit health sector leaving the sector inadequately supported and supervised.

Health care systems may operate well in normal situations such as situations where there are adequate resources but not in more complex demanding situations. For example, households are able to undertake their illness management responsibilities reasonably well when both adults –the mother and the father are present in the home at the child falls ill. This is not so when any one of these adults are away. Families are not prudent enough to plan for such incidences such that when they occur they affect the promptness and quality of management of the illness and outcomes. Other health care systems also have not developed adequate coping mechanisms to manage resource shortages and continue serving the poor and severely sick in situations of drug stock outs. Likewise, health units have not developed plans how to adjust their staffing during the malarial seasons. These practices are likely to negatively affect the quality of health care provided and the outcomes.

Non-implementation and low levels of implementation are partly responsible for the sustained morbidity and mortality of under-fives associated with malaria. Major reasons for the poor implementation of malaria control activities are: a) lack of capacity; b) lack of adequate funding in both the public and private for profit health sectors; c) powerlessness; d) limited social capital to bond people experiencing the same problem to work together; e) limited guidance and support supervision by the national malaria control program; (f) relegation of behavioural risk factors of the disease to the minimal or non-existent local revenue; (g) perceptions that a disease is treatable and is, therefore, a private trouble; (h) lack of knowledge of policy and what to do about the problem; (i) lack of a shared concern and inspiration with the policy makers and households for disease control; (j) limited capacity to identify disease control needs and activities that would enhance treatment and prevention; (k) not having a genuine feeling that local governments are equally obliged to ensure that their community members attain the right

to health and (1) local governments not being made accountable for the morbidity and mortality of the people due to preventable conditions.

# 6.12 Conclusions

This section builds on the previous section and distills emerging issues and needs for disease control policy. It also highlights concepts and ideas which were found to add to the understanding of the implementation and community organization theories.

# Implementation and capacity issues

- All health care systems have strengths, limitation and potentials to improve their capacities and effectively implement disease control and prevention programs.
- All studied organisations outside the health care sector such as infant and primary schools, NGOs, faith based organisations, and industries have a lot of potential to contribute to the fight against malaria but this potential is not being harnessed creating missed opportunities for the control and prevention of malaria.
- While most implementation efforts and resources are currently expended on provision of curative care, case management is beset with numerous problems in both the public and private health including use of non- recommended drugs, and procedures, inadequate and poor quality drug supplies, highs costs of coartem, (among others) all of which threaten the achievement of the desired social goals.
- The observed division of labour in the management of malaria between public and private health care units, lower and upper level health facilities and accompanied user preferences for different degrees of malaria, calls for special enablement policies of the actors for improved performance in accordance with their comparative advantage.
- There is minimal prioritization of common diseases like malaria in local level development plans. Even when malaria is planned for, the planned activities are not fully implemented because of the limited funding, perceptions that the diseases is treatable and therefore a private matter, lack of a shared concern and inspiration to control the problem by local government; limited capacity to identify disease control needs and activities for malaria control.
- Health education, a tool used to prevent the disease as well as promote health is
  problematic as it targets only the primary care givers of sick children and not the
  entire community. Besides, health education is provided quite late when the child

has already contracted the disease/illness or is severely sick such that is not useful for the attainment of primary prevention and the promotion of population health.

 Inadequate standardization of the activities (such as monitoring sick children done by CDDs in homes) engaged in by different health care systems during the helping process are currently creating missed opportunities for controlling and preventing the illnesses/disease at the family level.

## Leading reasons for poor implementation of malaria control programs

- Staffing levels are poorer in lower level health care units, and in the district of Mpigi which constrains service access and use. Besides, staffing levels are not tailored to malaria seasons with resultant rise of patient /staff ratios. The situation leads delays in attending to severely sick children, staff fatigue, and compromised quality of care.
- Inadequate funding is one leading problem explaining poor performance of health cares systems both public and private.
- Powerlessness is a common problem affecting households, health workers, subcounty and town council leaders in the implementation of disease control policy.
- Social capital deficiencies of households, communities, private health sector actors public health workers also explain poor performance of health care systems. For example, the limited bonding between private clinic practitioners reduces their ability to voice their concerns and needs of their patients, negotiate for better policies that enhance their work, lobby for incentives, support and influence each other's performance.
- Lack of knowledge of what to do about malaria is a common reason for minimum participation in the control and prevention of malaria by community leaders, public health workers, and other organizations outside the health sector.
- Conflicts and power struggles between political and technical leaders as well as professions threaten the collaborative efforts needed to effectively implement disease control policy and collective accountability for child deaths in the communities.

- The continued stocking and use of banned antimalarials in the public and private sectors imply a problem in the manner the transitions between old and new treatment policies are planned and managed.
- Some of the sustained morbidity and mortality due to malaria may be due to the tendency of some actors undertaking illness/disease management tasks for which they have limited capacity.
- Disease control policy implementation is partly failing because of its dependency on volunteers.

# Values and their roles

- Health care seeking decisions and actions are partly influenced by the universally known human rights as well as very specific values pertinent to the social cultural and economic contexts of Uganda. These values describe the quality of services the people would opt to use without which they would not seek care. This means that policy makers and programmers need to consider these when designing social services. A total of about 15 values pertaining to quality of service were identified by this study. They include:- availability and functionality of service delivery structures, access and affordability, drug availability, availability of strong drugs, value added, familiarity, flexibility, promptness in service delivery, being followed up or monitored at home by health workers, child survival, knowledge of the costs of care in different health care systems, capacity to handle (especially severe) malaria, convenience of service location and provision. Most of the identified values are elements of a quality service.
- Although most of the values are positive and may enhance actions that lead to the attainment of the highest standard of child health, the value of flexibility (such as giving half a dose of medicines fitting the client's pocket) was found to be problematic especially in the private for profit health sector where it is most valued and practiced. Private practitioners' flexibility conflicts with the clinical standards of health care, perpetuating irrational use of drugs, resistance, recurrent illnesses.

- People value to seek care from the health units they are used to regardless of the weaknesses of those systems. This means that there is need to design policy which is supportive of all health care systems both public and private.
- Fear of health care costs in the paying units limits the household health care seeking choices, use of the units in their vicinity, and access to health care in the shortest possible time. This finding calls for supportive policy of the private health sector aimed at reducing health care costs and out of pocket expenses for common conditions.

# Vulnerability and outcomes

A slight divergence in the availability and functionality of health care systems affects the poorest sections of the population more leading to poorer service utilization and health outcomes.

Conclusion	Recommendations: emerging needs for policy
Involvement of other actors	-Policy to mainstream malaria in all other government departmental sectors
outside the health sector to	-Develop manuals or guidelines indicating what each sector is to do
manage common conditions	-Develop monitoring structures to ensure that all actors undertake their roles
Poor management of curative	-Improve funding of the health sector broadly
services	-Subsidize the private health sector where the majority of people seek health
	care for uncomplicated malaria.
	-Replace the existing government laissez faire relationship with the private
	for profit with a contractual relationship to enable the private sector offer
	more effective services for control of common illnesses in the community.
	Use of vouchers may work (see chapter 3).
	-Mandatory regular in service training for the private practitioners
	-Development of research desks to study drug performance at the grass roots
	and investigate other clinical and policy problems. Proactively link research
	institutions to practitioners at the grass roots.
Minimal prioritization of malaria	Training programs for local level leaders linking malaria to existing poverty
in local level plans	levels
	Development of planning manuals for use by community level planners
Minimal health education, late	-Funding for health education at the community level
health education; wrong targeting	- Development of structures (where they do not exist) in health units and
of health education	health sub-districts to manage health education and child monitoring
Resource problems – staffing,	-Improve funding of the health sector
funding	- Redeployment policy of staff to beef up outpatient departments especially
	during malarial seasons and during epidemics
	- Financial allocation of health care units to take into account the unique
	needs, caseload, size catchment area and other competing diseases and health

**6.13 Recommendations: Emerging needs for policy** Matrix 1: Emerging needs for disease control arising out of the conclusions

Conclusion	Recommendations: emerging needs for policy
	problems in the area
	-A policy on voluntarism is needed. Redefine the concept of voluntarism in
	terms of the kind of activities and responsibilities one needs to take, the
	amount of time to input, and accountability in terms of outputs and outcomes.
Problem of powerlessness and	- Develop a structure of social work within the Ministry of Health and regions
low social capital of communities,	to be concerned with organizing health workers in the public and private
health workers, private	sector, as well as communities to empower them enabling them to voice their
practitioners	concerns for improved service delivery and accountability.
	- Issues of social capital development, powerlessness, and empowerment be
	added on the research agenda of disease control program
	- Institute reporting and management structures to handle community
	grievances pertaining to risk factors of diseases and perpetuators
Lack of knowledge regarding	- Constant training programs of local level leaders linking malaria to existing
what to do about malaria in the	poverty levels
community	- Development of planning manuals/guidelines for use by community level
	planners
Conflicts between leaders and	- Make every actor and the entire local government accountable for any death
professionals/ minimal	due to preventable factors. Performance in the reduction of deaths or
collaboration for disease control	promotion of health be rewarded with a certain percentage of the central
and prevention	government grants normally given to local governments. Likewise, let failure
	to reduce deaths fetch certain punishments.
	- Institute structures to regularly collect information on child deaths and
	causes in the communities.
Continued stocking of banned	- There is need to determine the time period for transiting from one treatment
antimalarials	policy to another; implementation costs and compensation issues in situation
	of a unit losing old unused stocks of drugs.
	- A policy to ensure that all health units (public and private) are able to
	acquire and effectively use a new drug.
Doople value to use units they are	Accord same attention financial support supervision to the public and
used to (fear of the unknown)	rivate health care sectors since they both offer some service to the same
used to (rear of the unknown)	nonulation for disease control
Fear of health care costs in paying	- Control costs for treatment of common conditions
units	Require the units to publish information on costs of managing common
	conditions.
Values	- Consider both the universally known human values and the more specific
	values when designing of service delivery systems taking into account the
	conflictual ones like flexibility.
Vulnerability and outcomes	- Allocate proportionate funding to regions according to the amount of social
,	and economic vulnerability as well as biological vulnerability

# 6.14 Contribution to implementation theory

This section presents some thoughts on the *implementation theory*, the key theory used in this study. The discussion generates more factors that further explain the sustained problem of malaria and its adverse outcomes. Seven concepts are discussed below notably: commitment, availability, inequity, service utilization, service integration, problem definition, and the machine model.

## Commitment:

This is one of the elements of the implementation theory proposed by Vedung (2005). This study has found that in addition to the variables proposed by Vedung, commitment can be enhanced by the extent the problem effects are shared and understood by policy implementer as they are by the policy makers. This implies that implementers within institutions equally need to have their conscious awareness raised about the social economic impacts of the problem they are managing as well the expected impacts of mitigating the problem. This should be especially true where the government uses a top-down approach to policy formulation and planning. The conscious raising would make even more impacts if the institution was made aware that some of its cherished values may be threatened by the problem. Empirical evidence from the household survey shows how households try to restore children's health amidst very scarce resources because the illness threatens the lives of the children they cherish. This means that the commitment of other actors including institutions in the fight as against common diseases can be obtained after they perceive or made to perceive that the disease is a threat to institutional values and goals. This would of course work best in result-oriented organisations where the performance of the individual functionary is put at stake for the inability to achieve institutional goals and set outputs.

## *The concept of availability*

Availability of individuals to perform the specialized illness management tasks is an important element that needs to be added to the *transactional model of the implementation theory*. This concept pertains to all health care systems regardless of their sizes and formality (that is, a families and health units). In formal organisations, continuity of service in the absence of a worker is assured through recruitment of new staff, delegation, or proper handing over of tasks to the available staff. However, households are not well organised to fill in gaps and redistribute functions, power and resources enabling the remaining family members to effectively sustain the illness management tasks. This requires development of appropriate norms or social capital and empowerment of the people who normally remain behind with children. Families are

usually not prudent enough to organize this or deliberately train other family members to manage sick children. Such families, therefore, need sensitization by agencies.

## The concept of inequity:

While inequity generally refers to the inability to access service according to need, this study found that inequity may arise when service beneficiaries with same need or problem are accessed to differentiated helping processes. A good example is whereby children treated by CDDss are monitored but those treated by the health units are not. Change agents may also suffer inequity of treatment by government leading to ineffective performance of their roles. For example, the private for profit health care sector suffers inequities in terms of varied support supervision obtained from government officials compared with government units or NGO units. Outcomes of inequities experienced by certain change agents filter down negatively affecting the service beneficiaries.

Another common inequity observed during this study was that all malarial suffering children were not accessing the same quantity and quality of care because of the distribution pattern of both the public and private health care services, varied quality of care, and affordability. Also one single child is not assured of the same quantity and quality of services each time she/he visits a public unit because of the variations in drug availability and quality of care.

In summary, the following factors were identified as being partly responsible for creating inequities in accessing and using health care: distribution and functionality of different types of health care units, quality of care, service access modalities e.g. whether paying or non-paying, non-standardization of problem solving processes and logistics, and varied supervisory models. Policy aimed at reducing inequalities in the management of common conditions may need to address the causal factors. An example could be to subsidize care through a voucher system and developing incentives to attract the private sector to underserved isolated geographical areas.

## Service utilization

Whether one is discussing policy implementation from the top-down or bottom up, there is a tendency for the implementation theorists to focus attention on the street-level bureaucrats and the factors that make them succeed and/or fail. This study has found that service utilization is one measure of effective participation. Service utilization is equally important for ensuring the success of policy implementation and attainment of the desired social goals.

#### The concept of integration

Ryan (1996) indicated that implementation may fail because of lack of integration of the service delivery systems. This study further elaborates on Ryan's work by stating that integrated services should involve a forward and backwards movement; vertical and horizontal linkages between health care system offering services to a child. Integration also means linking clinical and public health services, and linking a sick child to its social and physical environment. Policy needs to articulate the linkages and the encapsulating activities. The problems below highlight the different forms or dimensions disintegration takes and where more integration needs to take place.

- (a) Un-harmonised plans of the HSDs with those of lower health units and communities.
- (b) Technical plans not being accompanied by interactional plans.
- (c) Inconsistencies in the procedures or processes used by different health care systems.
- (d) Higher level units not using or referring sick children to lower level units for monitoring and support.
- (e) Other social service sectors not mainstreaming disease control programs in their plans, budgets and day to day activities.
- (f) Retention of certain vertical features of some programs (especially the new programs) while demanding integration. For example, the tendency to run special clinics for HIV programs and separate budgets, training and drugs for ART, PMTCT, while also requiring the new programs to use the mainstream human

resources and other logistics. This drains the mainstream services of the scarce human resources relegating the common conditions.

- (g) Using different structures to supervise health care systems which systems undertake the same functions.
- (h) Limited sharing of patient information between the private health care sector and the public or private and private.

# Problem definition

The persistence of the malaria problems and its consequences is partly a function of the scope of the problem definition. The limited scope results in limited interventions. The problem of malaria is currently not perceived as a behavioural and environmental problem but as a biomedical problem. This is why these causal factors are left to be met with unreliable non-existent funds of local government. There is need for the policy making institution to require other disciplines to revisit a problem like malaria and redefine it, as well as identify aspects that other disciplines can handle in accordance with their comparative advantage.

## The machine model of the implementation theory

The assumptions behind the *machine model* of policy implementation are problematic. This is because the existence of a clearly formulated plan backed by ligitimate decision making authority does not produce the desired outcomes unless the plan is backed by adequate resources especially funding. This study has shown that the procedures of procuring drugs from the NMS, while useful for accountability, do not increase drug availability in public units. This model also assumes the existence of perfect implementation – that drugs once in the units will be available and accessible to people universally all the time. Working with such a model denies the poorest an opportunity to be catered for differentially in situations of drug stock outs in public units.

# CHAPTER SEVEN

# CAPACITY OF THE MALARIA CONTROL POLICY TO REDUCE MALARIA AND UNDER-FIVE MORBIDITY AND MORTALITY IN UGANDA

The preceding findings chapters (5 and 6) have basically discussed health system construction of the problem of malaria, actions taken to control and prevent the problem, their capacities and implementation levels as well as challenges and threats. Both chapters have identified areas calling for policy. This Chapter builds on these chapters and analyses the extent the existing malaria control policy addresses all the identified needs and values for policy. Findings in this chapter relate to the third objective. In the course of providing answers to the third objective, it also answers two of the research questions namely: a) how well does the malaria control policy address the health care system disease control and prevention challenges and threats existing at different levels of social organization; and b) how well does the malaria control policy address the critical values embedded in the human rights-based approach and social development? This chapter continues to distill factors that explain the sustained morbidity and mortality due to malaria while also explaining some of the findings in chapters 5 and 6.

This chapter is divided into three broad sections. The first section describes the genesis, the rational, and structuring of the malaria control policy documents. The second section discusses the comprehensiveness of the provisions of the policy by comparing its contents with the synthesized policy needs and values indicated in chapter 5 and 6. This particular section identifies areas where policy is adequate and where it is inadequate. The third section concludes the chapter by summarizing the forms policy inadequacy takes.

The findings presented in this chapter largely use qualitative information drawn from the seven malaria control documents (listed in Chapter 4) and the synthesized recommendations appearing in chapters 5 and 6. An identification is made of what is

included and excluded; as well as how abstractly or concretely events, processes, and relations are presented. Explanations as to why certain things are written and others left out as well as the consequences are drawn. The analysis and interpretation of the policy *content* is done from the perspective of both the institution which produced the policy and the receivers of the policy. Meanings are made out of the position, interests, intentions and desires of the producers of the policy; the relations between elements of the text; and the needs and values of policy receivers. Assumptions implicit in what is said in the text are drawn and discussed. This is done because as Fairclough in his book Analysing Discourse: Textual Analysis for Social Research, (2003:11) asserts, "what is 'said' in a text always rests upon 'unsaid' assumptions; so part of the analysis of texts is trying to identify what is assumed".

## 7.1 Navigating through the malaria control policy documents

7.1.1 The genesis of the malaria control policy – the National Health Policy The malaria control policy has its roots in the National Health Policy (NHP) (1999) and national strategic frameworks. At the time of completion of this thesis, a second national health policy (2009) had been completed and was in the process of being published by the Uganda Ministry of Health. There was also an accompanying health strategic plan III (2001) in draft form. This study used the 1999 national health policy, the first and second health sector strategic plans (HSSP) covering the periods – 2000/01-2004/05 and 2005/06-2009/2010 respectively. The first HSSP was particularly useful as all the available malaria control documents were derived from it.

The NHP specifies the diseases to be addressed with the minimum national health care package (UNMHCP). The package comprises of services and technology conceived to be most cost effective and to have the largest impact on reducing mortality and morbidity. Malaria is listed number one among the components of UNMHCP. The NHP also addresses generic issues relating to service delivery system, human resource development, the private sector development, health care financing, community empowerment, policy planning and development, and evaluation, as well as research and development.

The National Health Policy in turn derives guidance from other documents notably:- the Constitution of the Republic of Uganda of 1995, the Local Governments Act of 1997, National Health Sector Reform Programme, and the National Poverty Eradication Action Programme (PEAP). PEAP was the cornerstone of President Museveni's Election Manifesto for his second election in the office of the Presidency in 2006. Also the Alma Ata Strategy provides significant input and guidance into the health policy (Ministry of Health 1999). Other potentially relevant texts to malaria control policy, are the Roll Back Malaria Initiative of the WHO, the Abuja Declaration and many others reviewed in Chapter 2.

The National Health Policy is operationalised by the Health Sector Strategic Plans. The National Health Strategic Plan proposes the following for the control of malaria.

Prevention and control measures through improved case management, vector control and personal protection from insect bites at the community and household levels, selective chemoprophylaxis, intensified surveillance to help prevent and better manage epidemics, and monitoring the efficacy of existing antimalarial drugs.

## 7.1.2 The structure and organization of the policy documents

The National Malaria Control Policy is not one document, but constitutes of seven separate documents. One of these is the broader generic National Malaria Control Policy which was formulated in 1998. This is operationalised by a strategic plan and five specific intervention plans. The intervention plans are the Treatment Policy, the Policy and Strategy for Insecticide-treated nets (ITN), Malaria in Pregnancy Strategic Plan, the Communication Strategy for Malaria, and Indoor Residual Spraying. The strategic plans basically address questions of the 'hows' of achieving the desired social goals.

Each of the malaria control policy documents varies in size and structuring. The longest document is 69 pages while the shortest is 7 pages. The shortest is the National Policy on Malaria and Treatment while the longest is the Uganda Communication Strategy for malaria 2005-2010. The National Malaria Control Policy (1998) is 19 pages long, while the Malaria Control Strategic Plan 2001/2-2004/05 is the second longest at 42 pages. The Strategy for Home-based Management of Fever/malaria in Uganda (2001) has 27 pages.

The Malaria in Pregnancy Control Strategic Plan (2000), and the Policy and Strategy for Insecticide Treated Nets (2003) are 15 pages each.

In terms of content, all the policy documents contained the following elements: the situation analysis, the statement of the policy, service delivery structures, implementation arrangements, and activities to be undertaken by the stakeholders at national and district levels. Each policy document has slightly a different structure and emphases. For example, the National Malaria Control policy document puts emphasis on the policy details, particularly on drug regulations and quality assurance. This highlights the bias of the policy for curative care. Out of the 19 pages, about 9 of them are devoted to describing the policy and 3 pages describe the policy framework or service delivery structure from national to district level. The HBMF strategic Plan, on the other hand, devotes more (8 pages) on the description of strategies to implement the policy and ½ a page on service delivery structure. Only one policy document, the Treatment Policy indicates the number and type of guidelines to be developed to guide policy implementation (See summary in Matrix A4 in the appendix).

Although there is one national health policy, and the disease control documents would ideally best be called implementation guidelines, this is not the way they are named. Two of the documents were named "policy" while the remaining five were called "strategic plans". One of these is the National Treatment Policy. This study had no problem with the dichotomy (whether the documents are called policy or guidelines) because, as indicated in Chapter 1 (Scope Section), policy and implementation are perceived as one and the same thing, the two being elements of the same iterative loop. Nonetheless, the way documents are named and produced may create implementation problems and outcomes.

Conceptually, this study perceives the policy making process (from which the disease control documents derive) as being top-down, rational, and linear. The disease control implementation guidelines are perceived as being the third, fourth and fifth in the process. The first level is the national health policy making; the second is the national

strategic plan; the third level is the disease control policy; the fourth is the disease control strategic plan; and the fifth are the specific guidelines or manuals for operators. The process has resulted in very many fragmented policy documents whose use, access, and cost effectiveness may be questionable. Chapter 6 indicated that many health care systems had never accessed the malaria control policy or implementation guidelines. This questions the rationale of the many layers of strategic plans. The presence of many policy documents on one disease means that policy making is *disintegrated*.

Disintegrated policy making may put a lot of demand on implementers to study each document before coming up with an integrated course of action. Where this capability is lacking, implementers may discriminatively or selectively use some guidelines while completely ignoring others during planning. Chapter 6 showed that when health workers were faced with many health problems to manage, they chose those of interest to them leaving behind others. The diseases left behind are sometimes the common conditions like malaria. Disintegrated policy making also assumes verticalization of the subprograms. Some sub-programs may be more attractive to funders than others. The consequence of this is that it may be difficult to attain uniform progress in the control of the disease as implementation will be dependent on varied *financial, managerial*, technical and political resources of each sub-program. These differences will also be reflected at implementation level as street-level bureaucrats will put more effort in programs with better funding. This is not to say that vertical programs are bad. Actually vertical programs may be advantageous in the sense that each sub-program solicits for its own funds for the execution of the plan. Monitoring and evaluation may also be much easily done than if programs were integrated.

The presence of many fragmented vertically planned policy /implementation guides assumes that they were developed at different time periods and were at different stages and levels of implementation. Indeed each sub-program has its own time frame for achieving certain outputs. The targeted time for all is within 2001-2005 or by the end of 2005. This lack of *integration* in the programs' start time may create lack of synergy in policy implementation which may in turn affect the attainment of holistic impacts on

malaria and overall child morbidity and mortality. Therefore, *integration of services* equally apply to the start time of the programs addressing a problem. If programs addressing the same problem are started long after one another, this may create problems of attaining a holistic impact on the problem.

Two major reasons explain the over production and fragmentation of policy documents. First is the decentralization policy and HSRs which separate the functions of the centre from those of local government. The centre specializes in policy setting. There appears to be a zeal for accountability in terms of the number of policies produced and refined. The specialization gives the centre staff to think and rethink policy. However, the over production of fragmented policy documents creates problems of integration by the implementers. The implementer may need analytical skills to pull ideas from different documents before he/she can come up with an action plan. Such skills and also the motivation may not easily be available at different levels of health care in the country. Reading and assimilation of fragmented guidelines may also be threatened by the poor reading culture of many functionaries. The result is a tendency for policy documents to remain on book shelves as white elephant. The second reason for the production of many fragmented documents is the influence of donors who especially in the past used to prefer to fund projects which resulted in vertical programs. These issues are well elaborated on in Chapter 3. This finding could partly explain the reported failures to plan for malaria at local levels. Despite the existence of many disease control guideline, community leaders reported they did not know what to do about malaria. This would, therefore, call for training of local level managers on how to make sense of the numerous policy guidelines for effective planning.

#### 7.1.3 The rationale of the disease control policy

There is an acknowledgement that malaria is a big problem in Uganda being expressed in the high morbidity and mortality. Malaria is perceived as a cause of poverty. The problem is, therefore, perceived as a big institutional and societal burden. The rationalization for this policy, therefore, has roots in the government of Uganda's commitment to fight poverty. Fighting malaria is perceived as a rational response and a strategy to alleviate poverty in the country. Constitutionally, the Government is required and mandated to provide health services to all people. In the preamble to the National Malaria Control Policy (1998:5), it is indicated that the policy is based on "the constitutional commitment of government to provide basic health care for all and the international recommendations on malaria". Government is mandated to provide health care services to all people as *a right*.

Although local government is equally mandated to provide health care services as a government, this study found that most local governments and their institutions had limited consciousness of the significance and impacts of diseases like malaria. Chapter 6 indicates that most were not prioritizing malaria in their plans and budgets perceiving it to be a personal problem. Most local government institutions lacked a *shared concern* for the common health problems. This situation threatens their sense of obligation to provide health care services as *a right* and be held *accountable* for every life lost in the community due to preventable conditions. In other words, the expectation of local government to provide health care services as a right and be accountable need to be more seriously and concretely addressed.

Being part of the globalised world, the Ugandan government has to appear to move with the rest of the world in upholding the core human values and standards. Globalization has also led to rising expectations and people's demand for health care services. The policy derives from the international recommendations on malaria. The international community does not only set the human values but it also prescribes the responses and the technology to use, as well as the provision of the bulk of funding for disease control programs. This has been elaborated on in Chapter 1, 2 and 3. Therefore, although the background to the policy documents dwells a lot on the magnitude and effects of the disease, the policy attempts to address other national and international political interests as well.
#### 7.1.4 Authorship of the policy and the targeted population

The National Malaria Control Policy and Strategic Plans were produced by a Task Force comprising of development partners, non-governmental organisations, individuals, as well as the Ministry of Health's National Malaria Control Program officials. Technical Assistance was provided by the Malaria Consortium, an international NGO, UK Department for International Development, UNICEF and WHO. The Ministry of Health is the steward of health on behalf of government. The policy is, therefore, issued by a department with the legitimate authority and expertise. The policy documents build their background on some statistics implying application of a *rational top-down planning model*.

The language used by the authors in all the 7 policy documents is highly technical -public health, and epidemiological. For example, it uses concepts like endemicity, mortality and morbidity, capacity building, community participation, coordination and institutional framework which are best understandable by technocrats. Disease names rather than illness names are used in the documents. This implies that the policy is directed at the high and middle level technical people and funders of the policy; and not the lay people.

Other than one document, the remaining 6 do not indicate the population targeted by the policy. The only document which indicates the targeted population of the policy is the Malaria Control Strategic Plan. In this document, the targeted population includes public health planners, administrators and health workers "at all levels" in Uganda. To these people, the policy documents are purported to act as tools to guide their planning. Other people targeted are the civil servants in the line ministries, non-governmental organisations, development partners and civil society organisations. Health service users are mentioned as being targeted in a non-committal manner by the Policy on Malaria Treatment and Malaria in Pregnancy Control Strategic Plan. For example, in the "Forward" message in the Policy on Malaria Treatment, the Minister of Health appeals "to all Ugandans to utilize this chance to access effective malaria treatment within the shortest time possible whenever they develop fever" (MoH 2005:1). In another

document, the Director General of Health Services encourages all stakeholders "including health service users ...to support this effort...". Even when service beneficiaries are indicated as targets for the policy, it is not indicated how they are to access such information.

This targeting assumes that policy implementation is the exclusive obligation of technical people and not the service beneficiaries. This is contrary to the existing perceptions in the communities that malaria is a family rather than a community affair (Chapter 5 and 6). It is also contrary to findings which indicated that policy implementation was failing because households and communities were not doing enough of what they were expected to do. Service utilization was also shown by this study to be an important variable in the implementation theory. Targeting policy just to the institutions relegates the role of the households in malaria control and prevention making them passive recipients of services destroying their efficacy *to take a greater responsibility for their health.* This works contrary to the PHC principles of *community participation*.

Another loophole in the targeting of the policy is that all documents are silent on how the health service beneficiaries and institutions will get to know about the policy provisions and available opportunities. All the policy documents do not indicate the dissemination and distribution methods of the policy. Accessing the policy documents is left to chance, meaning that those people and institutions which may not reach out to look for the policy, are less likely to embrace and implement it. Chapter 6 has shown that most communities were not planning for malaria because of lack of knowledge of the policy, the tasks, and their responsibilities in control and prevention efforts. And yet Chapter 5 indicated policy knowledge was useful in averting deaths if it were passed on to households before sickness occurred.

# 7.2 Problem construction and reduction of morbidity and mortality

This study discerned the authors' problem construction by analysing the implicit meaning of the policy goals and specific objectives. The overall policy goal in the five documents is somewhat uniformly stated. The goal is "to prevent and control morbidity and mortality so as to minimize related social ill effects and economic losses attributable to the disease in Uganda" (MoH 2000:9). The National Malaria Control Policy adds the

word "sustainable" in its goal statement so as to read "Sustainable malaria control to prevent mortality and morbidity and minimize social and economic losses, thereby support poverty eradication in the country".

The National Malaria Control Policy does not have specific objectives but it is the subprograms which state the objectives. The matrix below summarises the specific objectives of selected strategic plans. It may be noted that the style by which the specific objectives were written is the same in most implementation guidelines.

Policy document	Specific objectives
Malarial control strategic plan (2001/2-2004/5)	<ol> <li>To increase the proportion of the population at risk of malaria who receive appropriate treatment for malaria within 24 hours of onset of symptoms, to 60% by the end of 2005.</li> <li>To increase the proportion of pregnant women receiving IPT to 60% by the end of 2005.</li> </ol>
	3. To increase the proportion of children aged less than 5 years, regularly sleeping under Insecticide Treated Nets (ITN) to 50% by end of 2005.
	4. To reduce malaria case fatality rate at hospital to 3% by the end of 2005.
National Policy on Malaria Treatment (2005)	1. To ensure availability of highly efficacious antimalarial medicines at all levels including the household.
	2. To ensure access to promote effective malaria case management at all levels including the household.
	3. To ensure availability of IPT in all ANC facilities
	4. To ensure that all health workers have appropriate knowledge on malaria case
	management and prevention
	5. To promote positive malaria case management practices among the population through behavioural change communication (BCC)
	6. To promote the detection and reporting of adverse medicine reactions.
Strategy for Home Based Management of fever/malaria in Uganda (2001)	1. To increase to 60% the proportion of children under five years suffering from fever/malaria who have access to pre-packed antimalarial drugs at household level.
	2. To increase to 50% the proportion of children who receive early appropriate treatment (with pre-packed CQ/SP within 24 hours of onset of fever) for fever/malaria, at household level.
	3. To increase to 50% the proportion of children with severe fever illness that are promptly referred to formal provider.
	4. To increase the proportion of health facilities that offer appropriate care to children with fever/malaria.
	1. Increase the proportion of children below 5 years using ITNs from 3% to
	60%
Policy and Strategy for Insecticide	2. Increase the proportion of pregnant women using ITN from 0.5% to 60%
Treated Nets (ITN) (2003)	3. Increase the proportion of households with one or more nets from 13% to 75%
	<ol> <li>Increase the proportion of households with one or more ITNs from 3% to 60%.</li> </ol>

Matrix 2: Specific objectives of selected malaria control implementation guidelines of Uganda
Policy document
Specific objectives

Source: Malaria control policy documents for Uganda

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Two of the implementation guidelines are concerned with increasing proportions of individual persons seeking or using a certain service. Likewise the National Treatment policy is concerned with restoring ill health to normal functioning. The focus on case management puts individual health at the centre of the policy. Concerns with "increasing proportions" focuses on individuals; it is assumed that the problem is in the individual's human body and it is this individual which should be targeted and counted in program statistics. There is a disregard for the role of the environment and the *person-environment exchanges* in the creation and mitigation of malaria. It does not adequately consider the household construction of malaria concerning the vectors and physical environment, and barriers to service access and use. The problem construction underlying the policy assumes a structural functionalist approach (a medical model) with a tendency to separate the individual from society. This creates benefits to the individual and not the population or community. The way the documents are titled also indicates a concern with *disease* (malaria) and less with *health*. Therefore, the current problem construction as discerned from the specific objectives is inconsistent with the policy goal which aims at reducing morbidity and mortality in the entire society and minimizing the social and economic losses to the whole country.

However, the policy takes cognizance of the behavioural risk factors which were largely identified by the grass-root health workers. The policy assumes that people are already involved in some practices and the purpose of the policy is to enhance the existing practices by the household and health care systems. This is consistent with the findings which indicated that the health care systems have potential to improve their illness/disease management practices if there were enablement policies and programs. The strategy aims at "increasing proportions" of households, health workers, community leaders and entire communities with certain knowledge important for disease control. Examples are recognizing uncomplicated and severe malaria, and using ITNs. However, the policy still excludes issues of *powerlessness* to manage the environment, low stocks of *social capital* all of which were found to be risk factors for sustained malaria morbidity and mortality.

Reduction of morbidity and mortality and their social economic impacts in the entire society assumes provision of universal and *equitable* malaria control services taking into account the epidemiology of the disease, the social and economic vulnerability to the disease, social organization for health care provision in the country, among other factors. Provision of *equitable* malaria control services implies that rural agricultural and big sized families which are most vulnerable to uncomplicated and severe malaria (Chapter 5) would receive more resources, health work attention, monitoring and support supervision. Holo-endemic areas with intense year round malaria transmission, like the northern and eastern Uganda regions, would be expected to be allocated proportionately more resources and especially funding because of their greater burden of malaria. However, the policy is silent on vulnerability in its many dimensions. This silence may be a factor in the sustainance of malaria morbidity and mortality in Uganda.

Despite the bio-medical concerns of the policy, it is silent about disability associated with the disease. This omission may not allow the creation of appropriate programs for the management and rehabilitation of the children who get mentally and physically disabled (Chapter 5). Nonetheless, the policy goal as indicated in the documents is in harmony with the concerns of the community. Chapter 6 indicated that *child survival* was an important value of households.

The language used when stating the desired outputs and outcomes of the policy --"increasing proportions of people doing certain things" portrays the population as a passive object to be acted upon and moved to do things considered appropriate by the policy making institution. The language is authoritative and implies a *non-participative* process of policy implementation. It offers limited opportunity to apply the concept of *community action for health* to promote health development. The consequence of this is that people are not empowered with knowledge, skills and appropriate attitudes to *take greater responsibility for their health care* and development. Hence this reflects minimal attention given to the *processes* of policy implementation which are considered equally important in the attainment of sustainable change in the control and prevention of malaria. Another problem observed is the use of the concept of "sustainability". While the disease strategic plan alludes to having sustainable interventions, most sub-programs omit the word "sustainable" from their goal statements which limits the ability of the plans to come up with organizational ideas to sustain the program over time. However, it is observed that even strategic plans which addressed the idea of sustainability failed to come up with sustainable plans. There is evidence in Chapter 6 that the HBMF strategy was failing because the proposed sustainability plans which depended on "community ownership" of the homapack program and voluntarism of the CDDs were in themselves not sustainable over a long time.

Nonetheless, the specific objectives are quite clear, measurable, and manipulatable. The specific objectives are also consistent between themselves. Each specific objective in the National Malaria Control Strategic Plan is operationalised by several objectives in each sub program. For example, the objective "to increase the proportion of the population at risk of malaria, who receive appropriate treatment for malaria within 24 hours of onset of symptoms to 60% by the end of 2005", is operationalised by a total of 7 others from the treatment policy and HBMF (see box 2).

Box 2: A strategic principle is operationalised by several plans: the case of access to prompt and effective antimalarials



# 7.3 Comprehensives of the disease control policy

In this section, the study compares the provisions of the disease control policy with the synthesized needs for policy identified in chapters 5 and 6. The findings are organised around six themes of: case management, prevention and promotion, service delivery structures, monitoring, evaluation and research, capacity building and funding.

# 7.3.1 Case management

In line with the construction of the malaria problem by the authors of the policy, they emphasize case management as the most effective way to reduce morbidity and mortality. Case management is subscribed to by four sub-program strategies namely: the National Treatment Policy, the strategy for Home Based Management of Fever, Malaria in Pregnancy control plan and Communications Strategy. The key solution proposed to reducing the malarial morbidity and mortality is prompt use or provision of an effective antimalarial in the health units and at home. The role of government (through the

Ministry of Health) is to ensure the availability and access to effective antimalarials through public and private for profit health care units.

The National Policy on Malaria Treatment provides guidelines as to how uncomplicated and severe malaria should be treated. It indicates the first and second line drugs to be used in children, adults, and pregnant women, and the methods of drug administration. The first line drug for treatment of uncomplicated malaria is the new drug called Artemether/Lumefantrine (COARTEM) which is given according to body weight. Quinine, which is given intravenously is recommended for severe malaria; while fansidar is recommended for intermittent presumptive treatment of malaria during pregnancy. The Treatment Policy further proposes to have guidelines developed to guide the management of malaria of different severity; implementation of HBMF, IPT, technical supervision, communication and behavioural change. Health workers and community drug distributors are to be trained. Treatment activities are to be monitored and supervised. Treatment policy implementation is to be supervised and coordinated.

The HBMF strategy provides for pre-packed antimalarials to be kept in the villages for easy access and use by the under-fives. This HBMF strategy does not provide antimalarial packs for older children and adults and neither is it committed to provide packs for adults in the future. The Strategy for malaria control in pregnancy emphasizes providing fansidar to pregnant women starting in the 4<sup>th</sup> month of pregnancy twice throughout the pregnancy, and thrice for pregnant women with HIV/AIDs.

Matrix 3 presents a comparison of the policy provisions and the identified polcy needs indentified in chapters 5 and 6 relating to case management.

Case Management Principle	Policy needs and values addressed in	Areas policy was found inadequate	Implementation assumptions and status quo*
1. Availing efficacious medicines	Availability and free access to strong effective medicine in public and private for profit health units	<ul> <li>Funding issues (sources, amount, annual increases) to enable increase drug availability</li> <li>Ways of stepping up and accessing essential inputs in units amongst the most vulnerable geographical communities</li> <li>How to access essential drugs to the poor and vulnerable during drug stock outs in public units</li> <li>Distribution pattern of health care facilities and functionality</li> <li>Mapping of health units and community resource persons to ensure availability routes for accessing efficacious drugs</li> </ul>	<ul> <li>Perfect implementation – that is, there will be adequate resources including funding</li> <li>Possession of the power and ability by MoH national officials to influence govt for more funding</li> <li>Managerial resources for the procuring, distribution and management of antimalarials and logistics</li> <li>Competent, motivated, committed, effective, accountable health care managers</li> <li>Enabling environment free of self treatment practices</li> <li>Control of importation, local manufacturing and distribution of fake antimalarials</li> <li>*wrong assumptions</li> <li>* availing coartem to PFP units was not implemented as planned due to funding problems as reported by public unit health workers</li> </ul>
2. Promptness of treatment	Home based management of fever program – takes services nearest the sick child	<ul> <li>Limited resources and social capital to enable households access treatment promptly</li> <li>HBMF does not cater for adults</li> <li>How to ensure equity in the distribution of health units</li> <li>How to influencing the distribution of health care units and especially the private for profit to underserved areas</li> <li>How to influencing patient /staff ratios during malarial seasons</li> <li>Management of referrals especially processes of patient record management in PFP units</li> <li>Influencing and balancing access to clinical resources between common conditions are more resource demanding diseases and injuries like accidents</li> </ul>	<ul> <li>Equitable distribution of health units and CDDs</li> <li>Performing CCD structure</li> <li>Efficacious drugs in homapaks</li> <li>Performing referral system</li> <li>Social and economically empowered households</li> <li>Households and communities with high social capital for pooling scarce resources for transportation to units and purchase of drugs</li> <li>Motivated health workers</li> <li>Quality health care able to attract users</li> </ul>
3. Training	<ul> <li>Updating health workers and planners on malaria control strategies</li> <li>Train district managers in malariology</li> <li>Integration of malaria control approaches in pre-service curricula.</li> <li>Training about the new treatment disease control policy to stakeholders at different levels using media and workshops</li> <li>Increasing knowledge of individuals, households, communities, service providers</li> </ul>	<ul> <li>Disease control needs identification and Planning for malaria control by local level actors</li> <li>Does not concretely indicate whether and how to update knowledge and skills of private for profit health workers</li> </ul>	<ul> <li>Funding availability; allocation to health education</li> <li>Availability of health educators in all HSDs.</li> <li>Health education (a soft ware/supportive service) is not accorded the same priority including resources as pure clinical services</li> <li>Some HSDs do not have health educators</li> <li>*Minimal health education at community level</li> <li>*Health education in clinics done late when children are already sick and misses out most men who fund health care and preventive activities</li> </ul>

# Matrix 3: Comprehensiveness of the existing case management strategy and implementation levels

4. Advocacy and social mobilisation	and leaders on a number of things respectively: how to recognize signs and symptoms of malaria and importance of seeking proper treatment early; compliance; education and community mobilisation on these issues, providing prompt and proper treatment, and allocating sufficient resources to malaria treatment and prevention. Advocate with policy makers and donors to provide more resources to malaria in line with the burden of the disease at different levels	<ul> <li>Social organization of families to plan for malaria control particularly during absences of adults</li> <li>Social capital development especially bonding at community level to pool resources and mutual support for malaria control.</li> <li>How to make local governments more accountable for deaths due to preventable conditions</li> <li>Social organization and empowerment of households and communities to better manage /support the disabled children</li> </ul>	<ul> <li>Legitimacy of the Ministry of Health Officials to mobilise funds for public programs</li> <li>Presence of a structure or department to do advocacy and resource mobilisation for malaria</li> <li>Knowledge and skills in resource mobilisation</li> <li>Skills to negotiate with the Ministry of Finance for more resources</li> <li>*The Ministry of Health has a National Malaria Control Program</li> <li>*Evidence from implementers does not indicate that there has been increases in funding for malaria control but decreases</li> </ul>
5. Coordination and support supervision	<ul> <li>Cascade supervision and monitoring covering all levels of care including the community</li> <li>Integrated support supervision by Quality Assurance Department and Malaria Control Program using checklists</li> </ul>	<ul> <li>Does not concretely indicate the supervision and coordination of private units</li> <li>Does not concretely state whom supervision at the community level is to be targeted -is it CDDS or community leaders, households?</li> <li>Does not concretely provide for supervision of and coordinating the private for profit health sector</li> </ul>	Facilitation of existing health units to supervise communities and lower public and private for profit units *Minimal coordination and supervision of lower level units by the national malaria control. There is reported social distance between implementers and NMCP. * supervision of the private for profit health care sector
6. Monitoring evaluation and research	<ul> <li>Monitoring treatment policy implementation</li> <li>ACTs to be incorporated into existing medicine efficacy studies and pharmacogilance system</li> <li>Monitoring of sick children attended to by CDDS</li> </ul>	<ul> <li>Monitoring sick children attended to by the health units</li> <li>The role of health units to monitor treatment policy or input in the activities of the Surveillance Centres.</li> <li>Monitoring indicators designed from the perspective of health workers /service provision and epidemiology relegating the interests of the service beneficiaries</li> <li>Service barriers not monitored and evaluated</li> <li>Behaviours of clients are not observed and measured yet they were reported to sustain malaria morbidity and mortality</li> <li>How health units are to input in the national disease control research agenda and receive back findings</li> <li>Reporting structures of communities for suspected bad medicine</li> </ul>	this component of the case management policy is the least developed and implemented Sick children who complete treatment at home are not monitored Severely sick children admitted in hospitals are monitored Minimal monitoring of the disease control programs in the community Minimal involvement of the health units in disease surveillance; limited relationships with the surveillance centres Minimal monitoring of drug performance, and adverse effects at community level

The case management strategy has some capacity to reduce the disease; but it also have gaps and challenges that need to be addressed before it can effectively guide implementation for reduced morbidity and mortality. The key proposal to reduce morbidity and mortality by availing <u>all</u> health care systems with efficacious drugs and ensuring prompt treatment assumes increased funding levels for the entire health sector (since malaria services are always integrated with services for other conditions in all health care units). However, the policy does not indicate how funding will be generated and increased for improved availability of efficacious drugs for all case management programs in all health care systems. Policy has gaps on resource *availability*, resource improvement, distribution and *equity* of drugs, health care units, staff especially during malarial seasons and causative factors. Actually the item the policy is most silent about or does not concretely commit itself to is funding and resource mobilisation for increased drug supplies and other supplies.

This implies an inability to achieve what is proposed in the policy. It also indicates uncertainness and powerlessness on the part of the Ministry of Health Officials to lobby, negotiate, and mobilize financial resources outside the mandated Ministry of Finance. Therefore, these challenges indicate an inability for the country to reduce morbidity and mortality due to preventable causes like malaria. In actual practice the third column indicates implementation failures to get all private for profit clinics access free coartem for distribution to their patients. The issue of funding is further explored in a section of its own ahead.

Likewise, increasing incentives like housing accommodation for health workers near units and remuneration were alluded to in Chapters 3, 5, and 6, as likely to improve health worker *availability* and *accessibility* in public units. But the policy is silent on such issues. Prompt treatment and diagnosis cannot easily be achieved when, for example, guardians of sick children line up for long during the malarial seasons without increased staff numbers.

The concept and value of *availability* was observed in Chapter 6 to relate to health care units, staff, as well to the *availability* of adults in homes for the management of malaria in children. These carried out different roles such that when one was absent especially the father, then children delayed to get prompt treatment because women did not have the money for treatment. Women economic *empowerment*, *capacity building* for mother surrogates, as well as *social capital* in forms of community mutual support groups were considered worthy being addressed by the policy. However, the policy does not concretely address these causative factors. For example, there is no provision on how to improve the capacity of domestic workers in the management of malaria in the absence from home of working mothers.

Some of the service utilization values indentified in Chapter were addressed, while some were not. Other values were partially addressed. Most fell in the group of partial and none address or coverage. Among the values which were partially addressed were *availability and access to strong drugs, familiarity, protecting citizens from large-out of pocket payments* for medical care. For example, the policy indicated that it would provide free ACTs to all health care units including public and private units. This was to make sure that people would be able to access effective drugs from the units of their choice or the ones they were *familiar* with. This principle seemed to have been based on the assumption of *perfect implementation* which is not feasible in the Ugandan context. The policy does not address implementation challenges such as drug stock outs particularly as they affect the poor and most vulnerable in society.

Concepts of *equity* and *vulnerability* are mentioned as principles and values in the policy documents but they are not operationalised in adequate detail in all the seven documents. Inability to focus on the most vulnerable has been associated in Chapter 3 with failure to *disaggregate infant and child morbidity and mortality data* by social economic status indicators of sufferers of the problem. Although other national level community surveys such as the Uganda Demographic Health Surveys (by practice) normally disaggregates data by social economic status of the health service users, it would be important not to leave it to chance. The policy is silent on the issues of disaggregating data in the HMIS

for purposes of identifying the most vulnerable children. It is also silent on the collection of mortality data in the community where many children die before they reach the health units (Chapter 5).

Although in practice the community antimalarial distributors (HBMF strategy) collected information on morbidity, mortality and ITN use from guardians of children who used homapaks, the practice did not cover those guardians who consulted health care units. In any case, the registers were also deficient in that they did not collect information on the socio-economic status of the guardians of the sick children even where it was known. The HBMF Strategic Plan suggests collecting such information and others using surveys. The surveys may indicate the proportion of people engaged in certain practices but may not identify the exact locations of vulnerable children and their families. Generally the policy is deficient in that it does not indicate important information that needs to be collected on malaria in the clinics and community for purposes of identifying the most *vulnerable*. Inability to deal directly with the poor and most endemic regions means that *sustainable changes* to control and prevent malaria cannot be achieved.

A value which is not concretely addressed is that of *added value* whereby health care units promise to offer services that are professional and, therefore, different from self treatment. An example of a service suggestive of *added value* is laboratory services in the public and private health care sector. The value of *flexibility* helped child carers to obtain treatment easily from the drug shops and private clinics using whatever little money they had, or on credit. *Flexibility* did not, however, foster effective case management as sometimes children got half dozes of antimalarials. Addressing this paradoxical value would call for the support of the private for profit health care sector or contracting it to provide free or subsidized care to the population.

While the policy specifically mentions the need to teach household health care managers how to identify fevers/malaria in the under-fives, it is silent on how to make health workers promptly identify the severely sick while in OPD. Chapter 5 indicated that health units did not have a method of sieving out the most severely sick children from the patient queues. Promptness in being attended to depended on the smartness and pressures exerted on health workers by the child carer as well as the good will of fellow patients who permitted a severely sick child to jump the queue. The policy also has no provision for organizing transportation of the severely sick to reach a higher level of care promptly in situations of lack of money in the household. Although the policy is assumed to contribute to poverty eradication, it fails to operationalise how to help poor people to cope whenever there are institutional failures like drug stock outs in public units.

An area where the case management strategy is relatively more comprehensive is with the training. The National malaria strategic plan and the Communication strategy ably articulate the actors to train, the knowledge and skills they need, the behaviours and attitudes to be changed, acquired, or enhanced. These plans indicate that malaria is to be incorporated in the pre-service curricular such that all graduating health workers have the knowledge and skills to manage uncomplicated malaria and also diagnose and manage severe malaria. Health workers and managers are also to obtain on the job training about malaria. Areas where the strategy are not very well developed is the monitoring, evaluation and research provision, coordination and supervision.

Another finding coming out of Matrix 3 is that there are many aspects where policy provisions are comprehensive with an ability to ensure equity and attainment of desired social goals; but the process is let down by implementation failures. A good example is the principle of availing efficacious antimalarials to all health care units. The idea is good but it is let down by implementation problems, and the underlying factors notably - resource constraints, service delivery organization and integration problems. The third column of the matrix shows many areas where policy exists but implementation is failing. Implementation is partly failing because of the top-down policy and planning approach which assumes the existence of *perfect implementation* and especially the existence of adequate resources. This is a wrong assumption partly explaining an inability to reduce morbidity and mortality associated with common conditions like malaria.

It is noted that some of the issues identified in Matrix 2 as being inadequately addressed are generic in nature. These include issues of distribution, mapping of health units, attracting private health care units to under-served areas, motivation of staff, housing for health workers, and development of public-private partnerships, among others. These generic issues would ideally best be addressed by the national health policy and strategic plan. However, it is the argument of this thesis that an adequate policy needs to operationalise, tailor or *adapt* the generic issues to the specific needs of the disease control program for effective performance. An example is operationalisation of issues relating to increasing staffing during the malarial seasons and epidemics or contracting out the private sector to manage part of the patient load. This would ease promptness of service access while enhancing quality of care.

## 7.3.2 Prevention and health promotion activities

Preventive activities are subscribed to by three policy documents: the Malaria Control Strategic plans, the Policy and Strategy for Insecticide Treated Nets, Malaria in pregnancy Strategy Plan and the Communications Strategy for malaria. Although the National Malaria Control Policy is relatively *holistic* in the sense that it proposes undertaking measures targeted at personal protection, vector control, environmental management, and biological control; the strategic plans fail to capture this.

The recommended measures for prevention of malaria include use of Insecticide-treated bednets (ITNs), intermittent presumptive treatment (IPT) for pregnant women, and indoor residual spraying. These measures are basically meant to reduce contact between the mosquitoes and the individual human being, thereby reducing mosquito bites and malaria transmission. The thrust of the Policy and Strategy of Insecticide-treated bed-nets is scaling up coverage of nets while being sensitive to equity issues or *vulnerability*. While there are many factors constraining ITN use (Chapter 5), the policy addresses just a few notably the issues of knowledge attitude and beliefs in using ITNs, and provision of free or subsidized nets to children and pregnant women. The policy does not fully address the chain of factors that influence the non-use of ITNS identified in Chapter 5 such as the inappropriateness of the preventive technology in poor households. It does not

concretely address social capital and empowerment for health promotion. However the policy proposes to provide health education to the communities and is sensitive to the poor funding of the strategy. There are proposals to solicit for resources for successful implementation of health education.

Chapter 5 indicated that each geographical area had its own risk factors in line with the physical geography, economic activities of the people and levels of organization of the people. This calls for individualized study of the risk factors and preventive courses of action. The policy is silent on this and provides blanket preventive solutions to the entire nation.

The policy further assumes that every child is equally vulnerable yet Chapter 5 indicated that it is the rural agricultural and big sized families which were most vulnerable to uncomplicated malaria. While universal targeting of free or subsidized nets to all underfive children would achieve the desired coverage, limited resources committed to the health sector (Chapter 6) threatens this achievement. The basic needs approach cautions against *saturating the whole population with services as this does not produce sustainable growth* (chapter 3). Failure to target the free subsidized ITNs to the most *vulnerable* children constitutes a policy inadequacy.

However, at the time this study was done it found that the most vulnerable communities had obtained free ITNs. In other words, the practice on ground was different from the blue print policy. This finding provides evidence of the intimate relationship between policy and implementation and the need for policy documentation to reflect what actually transpires on ground. There is need to monitor how health care systems identify and deal with the vulnerable clients in difficult situations. Policy does not provide for a structure and processes to continually collect information on the best and poor practices of all health care systems for policy refinement. As long these are not being recycled into policy, it may be difficult to break the current practice weaknesses and come up with innovations appropriate for the country's developmental context.

The prevention policy also provides for the promotion of the commercial sector to procure and distribute nets to the rest of the population at a cost. The policy is still inadequate here because it does not address issues of poverty and un-affordability of nets by many households (Chapter 5). While *social capital* has been shown to enable people elsewhere to pool resources for their development, this policy does not indicate how the poor are to be enabled to pool resources to buy new nets for the adults and replace those given to children when they get worn out. Chapter 6 indicated that while CBOs existed in some communities they mobilized resources for other purposes other than for managing and preventing malarial illnesses. Networking with CBOs is mentioned in the policy but does not provide guidelines indicating the tasks, and responsibilities they have to undertake for disease prevention and health promotion.

Although the policy indicates that other government departments and other sectors like schools will be involved in the control and prevention of the disease, the policy does not provide guidelines or tools to enable them effectively participate. Chapter 6 provides evidence of minimal participation and existing missed opportunities. Given that policy represents what governments *say they will do, what they actually do, and not do,* minimal multi-sectoral participation in malaria control constitutes a policy inadequacy. This assumes again that malaria is perceived by the policy making institution as a purely medical issue best managed by medical and public health experts. This assumption is wrong because many of the *person-environment* causal factors for malaria lie outside the expertise of medical people.

Indoor residual spraying (IRS) is another proposed action against malaria transmission targeted at congested areas, institutions, emergency situations (such as the internally displaced camps); and malaria epidemic areas (MoH 2006)<sup>49</sup>. According to the IRS policy guidelines, only approved and registered insecticides and compression sprayers are tobe part of the malaria vector control strategy. DDT is one of the proposed insecticides to be used amongst the 18 most commonly used insecticides (UNAS 2008).

<sup>&</sup>lt;sup>49</sup> The IRS policy guidelines were accessed by the study much later in the early 2008 after data collection in the study districts were done. Only aspects of it that, is the use of DDT which dominated the discussion for a longer time throughout the study period are hereby presented.

DDT which is sprayed inside of houses acts as an irritant to prevent mosquitoes from biting. Its repellant effect works without physical contact. DDT was last used in Uganda in 1970. The proposal to revitalize the use of DDT has been a source of controversy and contest reported in the mass media and country at large. This proposal has been met with resistance from environmental activists, horticultural association, hotels, organic farmers and exporters, scientists and development partners especially the European Union as well as the East African Customs Union. This latter organization prohibited the importation of DDT in member countries including Uganda.

Using a critical discourse analysis approach the study reviewed and analysed articles on DDT which appeared in one prominent newspaper - the Daily Monitor between 2003 and 2008. Using a search word of DDT a total of 16 articles on DDT were electronically retrieved and studied. There were very polarized opinions on whether or not to spray. Major arguments against spraying DDT rotated around the threat DDT presented to exports, to the environment, and to human health. DDT is reported to be a condemned chemical which was banned in the western countries 40 years ago, following publication of a book which indicated that widespread and indiscriminate use of DDT in the USA and western Europe killed wild life over vast tracks of North America and western Europe. DDT was being reinstated by WHO without having changed its chemical formula. Color ally, antagonists perceive the reinstatement of DDT as an imposition on Uganda by the developed world and multi-national organisations. Implicit in the arguments is a perceived lack of goodwill emanating from unequal power relations between the economically dependent malaria suffering countries, and the malaria free donor developed world.

Antagonists of DDT argue that DDT is a persistent organic pollutant (POP) harmful to living organisms including man. It is reported to be dangerous even when used in minute forms. DDT can cause human carcinogen (especially breast and liver cancer), can damage the nervous system, and reduces reproductive success, (Monitor --June 2006). DDT can get attached to soil particles and is easily moved by wind and water to any part of the world. "It takes about 8 years for an animal to metabolise half the amount it assimilates and 15 years for the environment to break it". It was feared by organic farmers and exporters that the presence of DDT residues will endanger the lives of European Union consumers, leading to a ban of the exports and thus present an economic loss to the farmers (unless compensated). Food items which are kept in sleeping houses are likely to get contaminated.

Other concerns raised are:- i) spraying inside houses will not address the problem of mosquitoes which bite from outside the house; ii) countries like China and India which produce large quantities of DDT do not use it (iii) spraying in Uganda may not make an effect unless neighbouring countries also sprayed; and iv) persistent and continuous use of DDT will create resistance of the vector to DDT. Antagonists propose that government should use other alternative interventions, alternative chemicals, or even treat and wipe out parasites from the human body so that the mosquitoes are not infected.

The government of Uganda, supported by WHO, some local governments and an African pressure group fighting malaria, have defended their position by saying that DDT will be sprayed inside houses and not gardens; that DDT presents no harm when used properly; that the MoH will train people who will spray the chemical. It is further argued that the fears of environmentalists have never been empirically proven and therefore were untrue. The amount of chemical escaping is too negligible to affect the food chain. Despite these polarized positions, NEEMA (a Ugandan government institution) approved its spray in 2007. Spraying had, however, not started at the time of this study because the government had not yet raised the US \$ 400 million (Shs 750 billion) needed to start the exercise.

It was observed during this study that the most recurring concerns in this DDT discourse were the economic and environmental interests. The two sides to the argument (i.e. government and the activists) have kept polarized positions without drawing a balance for disease control. Failure to come up with strategies that balance environmental, economic and disease control interests creates a lot of powerlessness on the part of potential change agents with resultant perpetuation of a problem. Inability to balance the economic and environmental interests was also identified in Chapter 5 as threatening and disempowering communities and leaders to better manage the environment for disease control. Policy is silent on how to empower people and institutions to handle conflictual situations like that of DDT where *coalitions of interest groups shift the implementation process*. Until the policy comes up with a middle level ground and guides implementers on what to do, reduction of malaria morbidity and mortality is likely to remain a myth for Uganda.

Based on these findings, this study argues that balancing environmental and economic interests for purposes of disease control is another *human rights value* which should be added to Hunt's (2007) list of human rights to health.

## 7.3.3 Service delivery structures and organisation

The organizational structure for planning and implementation of the malaria control policy is *a top-bottom* structure with horizontal linkages. It includes a myriad of people and institutions notably: the Malaria Control Program of the Ministry of Health, local government, households, private sector, community political leaders, faith based organisations, donors, NGOs, the private sector, health workers in communities and health units. This is in accordance with the Roll Back Malaria concept of *partnership* and *comparative advantage* (Chapter 2).

Malaria Control in Uganda is managed under a Program called the Malaria Control Program (MCP) within the Division of Infectious Diseases of the Ministry of Health. The Malaria Control Program at Central level is responsible for policy formulation, setting standards, resource mobilization, capacity development, technical support, malaria epidemic control, coordination of malaria research, monitoring and evaluation. The Control Program is assisted by the National Malaria Control Advisory Committee<sup>50</sup>. The major role of this committee is to advise on policy and technical issues while also promoting advocacy, information sharing, link initiatives, enhancing integration and

<sup>&</sup>lt;sup>50</sup> This committee is called another name in the National malaria control Strategic Plan; that is, the Interagency Coordination Committee for Malaria (ICCM).

resource mobilisation. This committee's work is steered through four working groups namely: the Research working group, the Case Management Working Group, the Advocacy and IEC Working Group and ITNs and Vector Control Working Group.

The National Malaria Control Policy proposes the integration of control plans into other health programmes notably: the Integrated Management of Childhood Illnesses (IMCI), the School Health Program, Expanded Program on Immunisation (EPI), Water and Sanitation, and Safe Motherhood. It also indicates a desire to work with government departments like agriculture, gender, works, environment, local government, and finance; NGOs, civil society, the private sector, research and teaching institutions, development partners, neighbouring countries, and the community. These are to be used according to their *comparative advantage* (Chapter 2). Common activities to be engaged in by the partners are resource mobilisation, advocacy, service provision, capacity building, monitoring and evaluation.

The MCP relates with the districts through the Zonal RBM and IMCI teams which work closely with the district malaria Focal Persons. The districts are responsible for planning, resource allocation and policy implementation. Below the district is the administrative structure of health sub-districts a newly created structure in the Ministry of Health to do planning and implement PHC activities in their catchment areas. The HSDs are also expected to supervise the health units (both public and private) in the area. The communities, and the families have certain responsibilities specified in the strategic control plans.

A number of assumptions are discerned from the service delivery structure and especially the involvement of other actors. The major assumptions are: a) that all stakeholders share the importance of malaria as a societal problem affecting people's wellbeing, and poverty reduction; b) that malaria control is perceived by all actors as having relevance to the attainment of the goals of their own programs; c) that the partners have a good knowledge of the risk factors of the disease; d) that the different actors are able to articulate the aspects of the problem they handle; d) that they have the capacity and competencies to handle the tasks assigned to them for malaria control and prevention. Chapter 6 nullified most or all these assumptions. Other actors including the structures of the Ministry of Health are not equally committed to malaria and many do not know what to do about the disease considering it to be an *individual trouble*. The policy does not adequately address these issues.

A number of other problems were also identified with the proposed structure. The first problem was the inconsistent theory used in the *problem definition*. The way the policy making institution constructs the problem restricts the problem to the medical professionals limiting the contribution of other sectors and disciplines which may be concerned with the management of the *environment* and the *person-environment interactions*. The proposed *partnerships* in the RBM and policy are likely to remain on paper, because *problem construction* does not assign them activities to undertake. Without assignment of activities and tasks to perform, other actors have no *political legitimacy* and authority to participate in malaria control. Effective *partnerships* for malaria control requires a broader definition of the problem able to articulate causes and activities implementable by other partners.

Secondly, at the time of this study, there were no guidelines articulating the *shared interests* and indicating the specific tasks to be undertaken by the different government departments at all levels of social organization. The involvement of many partners assumes the existence of *shared goals and interests*, as well as *clarity* of the activities and tasks to be implemented (Chapter 6). Identification of shared interests is an anchor from which other sectors get motivated to wish to plan for malaria control and prevention. Lack of tools to use by other sectors was indicated in Chapter 6 as one of the reasons for minimal participation of other actors in malaria control and prevention activities. The policy does not comprehensively list the guidelines to be developed for use by all actors.

Thirdly, the ICCM does not have a grass-root structure to spearhead its activities at the regional and district level. There is, therefore, minimal continuation of the tasks undertaken by the ICCM at the regional and district levels. Minimal *integration* or

coordination may partly explain the limited interest of actors at the grassroots in malaria and resultant neglect. The service delivery structure involves many actors at community level. The policy does not indicate who will coordinate who at the different levels of governance. Chapter 6 indicated the importance of constant contact of local level actors with management teams from the Ministry of Health headquarters. The more *socially distant* the senior management and policy making organs are from implementers, the less the motivation and *commitment* to policy implementation.

Other problems are:

- (a) The policy is silent on how to improve the distribution of the private clinics to underserved areas. Private clinics were showed in Chapter 5 to be the major sources of care for uncomplicated malaria.
- (b) Although it was found that there is some division of labour between the public and private health care sectors over the management of uncomplicated and severe malaria (Chapter 6), the policy does not build on this practice to support each actor according to its *comparative advantage*.
- (c) The position of the Zonal Officer is not reflected in the sub-program strategic plans, implying that this expert's input is not likely to be felt in local level malaria control activities.
- (d) The policy does not concretely address issues of enforcement, to ensure that each partner implements the stipulated policy provisions.
- (e) The mass media, schools and companies/employers are not fully integrated in the national malaria control policy except in the Communication Strategy.
- (f) There are no grievance reporting structures for the public to enable child caretakers report unprofessional handling of malaria cases and other concerns both in the public and private sector. Although community leaders mentioned the existence of health unit committees with the mandate to resolve such problems, the policy does not provide for mechanisms of communication between the public and these committees and the important issues about malaria that must be always brought to the attention of the committees by the public.

(g) The concept of *voluntarism* is not concretely addressed in the policy. Chapter 6 indicated the problems of defining the scope of voluntarism – the responsibilities and incentives; the expectations of volunteers from government and the communities, and vice versa. The Chapter also identified some of the conditions that needed to be in place for *voluntarism* to produce sustainable services and outcomes – including facilitation and provision of managerial and technical support supervision. Contrary to this, the HBMF strategy which relies entirely on use of volunteers does not concretely address issues of incentives or facilitation. It is assumed by the policy makers that once communities are made to own the program (through advocacy), that the program will be sustained. In reality, this has been proved to be wrong (Chapter 6).

Integration was found to still have a number of conceptual problems in the policy and practice. Policy does not concretely indicate:- a) integration of technical and political goals and tasks b) integration of health sub-districts' disease control plans with those of the constituent health units; c) integration of curative and preventive services in the public and private health care units; and d) integration of health units and community health resources for purposes of monitoring and supporting vulnerable children and families; e) integration of vertical programs with mainstream services f) managing common conditions with emergency conditions; and g) linkages between health units in disease surveillance and non-surveillance centres. Generally, the issue of *integration* and its challenges were not concretely handled.

## 7.3.4 Capacity building

Some issues of capacity building have been discussed under training for case management. Below are some more observations not addressed.

Although the policy mentioned a need to empower communities to do certain things, the study found that it did not specifically emphasize the need for capacity building in *community organizing, empowerment and social capital* development which have been shown to be recurring factors in the explanation of persistent morbidity and mortality

associated with malaria. Attainment of the highest standard of health requires that health workers are able to engage in political activities to be able to lobby and negotiate for more resources for health services and other policies. The policy is not committed to providing negotiation and lobbying skills to health managers and planners. The policy is also quiet on how malaria training needs of health workers are to be assessed on a regular basis. It has no provisions for developing capacities to analyse HMIS and community level data at the health sub-district; as well as capacities to improve malaria research at the district level.

## 7.3.5 Monitoring, evaluation and operational research

Monitoring and evaluation are process aspects which are considered in the policy. The policy proposes to monitor both the process and outcome of malaria treatment and prevention activities using data from community surveys, HMIS, surveillance centres, supervision, malaria drug efficacy studies, and mosquito insecticide susceptibility studies. The specific program documents indicate the monitoring indicators. Some of the indicators mentioned in the Treatment policy document are drug availability, acceptability, compliance, mortality, morbidity, and process. The Strategic Plans monitor the specific objectives as outputs. An example is "the percentage of under-fives with a malaria/fever attack getting appropriate treatment within 24 hours of onset"

Monitoring and evaluation mostly target the program dimensions but inadequately the sick children and vulnerable families. Where vulnerable children are monitored as in the case of CDDs who distribute homapak, it is not equally done for children who receive care from health units. This constitutes an inconsistency in the policy. This study discerned a need for the provision of support and monitoring of the families which experienced deaths and disabilities (Chapter 5). Another issue which is not concretely addressed is the role of the community in collecting vital data on child morbidity and mortality. This study found that the majority of under-fives died at home or in community institutions while only 40% died from the health units (Chapter 5). The policy does not seriously and concretely propose the manner of understanding the risk

factors at home and the community and the need to promote regular collection of vital data on children in communities.

This study argues that the processes of intervention from assessment, planning, implementation, monitoring and evaluation need to be applied by all the actors to problem solving. Although the implementation theory emphasizes *participation* as a means to successful policy implementation, it is silent on the processes of monitoring and evaluation. Other issues not addressed under monitoring and research are: a) the role of districts in initiating research on malaria and mobilizing funds; b) the role of health workers in monitoring the effectiveness of drugs; c) identification of best practices and threats to key intervention strategies; and (d) the role of local governments in generating and developing a research agenda for malaria and outsourcing research institutions to execute it. The policy does not provide for provisions to undertake entomological studies in sub-counties and districts on a regular basis.

## 7.3.6 Funding

The element least seriously addressed in the malaria control policy and the strategic plans is funding. Only 2 documents out of the 7 indicate the sources of funding. These are the National Strategic Plan and the Treatment Policy. Again only two documents provide some estimates of the budget needed to implement the program. These are the HBMF strategy and the overall Strategic Plan. The HBMF indicates the budget but not the sources of the needed funds. The budget covers activities for a year. The National Malaria Control Policy and Strategic Plan indicates the main sources of funding as being government, the community and private sector, allocations from the district and subcounty revenue collections, bilateral and multilateral support.

Statements on funding are not concretely made, making it appear that the policy producers were not certain or clear about funding possibilities and how much to expect from each source. The Malaria Control Strategic Plan provides for an annual increment of 10% in government funding. Annual increments for other sources of funds are not projected. There is an assumption that the different sources will "increase" their funding

with time. The statements do not indicate the baseline per capita contributed by each source and the proportions each source is expected to contribute in the future. The limited attention given to funding could be due to the fact that such information is presented elsewhere like the Health Sector Strategic Plan and other macro level financial documents.

Where policy mentions funding, it does so from the perspective of the institutions. It indicates the funding sources and the amounts of funds necessary to manage institutional health care. The policy is silent on whether the services will be offered to patients free of charge or otherwise. Silence on this issue is a gap which gives leeway for policy implementers in government units to introduce user fees as and when they wish. Indeed this study found that although the Presidential pronouncement was that health services in government units were to be universally offered free of charge, some health units were charging some money and some had paying private wings. The funding policy assumes the existence of *perfect implementation* whereby once the rules of the game are in place, resources are expected to be in place. Use of the private health sector is assumed to be used as a matter of choice and not because public services are not in place. Yet, as shown in Chapter 6, public services are poorly funded and inequitably distributed leading people to use other existing alternative sources of care.

The above assumptions and the *public choice theory* used by the policy making body are partly responsible for the neglect of the private sector in the policy; and provision for the poorest people who may not afford the cost of drugs from the open market in situations of drug stock outs in government units. Chapter 5 and 6 indicated that absence of money at the time a child fell sick was a predictor of severe malaria and deaths in rural agricultural households. Chapter 6 indicated that the health workers responded to the issue of drug stock outs differently. Many asked the carers to buy medicines from the open market while some bigger units with private paying wings borrowed drugs from there to cater for the needs of very sick children whose parents could not afford medicines in the pharmacies and drug shops.

Matrix 2 above indicated the existence of implementation failure for government to avail efficacious drugs to the private for profit sector for treatment of malaria. Despite this situation, the policy is not committed to organize communities to pool resources for malaria treatment. Chapters 5 and 6 showed that communities were not organised and had low stocks of capital because the households were not *bonding* for purposes of pooling resources for the management and prevention of malaria. Prepayments in the form of community insurance schemes are reported in Chapter 3 as having reduced severe malaria and mortality in communities surrounding Ishaka Hospital in Bushenyi district, Uganda.

The malaria control financing policy does not also tailor resources and capacity building to health systems in accordance with their areas of specialization. Earlier chapters indicated that the private sector manages the bulk of uncomplicated malaria while the public units manages the severe cases. This is one good example of community organization for disease control where government needs to redistribute functions, power and resources for the attainment of the desired social goals.

Generally, funding is so critical in the reduction of morbidity and mortality associated with malaria. This study has shown that it also a resource in very short supply making it difficult for the policy to achieve the desired social goals. This could in turn be a function of the society's poverty and levels of social and economic development as well as inequitable distribution of the country's developmental benefits and services. Therefore, malaria is a developmental disease which needs to be mainstreamed in all poverty reduction programs and projects as is done with HIV/AIDs.

Lastly, as indicated earlier, the malaria control policy documents focus their attention on the technical interventions and less on the generic inputs like funds. It is assumed that malaria will always be handled with the stipulated resources and level of organization. This assumption is wrong because each disease has its own resource needs and demands for organization. For example, it was observed that during the malarial seasons, the ratio of patients to staff went up, creating delays in attending to sick children. Staff got stressed with resulting poorer performance, and quality of care. Other facilities (like beds in units with admission services) were also over-stretched making some children to sleep on the ground (Chapter 6). This means that to maintain a certain quality of care, there is a need for the malaria control policy to provide principles on how to mobilize and reorganise important resources like personnel, drugs, laboratory services, and other logistics during the malarial seasons. It is by inclusion of such peculiar characteristics of the disease (including epidemics) that could form the basis for lobbying and negotiating for more resources.

*Adaptation* of ideas from the national health policy document is considered by this study to be one element of the policy making process leading to production of an *integrated implementation guide*. It is an integrated implementation guide which is likely to mitigate constraints like those mentioned above, including motivation and poor working morale, and also work overload due to too few staff in units (Chapter 1, and 6).

## 7.4 Forms policy inadequacy takes

This section synthesizes the nature policy inadequacy has taken in Uganda providing insights into issues for consideration during policy re-formulation.

Policy inadequacy has taken the following forms: a) inconsistencies between the policy provisions; b) inconsistencies between policy and implemented actions and processes; c) omissions, d) silence on salient issues e) not operationalising some broad national health policy provisions and tailoring them to disease control policy; f) ignoring the context in which policy is implemented. These inadequacies affect the choice of policy targets, the interventions, the service delivery structures, the processes, the policy financing considerations, and outcomes. Each of these is elaborated on briefly below indicating explanations for the status quo. These different forms interface especially in terms of their underlying explanations and effects.

#### 7.4.1 Inconsistencies in policy

Inconsistencies in policy is manifested in two main forms; that is, inconsistencies within the policy provisions, and inconsistencies between policy and implementation. An outstanding example of inconsistencies between policy provisions is where a policy goal for disease control policy targets the entire population's social and economic well being, while interventions (both in policy and practice) target the individual sick person. Because of the tendency for interventions to target the individual sick person, it becomes difficult to achieve fundamental changes in population and community health.

The major explanation for this is a deficiency in problem definition and underlying theory used – the *structural functionalism* or the biomedical theory. This theory tends to focus on the individual while isolating him/her from the environment that sustains the problem and holds resources for problem solution. It also tends to emphasize disease rather than health. Failure to tackle the problem *upstream* leads implementers to continually engage in firefighting which creates a lot of fatigue and stretching of scarce resources and ineffectiveness. This theory leads to interventions that focus attention on the individual and not the family, and the community; on *treatment and prevention and not health promotion*. The limited scope of problem definition is also responsible for the many gaps observed in the policy.

Use of this theory also means interventions are left to be carried out by just the medical people. Thus, use of this theory gives other disciplines and sectors less opportunity to participate in disease control because the environmental aspects they would otherwise have worked on are neglected in the problem definition. While one of the elements of PHC is to engage other sectors and disciplines in disease control in accordance with their comparative advantage, this has not been possible because of the limited and restrictive problem definition and subsequent lack of *comprehension* regarding what they (other potential partners) have to do.

Another inconsistence is found between policy and implementation. For example, there is a tendency for health workers not to follow the recommended treatment procedures of starting with the first line drug followed by the second line drug. This has been attributed mainly to rampant self treatment practices, the existence of fake drugs on the markets, a zeal by health workers to see that a sick person recovers quickly to deter complications. Although the problems of drug quality may be managed by specialized agencies like the National Drug Authorities, the disease control policy does not provide for mechanisms for health workers and communities to report fake drugs and changing clinical practices. While the long term effects of changing treatment procedures by health workers may not be known, this cannot stop the argument that policy is inadequate. It is inadequate because it fails to guide practice in some challenging clinical situations. In some respects, policy and implementation are not interwoven and are therefore not able to cross fertilize each other for better health outcomes.

The inconsistence seen between policy and practice is because of the perceived split between policy and implementation which is characteristic of the top-down approach to policy formulation. The top-down approach to policy making and planning regards implementation as an administrative activity existing to execute directives from the top and not to contribute to policy. This study argues that policy needs to have provisions permitting implementation experiences by all stakeholders to feed into policy on a regular basis beyond submission of morbidity and mortality statistics and researches. This study further argues that an adequate policy should be able to address the original problem as well as the emerging implementation problems.

Another area where policy and implementation differed was with the considerations of vulnerabilities. While policy considers only biological vulnerabilities, some implementers consider socio-economic vulnerabilities in the distribution of scarce preventive technologies like ITNs; during the rationing of drugs in government units, and costing of treatment in private clinics. For example, in the private clinics some health workers charge money for treatment according to the social economic grade they perceive a client to belong. Poor people are charged relatively smaller amounts of money than the rich for the same need and service. Because such practices are not incorporated into policy but dependent on the personality or compassion of a single policy implementer, their impacts are not felt widely, however good the practices may be. Disease control policy seems not to be guided by some of the best practices on ground. Actually policy does not provide

for the continuous collection of data on the best clinical and administrative practices for purposes of improving policy.

# 7.4.2 Omissions in policy

The policy is characterized by a lot of omissions or gaps. Omissions take the following forms:- a) deficient targeting of policy b) deficient processes; c) marginalization of the private sector; d) incomprehensive management of the critical values; e) inadequate number of guidelines; f) relegation of health promotion in all activities including capacity building g) deficient attention on community organization, social capital development and empowerment for disease control and prevention. The gaps in policy detract implementers from doing the right things resulting into minimal impacts on population health.

Deficiencies in targeting took the following forms: - a) targeting morbidity and mortality and totally ignoring disability caused by the disease; b) targeting the technical people and donors and leaving out the lay people; c) targeting individual sick children and relegating the family, community and entire population for disease control and prevention; d) targeting case management and prevention and leaving out health promotion; e) targeting services to biological vulnerabilities and ignoring social economic vulnerabilities, rural /urban vulnerabilities, and seasonal vulnerabilities. Each of these issues is elaborated on briefly below.

Although most common illnesses/diseases can cause disability, the policy pays more attention to controlling uncomplicated and severe illness paying little attention to disability. Evidence from this study indicates that children who get disabled and their guardians suffer a lot of *stress* emanating from the high social and economic costs during long hospitalizations and after. Children have to keep on medications for a long time and have to keep visiting hospitals which are located very far from their homes (Chapter 5). Many of the children who get disabled also tend to come from poor families because it is mostly the poor who cannot afford prompt health care seeking from professionals. A guardian needs material, social, and technical support to effectively manage the social

and behavioural problems acquired by a mentally and physical disabled child. Although rehabilitation services may be offered by other specialized medical departments, other government departments, and NGOs, the disease control policy does not indicate the linkages, networks to be done by policy implementers in the health units and also in the community.

Although the IEC strategy incorporates messages to foster good case management at home, it has not adequately addressed prevention and promotion issues which communities can ably work on once *empowered*. Furthermore, while the IEC strategy addresses KAP issues, it does not adequately address issues of inappropriate values and norms in households and communities. An example of a norm not addressed by the policy is where adults use a preventive technology against the disease while denying it to a child who is most vulnerable. This *self regulatory capture theory* arises out of inappropriate norms and values relating to health care management in the households and communities.

Relegation of the households in the policy is partly due to the *top-down implementation theory* which largely targets technical people. The top-down generated disease control policy also fails to provide for a structure able to proactively create relationships between the policy making body with the households, empower them, make them internalize the policy provisions, own and execute them, as well as input in the policy making process. The local governments which would create such relationships have as yet to grasp the issues involved in disease control, prevention and health promotion. The health belief model is also deficient in that it focuses on beliefs and less on norms and values.

Another outstanding omission is that policy is quiet on the a) the processes to be undertaken to change or modify a policy; and b) the pointers or triggers to policy change and modification, and c) the preparations to ensure a smooth and swift change from the old to new policy at implementation level by all stakeholders. There is evidence in this study that despite the change in treatment policy three years prior to the study, many health units still used the non-recommended medicines for malaria. Policy does not indicate the preparations that need to be made to ensure that all health care systems both public and private implement the new treatment policy wholesomely and consistently. Although the private sector manages the bulk of uncomplicated illnesses/diseases, they are not brought on board the implementation of a new policy in a timely manner. For example, they are not availed with the new drugs at reasonable prices and trained. Normally the few private practitioners trained are still not availed with the new drug (Chapter 6).

Government health care units which are normally the pioneers in implementing the new treatment policies also continue to use the old non-recommended drugs whenever they run out of the new drug. The reasoning that the health units had lots of stocks of the old medicine also indicates poor planning and inefficient use of scarce resources. Poor planning is partly a function of inadequate policy. As long as the old treatment policy continues to be implemented alongside the new policy for unspecified and uncontrolled time periods, then children continue to get substandard health care making it difficult reduce mortality.

Policy is also inadequate because of the selective application of generic processes by health care systems. There is a tendency, for example, to restrict monitoring to programmatic outputs and not to sick children who receive care from health care units and complete treatment at home. Sick children are not followed up to identify the environmental risk factors, identify other vulnerable children and target support accordingly. This constitutes an inconsistency of policy as well. While, interventions target the individuals, it is surprising that the monitoring and evaluation targets the population and entire communities whose risk factors are not adequately addressed. This problem is aggravated by lack of structures, mechanisms, and poor linkages between health care units and community resource persons (where they exist).

While the policy indicates use of *community participation* as a *means* to effective *community action* for health, policy does not provide guidelines indicating activities communities are to undertake as well as the prerequisite knowledge and skills needed. It

is assumed that (beyond taking their children to health units for treatment), communities are interested to participate and that they have the needed competencies to handle their responsibilities in health prevention and promotion. Chapter 5 and 6 showed that communities and their institutions did not know what do about disease control and prevention. Many people felt powerless to manage their social and physical environment for disease control. Policy needs to spell out empowerment as an important activity for fostering of effective community participation in disease control. There is also need to develop guidelines on community empowerment and participation.

Another example of policy omission is failure to require the *disaggregation* of morbidity, mortality and disability data along social economic indicators of the sick. Without this disaggregation, vulnerable poor children requiring more attention and resources cannot be easily identified and targeted leading to an equality-equity of care. Again, despite that many children die from common conditions at home, policy does not concretely provide for the collection of vital data on deaths and perceived causes at the community level. Health care planning based on health unit information may not be adequate for planning, budgeting, and subsequent control of disease and their consequences. This is because most children die outside the health units and the factors that lead to death for children who die at home may be different from those of children who die in health care units.

The disease control policy also does not concretely come up with provision for the following: a) provisions to influence the distribution of the private health care units to underserved areas despite that the sector is the most preferred in the management of uncomplicated conditions; b) organize the private sector into networks with adequate social capital to influence policy for improved service delivery and outcomes; c) create structures to empower health workers to influence policy; d) develop coordinating structures for disease control and prevention at the grassroots; e) develop linkages between health care units and community resource persons indicating joint activities that the two systems need to work on (beyond supervision); f) create neutral non-partisan structures for grievance handling in situation of abuse or client dissatisfaction with services. Health unit committees tend to identify more with the health unit management

and are therefore less likely to take a neutral stance where the health workers have abused a patient or child carer.

This study further observes that with the current human resource situation in the health sector (Chapters 1, 3, 6), it may take along time for health workers to engage in health promotion/community empowerment activities for sustainable health development. If health workers cannot adequately offer health education in health units and monitor sick children at home, they may not easily and effectively engage in community mobilisation, empowerment and social capital development. Use of volunteers is currently beset with an inability of local governments to provide them with incentives to acquire the prerequisite motivations for delivery of sustainable services. This calls for creation of other structures or mandating other professionals such as community development social workers to undertake community mobilisation, conscious raising about common diseases, social capital development and empowerment. One major limitation of the current disease control policy is that it is concerned more with case management. Policy is not concretely committed to provide health education using the *preventive approach* a more proactive method of targeting people who do not yet have a health condition.

This study has also shown that while the public holds different values propelling health care seeking with implications on service delivery organization, some values are addressed by policy while others are not. For example, policy is concerned with the availability and an *equitable* distribution of public health units but not the private units. There are no provisions for mapping of health units in each community and making them accountable for the health of the people. Problematic values like *flexibility* is not at all addressed by policy.

This study also found that the disease control policy does not provide for a comprehensive list of guidelines essential to guide implementers' activities at the grassroots. The guidelines listed in the policy were those most likely to be used by the health workers and not other partners. This excludes the participation of significant others from disease control programs. For example, while policy indicates that it will be
implemented by other government departments, NGOs, industries, community leaders and households, it does not provide guidelines for each of these categories. Some of the guidelines that this study thought would be essential were: guidelines for planning political or interactional activities for disease control; guidelines on community participation and health promotion; guidelines for the participation of other sectors in disease control and prevention. Other important tools would be on social capital development for disease control and prevention; identification of the most vulnerable in disease control and prevention efforts; and collection of vital data in the community for disease control and prevention.

The disease control policy indirectly addresses issues of policy enforcement by stating, for example, that the program will be owned by the communities and yet it does not put in place a structure and resources to continuously stimulate, encourage and support the community to do so. The existence of weak enforcement would call for community organization, community empowerment, and social capital development such that the communities and their institutions become *self driving* to do things and achieve the health goals with or without technical support. Incidentally, policy does not adequately address community organization for social capital development and empowerment. This study argues, for example, that many of the problems could be ironed out with development of *social capital and empowerment*. Enforcement of regulations from the top-down will continue to be a problem because of resource constraints, the volatile nature of the private sector and rampant corruption.

## 7.4.3 Silence and shaky address of certain issues

This study also found that policy was silent on certain important issues. Since silence does not lead to social action for problem amerioration, then it is regarded a policy inadequacy. Important issues that policy does not confidently and concretely address relate to funding at institutional and household levels. Policy is silent on the support to give the private profit sector. It is silent or non-committal on how to assist the poor access services in both the public and private sectors in situation of lack of essential drugs and money. The policy authors do not succinctly indicate the expected amounts of funds from the donors and local government for disease control programs. This uncertainty in funding threatens planning at the local government levels and health units. Limited and unsure funding was reported by all policy implementers to be the main source of policy implementation failures with detrimental outcomes.

Funding of the disease control activities is done and presented from the perspective of the formal institutions. This is despite that households spend out of pocket to meet medical bills. Households spend some money even in situations where government proclaims to provide free universal services. In all the preceding chapters and especially Chapters 5 and 6, it was shown that most households especially in the rural agricultural areas find difficulty raising money for treatment all the time when children fall sick. This difficulty delays treatment seeking with disastrous consequences. This is largely because, funding policy for disease control and prevention is built on two wrong assumptions. Firstly, is the assumption that illness is a personal trouble and that individuals can mobilize the necessary resources to seek care from any source. Secondly, is the assumption that government provides free services; and that rational people should use the freely provided government health services when they do not have money.

These assumptions are both not totally right. First of all not all communities have equitable access to government health units. Secondly, not all government units are functional to the satisfaction of the service beneficiaries all the time. Even where services are truly free, still people spend money on transport to reach far off public units. People and especially women delay to seek health care because of lack of transport and money to buy drugs. Policy is silent on how to economically empower women to easily *actualize their decisions and choices*. It is silent on how to help communities develop social capital for purposes of generating funds for medical treatment and prevention.

7.4.4 Non-*adaptation of* disease control needs to generic national health policy provisions While Chapter 9 indicates that disease control policies are connected, given birth to or guided by the national health policy and strategic plan, the disease control policy does not adequately tailor some of the NHP provisions to mitigate its own problems. For example, disease control policy does not adequately address the threats to policy implementation especially as they relate to resources, service organization, and research. For example, while diseases have peaks or seasons as well as epidemics, calling for increased resources and different service organization, the policy does not indicate how to go about these. It is also silent on how to manage resources in situations where scarce resources are competed for by other pervasive diseases and injuries.

Another example is drawn from the decentralisation policy. The decentralization policy requires that local governments plan for their local level needs in all sectors. The authors of the disease control policy tend to assume that local governments will subserviently address the important disease control needs and values as expected by central government. This study found that while the *technical* aspects for disease control were planned for by the health units, the *interactional* aspects that needed to accompany or proceed each technical program were not adequately planned for, implemented, and monitored. Local level stakeholders have limited capabilities to identify disease control and community organizing needs.

#### 7.4.5 Policy and the context

Somehow policy ignores the context in which it is to be implemented. For example, the rampant existence of self treatment distorts health workers' adherence to the treatment policy with a tendency for them to go straight to use the second line drug. Policy does not provide provisions for such situation leaving it to the discretion of the health workers to determine what to do thus subverting the policy principles. Because of the poverty of the people, the private sector stocks cheap non-recommended drugs which slow recovery. The liberation and privatization policies are practiced with inadequate support and support, and enforcement of existing regulations.

The poverty issues are aggravated by the low stocks of social capital and especially limited bonding between households. This means that households are not networking to form mutual support groups to aid each other in case one household cannot raise adequate funds for medical care. The negative attitudes and norms that treatment of the sick is a concern of the affected family are not adequately addressed by the policy. Policy does not adequately address social and economic vulnerability to diseases. Political reasons and especially a desire to appease the electorate leads to a saturation of services in the community covering even those people who could otherwise afford to pay for services.

#### 7.5 Implementation and policy adequacy

Implementation is also failing in all health care systems at all levels of social organization. Many times, implementation is half done. For example, a government health worker may prescribe medicine but does not give a full course of prescribed medicine because of non-availability. The health worker may give medicine but does not follow up the sick child to ensure compliance and drug performance. The worker may give treatment but not prevention information. The worker may give prevention information but the information may be given late when one is already sick. Such a person cannot use such information for primary prevention since the illness will have occurred. Some health workers treat with un-recommended ineffective drugs. The private practitioners concentrate their efforts in providing curative services and not preventive and promotive services despite that they live in proximity with the people they serve. Local governments are not adequately planning for disease control as expected assuming that this is the role of health units. Some actors carry out technical and political tasks for which they have no capacity. All of these compound to create detrimental effects on health outcomes. Each health care system has its own challenges and threats that affect intervention outcomes. Likewise each intervention strategy has its own threats making it difficult to achieve the desired outcomes and the attainment of the health related MDGS.

Implementation is failing because of four major factors:- a) deficient implementation theory used; b) deficient enforcements; c) deficient policy; and d) deficient resources. Chapters 5 and 6 indicate that implementation is assumed to be done by just the bureaucrats and excluding the households and individuals. In the policy implementation theory, emphasis is put on those factors that facilitate or constrain technocrats from performing. Because the local level actors who also experience the problems are relegated in the implementation theory, the factors that impinge on their practices are less likely to be addressed in policy and practice. For example, this study found that policy implementation may fail at the household level when people do not seek out health care and utilize the services. Other important factors identified for successful policy implementation at the household level were:- timing of intervention activities, commitment and willingness, knowledge of health care systems and ability to match a health condition to the functions of the health care system, adherence to technical advice, money availability, and social capital (especially bonding) and empowerment. Factors impeding household preventive activities were:- consciousness about the disease and vulnerability, ability to afford a preventive technology, consistent use of the technology, *compatibility* with technology. Incidentally policy does not indicate how these are to be managed for effective policy implementation by households.

The factors emphasized for successful policy implementation by institutions and technocrats are also not fully addressed. For example, one precondition given by Ryan (1996) for successful policy implementation is the provision of adequate resources to implementers. These are not adequate in all health care systems, both public and private. This study found that public health care units in Uganda received less than 30% of the budgeted funds in a year and these were reportedly decreasing to cater for the newly constructed units. Limited funding affects drug availability, staffing levels, health worker remuneration, motivation and availability to serve the sick. The situation of low funds is compounded by the financial allocation policy which allocates the same amounts of money to units of similar function leaving no room for a unit to meet its unique needs for disease control. The financial allocation policy favours infrastructural development such as health unit construction and purchase of medicines in government health units to the exclusion of health promotion activities and health education for behavioural and attitudinal change.

Enforcement of the existing regulations and policy provisions in both the government and private health care system is also limited. This is partly because of limited funding, unclear ways of relating (for example with the private sector) and most importantly because of organizational limitations. Enforcement from the top-down may not be sustainable because of limited funds and corruption. This study urges that health workers need to be organised in their groups, help them develop networks and norms; support and influence each other for improved service delivery and outcomes.

The strategies emphasized in the treatment and prevention policy have also got very many threats making it difficult to reduce morbidity and mortality. For example, the treatment strategy is beset with problems like the existence of non-efficacious drugs both in the public and private sectors. Poor quality drugs on the open market very much threaten the success of home treatment and medical care in the private health care sector. Health education for prevention is directed at the individual when already sick and not to entire communities. Health education messages tend to be given to women who do not control the resources for investment in health prevention. Policy does not indicate ways of reaching out the men to make them prioritize disease prevention in their plans and budgets. Community empowerment enabling communities to do their own environmental risk assessment and take actions to avert illnesses and deaths is not fully promoted. Policy documents do not indicate how often to revise the policy and how to capture implementation experiences for purposes of revising and making the policy more appropriate to the *persons-environment interactions and the context*.

The *top-down* perspective currently used in disease control policy making is also partly accountable for the inadequacies in policy. Because policy constitutes a directive from a boss or a principle to an agent, the top-down perspective assumes that once a policy is made it will be automatically executed by the street-level bureaucrats in decentralized environments. Subsequently, the disease control policy programs are not accompanied by adequate enforcement strategies to make sure that local governments (as policy implementation agents) plan for disease control, prevention and promotion. It is clear from this study that enforcement would create a *null effect* unless local government were guided on the disease control issues to address and how to address them. Chapter 6 indicated that the preventive and health promotive activities are not a priority to central government funding being left to be funded with non-reliable, non-existent local government revenue.

## CHAPTER EIGHT

# TOWARDS DETERMINING AN ADEQUATE POLICY FOR DISEASE CONTROL AND ACHIEVEMENT OF THE MILLENNIUM HEALTH GOALS IN SUB-SAHARAN AFRICA: A FRAMEWORK

This Chapter wraps up all foregoing chapters drawing conclusions relating to the research question in Chapter 1; and presenting a framework to guide the design and re-design of an adequate policy for disease control. As indicated in Chapter 1, the study was not concerned with all types of diseases but with the most common conditions prevalent in many parts of sub-Saharan Africa which are making it difficult for the continent to achieve the millennium health goals. Experiences relating to malaria were to be used to extrapolate to other common conditions. The discussions that follow take that stance. The framework presented in this concluding chapter represents the recommendations of the study. This framework considers the elements that need to be addressed when designing or reviewing a disease control policy.

#### 8.1 Conclusions

This section summarises the key conclusions from the study organised around the specific objectives and research questions (Chapter 1).

1. The existing disease control policy does not have the capacity to control the most prevalent diseases in SSA because of the following reasons:-

- (a) The policy is based on a limited scope of problem construction the bio-medical model; done by the technical people using a top-down approach. The problem construction fails to address the disease risk factors as constructed by the households and grass-root health workers.
- (b) The policy does not adequately address implementation *challenges and threats* pertaining to curative and preventive strategies as experienced by the households, public and private health care systems.

- (c) The policy does not address existing inequities in the distribution of different types of health care units and particularly the private for profit and other resources in accordance with the social and geographical burden of the disease.
- (d) The policy does not indicate strategies to identify the poor and most vulnerable to the common diseases leading to saturation of services and scarce resources. Nor does the policy assure the poor and most vulnerable access to curative and preventive technologies in the event of scarcity such as drug stock outs in public units.
- (e) The policy does not adequately provide for mechanisms allowing implementation experiences including best practices and problems of all actors to be fed back into policy.
- (f) The policy does not provide for the organization of communities and their institutions into social networks to effectively manage the pervasive challenges and threats to illness/disease control in the context of rampant poverty, social disorganization and policy inadequacies. This particular limitation has left the communities and institutional functionaries apathetic, powerless, and dependent on limited resources and not performing satisfactorily for the achievement of the desired social goals.
- (g) The policy does not address and support health care systems in accordance with people's preferences or choices of health care systems, people's health care seeking values, health unit availability and capacities to manage uncomplicated and severe conditions of the common diseases. The policy does not concretely legitimize and support the private for profit health care sector which is most available in most communities and manages the bulk of uncomplicated cases of the common diseases.
- (h) The policy does not indicate activities, service types, or processes over which different health care systems are to integrate.
- (i) Despite that the policy is formulated using a top-bottom approach, with distinct division of labour between the central and local government for policy making and implementation respectively, there are no mechanisms to ensure that the local governments enforce the disease control policy. Nor does the disease control

policy require local governments to be accountable for any loss of life due to preventable conditions.

(j) Although the policy is meant to contribute to poverty alleviation efforts by helping people to be healthy to engage in production, it fails to come up with principles of helping the poorest population groups to access health care whenever there are institutional failures (such as drug stock outs in government run units) or when households undergo economic recesses.

2. While opportunities exist at the local level for local government institutions to plan and implement disease control programs using existing resources, minimal activities take place at the local level. Other than the health units which undertake curative and limited preventive tasks, the *interactional tasks* as well as activities relating to the management of the physical and social environments are not adequately prioritized in local level plans and budgets. Contrary to the expectations of PHC, all actors at the grassroots are not fully contributing to disease control, prevention and health promotion according to their comparative advantage. This leaves the health problems largely to the health sector, the afflicted individuals, and their families. This is happening despite that health promotion is a function of many actors beyond the health sector.

3. Rural agricultural households are the most vulnerable to common conditions that cause illnesses, death and disability in children. Despite this vulnerability, policy does not prioritise them in policy in terms of resource allocation. Policy does not also prioritise geographical locations, and peak times when illness/disease incidences are highest. In resource constrained contexts, this leads to *saturation of services* and minimal impacts on health improvement.

4. Morbidity and mortality due to common conditions continues to be high in SSA because of non-implementation, low implementation of the existing disease control policy.

5. Implementation is failing partly because of the top-down approach which is leading to selective risk factors addressed, assumptions of provision of satisfactory resources by the central government and perfect implementation.

7. Balancing environmental and economic interests for disease control needs to take a centre stage in the discourse of human rights to health.

8. This study showed that common health problems do not only contribute to poverty but are themselves sustained by limited resources at all levels of social organization making them developmental diseases. It is in view this that it is suggested that common conditions need to be mainstreamed in all developmental programs and project in countries of SSA.

#### 8.2 Framework for determining an adequate policy

The thesis of this study was that many SSA countries were unable to reduce child morbidity and mortality and meet the health related MDGs because of inadequate policy. Evidence from the analysis of the existing disease control policy and implementation experiences has proven this argument. It is in respect of this finding that this study proposes a framework for designing an adequate policy and reformulation.

The framework provides a list of ideas or suggestions to consider when designing or redesigning a disease control policy. It also indicates the processes for the re-formulation of policy as well as the theory to guide assessment of the adequacy of the policy. It is noted that some elements of this framework could best be handled by the national health policy. These are identified and referred to as "influencing national health policy" (INHP). It is the argument of this study that issues of the generic nature which may adversely affect the performance of a program if not addressed by the national health policy, need to be identified and indicated as INHP in the disease control policy. Later these need to be developed further and presented to the committees concerned with national health policy development.

### 8.2.1 Content: elements for a new policy

*Problem construction*: address the person-environment causes of the problem. This needs to be done by a multi-disciplinary team.

*Interventions:* to be determined by the causes of the problem in the person-environment interactions. Most importantly, interventions need to address the following: i) case management, ii) prevention of disease transmission to individuals in homes, communities and in health units, iii) social capital development and empowerments of households, communities, iv) empowerment and social capital development among health workers in public and private units; v) capacity building of all actors in key interventions as well as political activities for health policy development; and vii) participation of other sectors and disciplines.

*Targeting* services to: a) the individual and population health; b) morbidity, mortality and disability; c) curative, preventive and promotive services.

## Case management

- Prescriptions for mild and severe conditions;
- Prescriptions for special population groups like pregnant women; very young children.
- Management of clinical challenging situations like interferences of selftreatment/home treatment.
- Procedures for identifying the severely sick in out patient departments of health units
- How to avail constant supplies of inputs (that is drugs, laboratory services, blood and other supplies) for the management of mild and severe conditions in public and private health care sectors.
- Measures to ensure the availability of the right quality of drugs in the private health care sector.
- Social capital development in communities and mutual support to ensure quick transportation of the severely sick to higher levels of care.
- Address all the challenges and threats to effective case management in the public and private health care sectors for mild and severe conditions

- Provide arrangements for household reporting and transportation of the severely sick from the community to health units
- Management of resources during peaks season of the problem and epidemics
- Management of vulnerable people in difficult situation particularly when resources are constrained as when there are drug stocks outs of free drugs in a unit.

## Prevention and promotion

- Measures for personal protection, vector control, and environmental management
- Health education clinic and community targeting both women and men
- Conscious raising of all stakeholders about the socio-economic effects of the common diseases on individual, household, community and society.
- Social capital development and empowerment of all health care systems
- Organization and empowerment of private health care sector actors to be able to influence health policy development

## Service delivery structures

Service delivery structures and actors in disease control and health promotion be determined by the assessments made regarding risk factors in the person-environment interactions.

- Encourage formation of community based organisations (CBOs) for health promotion and disease prevention
- Indicate community level structures to be responsible for health promotion, collection and management of vital morbidity and mortality data associated with common conditions at the community level;
- Indicate structures to be used in reporting bad medicine, performance of drugs in general at community, and client /patient grievances.
- Develop surveillance centres for common conditions and responsibilities of health units in entire country

- Develop research desks in regional and district hospitals to identify problem areas calling for research; link with research institutions to identify new innovations and share new knowledge with lower level units.
- Create death review boards to review deaths from common conditions and factors responsible for the deaths in the community and health units.
- Develop national advisory committee structures at the regional levels to receive the district death review reports and advise district and Ministry of Health.
- Develop linkages between health units and community health resource persons to help monitor sick persons who complete treatment at home and the recently discharged patients and clients who get disabled as a result of a disease.

# Capacity building

- Regular inventory taking and mapping of human resources with appropriate knowledge and skills in the management of the most common diseases
- Regular identification of the training needs of health workers and other persons engaged in disease control and health promotion.
- To equip knowledge, skills and attitudes to health workers and managers as appropriate:
- Procurement, distribution, management, and accountability for drugs of common conditions
- empowerment of national level health sector actors to influence policy and increased access to national budget
- training local government planners to identify disease control needs; plan, and allocate resources accordingly
- Regular in-service training of public and private practitioners in the management of common conditions
- Health education at community level targeting both women, men and mother surrogates
- Inclusion of the management of common conditions in medical colleges.

### Monitoring, evaluation and research

- Indicate the data to be collected from patients/clients. There is need to disaggregate morbidity and mortality data by socio-economic characteristics of the patients/clients in clinical settings and during community level studies on common conditions.
- Generic processes such as monitoring of individual patients and entire disease control programs need to be undertaken by formal health care systems.
- There is need to regularly monitor the following:
  - Local government control needs, plans, and implementation
  - Death review board proceedings, actions taken and outcomes
  - Service barriers
  - Health care seeking behaviours and treatment
  - Client/patient satisfaction with services
  - Best practices especially how health care systems identify and deal with the poor and most vulnerable during health care seeking
- There is need to undertake studies on:
  - Cost effectiveness of preventive measures against the transmission of common conditions
  - Cost effectiveness of existing drugs for management of common conditions
  - Effectiveness of indigenous vector control methods
  - Environmental risk factors for common conditions in different districts /regions of the country
  - Development of methods and tools to identify the persons and geographical places most vulnerable to different common conditions
  - Development and refinement of disease control and preventive technologies sensitive to the living conditions of the poor.
  - Entomological studies in regional and local governments
  - Funding status, resource use, and challenges by different health care systems

 Make provisions for implementers to contribute to the national research agenda and undertake studies in local areas to guide local level planning.

## Funding and resource allocation:

- Funding needs of different actors
- Sources of funding
- Forms of support to different actors
- Forms of resource mobilizations
- Modalities of distribution of free drugs
- Whether services are to be provide free of charge. It is best if common conditions are treated free of charge in public and private health care sectors.
- *Measures to ensure constant supplies* of the right quantity and quality of inputs for case management in the public and private health cares sectors.
- Allocate proportionate resources (both financial and human) to management of the disease for: a) the individual and population health; b) curative, preventive and promotive services; and c) biological, geographical, socio-economic and seasonal vulnerability; d) mild and severe conditions; e) public and private managing the different degrees of the disease.

# Policy making and planning

- Problem construction to be done and reviewed by health workers together with persons from other disciplines especially the social sciences. This is purposed at embracing all causal factors of diseases and coming up with a multi-sectoral, multi-disciplinary courses of action for case management and prevention.
- Integration issues:-
- Integration of political and technical goals and tasks in plans and budgets at all levels for curative and preventive strategies
- Integration of the plans of a health sub-district with the member health units for disease control and prevention
- Integration of curative and preventive strategies in the public and private health care units (this should be so when the private for profit health care sector is

legitimized to take charge of all uncomplicated cases of common illnesses/diseases or contracted to do by government)

- Identify shared activities between high level units and low level units and develop guidelines on how they are to collaborate
- Identify shared activities between health units and community level health resources and develop relevant guidelines indicating how they are to collaborate.
- Provide for mechanisms or ways of how implementation experiences are to feed into the policy making exercises on a regular basis. Consider households as policy implementers and address those factors that inhibit successful service utilization and engagement in preventive and promotive activities. Indicate activities, responsibilities as well as resources.
- Identify ways of obtaining resources and especially funding for all actors engaged in disease control and prevention including the poor households.
- Develop guidelines for all activities
- Operationalise /tailor relevant policy provisions in other broad policies like the National Health Policy and decentralization policy, national environment policy and gender.
- Exhaustively list all guidelines required to guide the activities of all stakeholders, and committees indicating their responsibilities in case management and prevention and health promotion, as well as their linkages.

## Influencing national health policy (INHP)

The elements under this section comprises of provisions which need to be identified by the designers of the specific disease control policy for consideration in the national health policy (NHP) and national health strategic plan.

- Influence the NHP makers to put in place incentives to attract private for profit enterprises to underserved areas.
- Improvement /re-deployment of staff during illness/disease peaks and epidemics
- Management of referrals particularly the sharing of information on patients between health care units – public and public, public and private; private and

private, and high and low level units for purposes of easing prompt treatment and reducing costs of repeated clinical investigations.

- Influence equitable distribution of health units (public and private)
- Contracting out or subsidising mechanisms of the private health sector including the private for profit to manage common conditions
- Separate the resources of competing conditions and injury management programs from the resources for the management of common conditions particularly in outpatient departments of health units.
- Influencing allocation of funds to the different sub-programs of the disease control program particularly health education which is usually neglected during resource allocation.
- Integrating common conditions in developmental activities of all sectors including NGOs.
- Influence decision making on controversial, paradoxical issues such as the unresolved discourse on environmental/economic/health disease control clashes that are likely to perpetuate the high prevalence of common health conditions if left unhandled.
- Influence government to legitimize the natural division of labour in the management of common conditions between public and private. Let the private sector which normally manages the uncomplicated conditions be mandated to specialize and be supported with necessary resources including finance, skills development to manage those conditions better. A contractual arrangement and use of vouchers by service users could help in operationalizing this. Likewise, let government units concentrate in the management of severe conditions for which they already have comparative advantage.
- Institute a rewarding system for the best performing health workers, health units, local governments in reducing mortality and improving patient /client satisfaction.
- Require and support regions, districts and district hospitals to initiate research projects in collaboration with research institutions

- Develop research desks in regions, district hospitals to study common health conditions and proactively use new innovations in medicine, health social science and other disciplines like ICT.
- Influence the provision of free services in public and private for common conditions and capitalization of the latter.
- How to obtain funding at all levels of care in public and private to enhance case management

# Important values for the formulation of an adequate policy

If SSA countries are to achieve a reduction in child morbidity and mortality they also need to take stock of the values that guide decisions and choices during household service utilization and address them taking caution about the controversial ones.

- the designed policies needs to assure a sick person the same quantity and quality of care at all times in different health care units (both public and private) of the same function;
- the policy and programs need to target the socio-economically and most vulnerable to the disease.
- policy needs to be guided by the generic international human *rights to the attainment of the highest standard of health (Chapter 3).*
- Availability and access to effective medicines in all health care units public and private at an affordable cost as well as functional diagnostic equipment and other important supplies are important universal values.
- policy needs to be guided by very specific values that guide households in health care seeking. Some of these are discernible from household surveys because they are specific to the cultural settings, the economic growth of the country and organization of social services in the country.
- Identify inputs where individuals and households spend a lot of money from their pockets and subsidize or provide free services in the public and private sectors.

• The poor and most vulnerable such as women, the aged and disabled need to be positively discriminated during severe resource constraints such as drug stock outs in public units

*Enforcement of policy: Assuring accountability by actors (national government and local government)* 

- Instilling appropriate values, ethical codes, and skills for the distribution, management and accountability of drugs and other resources
- Regular undertaking of consumer satisfaction studies at exit points of health units
- Requirement for suggestion boxes in all health units; processing and reacting to those suggestions
- Creation of a grievance handling structure outside the health unit management committees
- Legal service support to abused clients in units
- Creations of consumer association and their linkage with professional associations
- Rewarding or punishing local government with high death rates
- Adequate funding of the health care sector and timely release of funds to implementers

8.2.2 Processes for re-designing an adequate policy

This section suggests the tasks a policy maker, a planner and an academician may undertake to assess policy adequacy and fill the gaps or correct existing inconsistencies. The suggestion below adopts a combinations of both the bottom-up and top-down approaches.

1. Do a literature review of scholarly work of health care system challenges and threats to disease control, prevention and health promotion

- 2. Undertake phenomenological studies involving all health care systems and particularly the households, health workers and other potential actors in other social service sectors and their interactions.
- 3. Distill the disease control needs and values in health care seeking and service utilisation
- 4. Assess the organizational capacities of the actors to undertake disease control, prevention and promotion
- 5. Determine the extent the existing disease control policy addresses existing needs of health care service beneficiaries or potential beneficiaries, capacity limitations, and general challenges and threats to existing curative, preventive and promotive intervention strategies undertaken by public and private health care systems.
- 6. Using the findings, fill in the gaps and correct the inconsistencies.
- 7. Develop a mechanism of continuously identifying implementation problems and triggers that call for policy review and re-formulation.

### 8.2.3 Concepts to guide the design of an adequate disease control policy

The following concepts of community organization implementation theory are useful in guiding the analysis of policy adequacy: a) capacity, b) social organization of actors and their relationships in undertaking their functions; c) resource availability – distribution and redistribution, d) power distribution and redistribution; e) problem construction, f) implementation processes, and g) values guiding health care seeking for common conditions.

## 8.3 Contributions to the implementation theory

Although the implementation theory is fragmented, it was useful in analyzing policy adequacy. This study expounds more on two of the implementation concepts namely *commitment* and *integration* while it adds two more variables to it. The added concepts or variables are *service utilization* and *availability* of implementers. The concept of *capacity* and *organizational capacity* were also found useful in analyzing policy. The two concepts may be very useful in guiding policy formulation and re-formulation.

*Commitment* to policy implementation can be enhanced by the extent the problem effects are equally understood and shared by the implementers as they understood by the policy makers. This is particularly true where the problem consequences equally affect the achievement of (a result-oriented; client-centred) organization in achieving its goals. Here employees (although of another social service sector or project) will be forced to mainstream control of the disease, for the sake of achieving their immediate goals. This implies, therefore, if other social service sectors and projects are to mainstream disease control in their programs as suggested under PHC, there is need to develop arguments relating the disease to their very goals.

Chapter 3 indicated that policy adequacy is partly determined by the extent social service structures are *integrated*. This study found that integration can take place in several ways including: policy/plans; functions of service delivery structures, information, procedures and processes including supervision, technical and interactional tasks. Again, integration is a relevant concept of community or institutional organization which is important for implementation success.

The *availability* of implementers at households and other levels of health care matter if the services are to promptly sought and obtained. The opposite is true except where there has been *redistribution of functions, power and resources* to enable other people to undertake the activities which are normally undertaken by the absent actor. It was noted that this was a problem in families. When mothers or fathers were out of home, the children usually delayed to get effective health care. This calls for empowerment of all actors with skills in the management of sickness. Skills development is not adequate but family members need to be trained to try out gender roles (of another person) associated with illness management even when the owner of the role is present. This is an aspect of family/community organization for disease control at family level.

This study also found that *service utilization* is an equally important concept worth including in the implementation theory. Policy implementation and attainment of the desired social goals may adversely be affected by low service utilization, poor attitudes

and behaviours such as poor adherence to health workers' instructions. This means that service beneficiaries need to be perceived as partners in policy implementation and provided with information on the policy provisions and their responsibilities on a regular basis and let them input in the process of policy reformulation. This can only be possible if the Ministries of Health are willing to combine their *top-down approach* to policy making and planning with *the bottom-up approach*. This calls for the creation of relevant structures to allow the interaction and feed back between the communities and formal institutions. It also calls for an arrangement to get the disease control policy documents translated in local languages for easy understanding, interpretation and application by the local people.

It is apparent that poor household, community or institutional organization and their interrelationships may be a critical factor sustaining the high prevalence of common conditions with resultant high morbidity and mortality. Thus, in addition to improving disease control policy, there is need to improve household, community and institutional organization for the reduction of morbidity and mortality associated with the preventable common conditions. Limited capacities of actors call for *redistribution* of *functions*, *power and resources* for the attainment of the desired social goals.

#### 8.4 Implications for Social Work Practice

Social work has a potential to contribute directly to policy design for disease control and implementation. Using a theory like the Life Model Theory, social work can ably identify risk factors within the person-environment interactions. This study demonstrates this ability.

Furthermore, through its community development and community organization subdisciplines social work can ably participate in organizing communities and health workers in the private for profit health care sector to influence policy for better health outcomes. The study argues that, however much society wants health workers in SSA to engage in health promotion and also political activities to influence policy this may not be possible in the nearest future because of the staff shortages in the health sector, the way they are trained, and the way health service agencies are organized. Health workers may not easily leave the static units to go to communities to organize them for social capital development or empowerment. Secondly, engaging health workers in health promotion requires more training in community level issues which may take long to bear fruit. This is where social work become handy in filling this gap.

Nonetheless, engagement of social workers in community organizing activities for community empowerment and conscietisation purposes will also require improving the social work curriculum at university level to equip students with community organization, empowerment, negotiation, advocacy, lobbying skills for use with social groups in communities. This is necessary because in the past social work training effort has been put to producing persons able stimulate community development and not to organize communities for political activities purposed at *redistributing functions, power and resources*.

Another important area where social work can play a big role is behavioral and attitudinal change for health prevention and promotion. This is an important service that social work departments particularly the community development departments may give other departmental programs in local governments. Unfortunately, this has not been done due to powerlessness, power struggles between disciplines in local government departments, and under-funding of the community development departments - particularly the underfunding of soft ware dimensions of social programs. Subsequently, involvement in health promotion activities would call for the development of relevant tools and more training of social workers in methods and techniques of behavioural and attitudinal change for disease control and development.

#### 8.5 Recommendations for further research

This study recommends that the framework be tested out on other common health problems to establish whether a policy/program using this recipe produces the desired outcomes compared to one that does not follow this prescription. This could be an experimental design comparing one two or more social service programs. Where no policy has all the elements of the framework, selective aspects of them, like social capital could be followed up and outcomes compared.

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### APPENDIX

Studied district	Sub county name	Population*	Total number	Parish names	Number of	Number of
			of parishes (existing)	(studied)	villages studied	households studied
MUKONO	Ntenjeru	55,443	9	Bugoye	14	169
				Bunakitta		
				Mpatta		
				Mpunge		
				Terere		
				Nsanja		
	Seeta Namuganga	32,937	7	Kitale	9	104
				Kituula		
				Namuganga		
	Lugazi Town	27,979	5	Kabowa Ward		
	Council			Nakazadde Ward		
				Namengo Ward	7	86
MPIGI	Kabulasoke	42,446	9	Kakubansiri	7	72
				Kalwanga		
				Lugaaga		
				Matongo		
	Nkozi	28,857	8	Bukunge	5	52
				Buseese		
				Ggolo		
	Mpigi Town	35,663**	11	Bumozi	6	60
	Council			Lwanga		
				Ward A		
				Ward B		
Total	6 sub counties	197,934	49 parishes	24 Parishes	48 Villages (LC1s)	543 Households

### Table A 1: Number of studied households in each sampled village, parish, sub county and district

Source: Uganda Bureau of Statistics (2002). 2002 Uganda Population and Housing Census.
 \*\*Source: Mpigi Town Council Three Year Development Plan 2006/2007-2008/09 This figure comprises of the population
 of the merged Mutuba 1 and therefore different from that of the 2002 Census report.

DISTRICT	SUB COUNTY	HOSPITAL	HEALTH	HEALTH	HEALTH CENTRE 2
Distruct		moornine	11111111111		
			CENTRE 4	CENTRE 3	
MUKONO	Ntonioma		Vaiia (Call)*		Maura ao (Coast)*
MUKONO	Menjeru		Kojja (GOU)*		Mpunge (Govi)
	Seeta Namuganga		Naggalama**	Namuganga	Kasawo (Govt)*
				(Govt)*	
			Scoul* (Privata)		
			Scour (I IIvate)		
	Lugazi Town Council	Kawolo Hospital			Lugazi Mission (NGO)
		(Govt)*			
		(0010)			
MDICI	K-hula-lu		M- 11**	Vitanaa	Dulas da
MPIGI	Kabulasoke		Maddu	кнатра	bulwadda
					Kisozi
	Nkozi	Nkozi Hospital		Ggolo*	Nabyewanga
		(NGO)*			
	Mpigi Town Council		Mpigi (Covt)*		Mpigi Police (Covt)
	mpigi rown Council		wipigi (Govi)		wipigr i olice (Govi)
					DDHS Clinic (Govt)

 Table A 2: Health Units studied in the sampled sub counties of Mukono and Mpigi Districts

The units marked with asterisk (\*) were the ones visited and studied.

\*\* Naggalama HC 4 and Maddu HC 4 are headquarters of the health sub districts caretaking Seeta Namuganga and Kabulasoke respectively. These units are located in the neighobouring sub-counties outside the studied sub counties. These units were still visited to get an overview of the health determinants and operations in the entire health sub district.

Characteristics of the	STUDY DISTRICT								
Spouse	MUKONO	(n=359)	MPI	GI (n=184)	TOTA	L = 543			
	No.	( %)	No.	(%)	No.	(%)			
Location of households									
Sub counties									
Ntenjeru	169	47.1							
Seeta Namuganga	104	29.0			}359	66.1			
LugaziTown Council	86	24.0							
Kabulasoke			72	39.0	} 184	33.9			
Nkozi			52	28.3					
MpigiTown Council			60	32.6					
<u>Urban/rural</u>	86	24.0	60	32.6	146	26.9			
Urban	273	76.0	124	67.4	397	73.1			
Rural									
Sex of household head									
Male	320	89.1	148	80.4	468	86.2			
Female	39	10.9	36	19.6	75	13.8			
Presence of spouse									
In male headed households (n=320)	319	99.7	146	98.6	465	99.4			
In female headed households (n=39)	2	5.1	1	2.8	3	4.0			
Age of Male Head									
19-29	67	22.3	33	23.1	100	22.5			
30-49	196	65.1	84	58.7	280	63.1			
50-69	34	11.3	18	12.6	52	11.7			
70-100	4	1.3	8	5.6	12	2.7			
Education of Male Head									
No education	xi)	3.8	15	11 2	27	62			
Primary 1- P.4	25	87	13	10.4	39	93			
Primary 5- P.7	116	40.4	69	51 5	185	13.9			
Senior 1- Senior 4	321	30.3	26	19.4	113	-5.9 26.8			
Senior 5- Senior 6	521 vvi)	73	3	2.2	24	57			
Tertiary college	17	7.3	Л	2.2	24 vvii)	5.7			
University	0	0.9 2 1	4 2	1 5	10	0.Z			
Other	1	0.2	2	1.5	10	2.0			
	1	0.3	-	-	1	0.2			

### Table A 3: Characteristics of the study population

Characteristics of the	STUDY DISTRICT								
Household Head and Spouse	MUKON	IO (n=359)	MP	2IGI (n=184)	T	OTAL = 543			
-	No.	( %)	No.	(%)	No.	(%)			
Occupation of Male <u>Head</u>									
Agriculture	114	35.6	80	54 1	194	41 5			
Trade/self employed	134	/1 9	40	27.0	174	37.2			
Salaried	51	15.9	3	20	54	11 5			
Casual worker	8	2.5	9	6.1	17	3.6			
Unemployed	3	0.9	-	0.1	3	9.6			
Retired not working	1	0.9	2	14	3	0.6			
Sick not working	1	0.3	1	1.4	2	0.0			
Others	0	2.5	1	0.7	2	4.5			
Age of Female Head	0	2.5	15	0.0	21	4.5			
18 20	7	19 /	7	20.0	14	10.2			
20.40	1	26.9	1	20.0	14	19.2			
50-49	14	30.8 20.5	14	40.0	28	38.4			
50-69	15	39.5	14	40.0	29	39.7			
	2	5.3	-		2	2.7			
head									
None	8	20.5	5	13.9	13	17.3			
P1-P4	8	20.5	11	30.6	19	25.3			
P5-P7	17	43.6	16	44.4	33	44.0			
S1-S4	5	12.8	3	8.3	8	10.7			
Tertiary College	1	2.6	1	2.8	2	2.7			
Occupation of female									
<u>neau</u> A grigulturo									
Trading	xxiii)	59.0	26	72.2	49	65.3			
Salariad	13	33.3	6	16.7	19	25.3			
Salaried	1	2.6	-	-	1	1.3			
Unomployed	1	2.6	1	2.8	2	2.7			
Ciele a et event in a	1	2.6	-	-	1	1.3			
SICK not working	-	-	3	8.3	3	4.0			
Age of Spouse (years)									
16-29	174	54.4	70	47.9	244	52.4			
30-49	141	44.1	64	43.8	205	44.0			
50-69	4	1.3	11	7.5	15	3.2			
70-80	1	0.2	1	0.2	2	0.4			
Education of Spouse									
No education	24	7.6	14	9.7	38	8.2			

Characteristics of the	STUDY DISTRICT									
Household Head and Spouse	N	AUKONO (n=359)		MPIGI (n=184)		TOTAL = 543				
-	No.	( %)	No.	(%)	No.	(%)				
Primary 1- P.4	50	15.8	29	20.1	79	17.1				
Primary 5- P.7	139	43.8	70	48.6	209	45.3				
Senior 1- Senior 4	89	28.1	31	21.5	120	26.0				
Senior 5- Senior 6	6	1.9	-	-	6	1.3				
Tertiary college	8	2.5	-	-	8	1.7				
University	1	0.3	-	-	1	0.2				
Occupation of the Spouse										
Agriculture	170	53.1	115	78.2	285	61.0				
Trading	61	19.1	11	7.5	72	15.4				
Salaried	19	5.9	_	-	19	4.1				
Housewife	50	15.6	20	13.6	70	15.0				
Unemployed	18	56	-	-	18	3.9				
Retired not working	1	0.3	_	-	1	0.2				
Other	1	0.3	1	0.7	2	0.4				
Sex of Respondent										
Female	328	91.4	165	89.7	493	90.8				
Male	20	5.6	16	8.7	36	6.6				
Both	11	3.1	3	1.6	14	2.6				
Age of Respondent (years)										
17-29	174	18.6	76	41 5	250	16.2				
30-49	174	40.0	20	41.5	230	46.2				
50-69	150	43.0	02 24	44.0	40	44.0				
70-87	25	7.0	24 1	13.1	49	9.1				
TT	3	0.8	1	0.5	4	0.4				
Household size	217	60.4	102	EE 4	210	E8 7				
7 12	217	60.4	102	55.4	215	38.7				
14.22	137 E	38.2	18	42.4	215	39.6				
14-22	5	1.4	4	2.2	9	1.7				
household (0-18 years)										
1-4	226	63.0	99	53.8	325	59.9				
5-9	123	34.3	76	41.3	199	36.6				
10-15	10	2.8	9	4.9	19	3.5				
Number of under five children in home										
1-3	341	95.0	172	93.5	513	94.5				

Characteristics of the Household Head and	STUDY DISTRICT							
Spouse	MUKONO	O (n=359)	MPIGI	(n=184)	TOTAL = 543			
	No.	( %)	No.	(%)	No.	(%)		
4-8	18	5.0	12	6.5	30	5.5		
Pregnancy in family in last 12 months?								
Yes No	170 183	48.2 51.8	64 107	37.4 62.6	234 290	44.7 55.3		

### Table A 4: Type and number of people with whom semi-structured interviews were conducted in Mukono and Mpigi districts

CATEGORY OF RESPONDENTS	DISTRICT							
	MU	MUKONO (n=102)			MPIGI (n=36)			
	Ntenjeru Sub-county	Seeta Namugang a S.C.	Lugazi T.C	Kabulasoke Sub county	Nkozi Sub county	Mpigi T.C	Total	
District technical leaders (eg District health officer)		5 2			7			
Sub county officials (eg sub county chiefs, CDO, sub accountants, SCOUL manager)	4	3	3	3	2	2	17	
Community leaders (i.e parish and village)	10	6**	7	2		1	26	
Health workers (in health units including private for profit units, and health assistants)	12	6	11	5	4	1	39	
Community drug distributors (CDD) and VHT members	9	6	3	6	1	-	25	
NGO and CBO officials/ religious leaders	6	6			1	-	13	
Teachers /schools (nursery and primary schools)*	6 (3 schools)	3	1	1	-	-	11	
Total	47+5***	30	25	17	8+2***	4	138	

\* In some schools more than one teacher was interviewed. The figure does not refer to number of schools \*\* In some communities some leaders doubled as LC I and LC2 leaders. They were interviewed in their different roles but here they are accounted once. \*\*\* the added figure of '5' and '2' are for the district

Ouestion		Number of	Has any chi fevers/mal		
	Response	Households	Yes	Percent	P-value
District	Mukono	359	186	51.80%	
District	Mpigi	184	88	47.80%	0.773
	Agriculture	285	156	54.70%	0.109
	trade/self employed	72	39	54.20%	
Occupation of spouse	Salaried	19	7	36.80%	
	Housewife	70	31	44.30%	
	Others/unemployed	97	41	42.30%	
	Agriculture	243	124	51.00%	0.101
	trade/self employed	193	106	54.90%	
Occupation of HH head	Salaried	55	21	38.20%	
	Housewife	46	22	47.80%	
	Other/unemployed	6	1	16.70%	
	None	39	13	33.30%	
	Primary	275	158	57.50%	0.009
Education level of household head	Secondary	144	68	47.20%	
	Tertiary	36	14	38.90%	
	Missing <sup>51</sup>	49	21	42.90%	
	None	38	19	50.00%	0.031
	Primary	288	163	56.60%	
Education level of spouse	Secondary	126	56	44.40%	
	Tertiary	9	3	33.30%	
	Missing	82	33	40.20%	
Urban or Rural?	Rural	397	221	55.70%	
orban of Rular:	Urban	146	53	36.3%	< 0.001
Does the house have good	Yes	487	235	48.3%	
shutters?	No	56	39	69.6%	0.002
Do you close the house early	Yes	352	165	46.9%	
enough in the evening?	No	191	109	57.1%	0.023
Do you do anything to prevent	Yes	507	258	50.90%	
malaria	No	36	16	44.40%	0.455
Do you use ITN to prevent	Yes	442	228	51.60%	
malaria	No	101	46	45.50%	0.273
Do you use coils to prevent	Yes	90	47	52.20%	
malaria	No	453	227	50.10%	0.714
Do you spray house with	Yes	22	8	36.40%	
insecticide?	No	521	266	51.10%	0.177
Do you keep the environment	Yes	42	21	50.00%	

Table A5: Prevalence of uncomplicated "malaria" in the under-five children 2 weeks prior to the study by selected household characteristics and malaria prevention measures- Mukono and Mpigi Districts (bivariate analysis)

<sup>&</sup>lt;sup>51</sup> Information on education of the household head was missing in situations where the primary child carer (mothers) or mother substitutes did not know it. This is also true with the education of the spouse.

Ouestion		Number of	Has any chi fevers/mal		
	Response	Households	Yes	Percent	P-value
free of floating water?	No	501	253	50.50%	0.95
Do you keep the environment	Yes	45	26	57.80%	
free of tall grass/bush	No	498	248	49.80%	0.305
Do under-five children sleep	Yes	417	209	50.10%	
under mosquito nets?	No	126	65	51.60%	0.773
Is malaria a problem in this	Yes	481	256	53.20%	0.000
home?	No	62	225	46.80%	

# Table A 6: Prevalence of severe "malaria" in the under-five children in the last 12 months by selected household characteristics

Question	Response	Has any 5 years o severe in la mon	child < ever had malaria st 12 ths?	Bivariate Results (Unadjusted Results)			
		Yes	No	OR	95% CI	P-value	
	Mukono	129	230				
District	Mpigi	69	115	1.07	0.74 - 1.55	0.720	
	Agriculture	118	167				
Occupation of spouse	Trade/self employed	20	52	1.84	1.01 - 3.37	0.034*	
	Salaried	5	14	1.98	0.65 - 7.20	0.194	
	Housewife	22	48	1.54	0.85 - 2.80	0.126	
	Others/unemployed	33	64	1.37	0.82 - 2.28	0.199	
	Agriculture	96	147				
	trade/self employed	69	124	1.17	0.78 - 1.77	0.422	
Occupation of HH head	Salaried	12	43	2.34	1.12 - 4.96	0.014*	
	Housewife	19	27	0.93	0.47 - 1.85	0.819	
	Other/unemployed	2	4	1.31	0.18 - 14.69	1.000	
	Mother/father	174	306				
Who stays with under five child most	Grandmother	16	31	1.10	0.56 - 2.17	0.764	
of the time during the day?	Other adults	1	6	3.41	0.40 - 75.81	0.430	
	Children	7	2	0.16	0.02 - 0.87	0.015*	
	Agree	32	69				
Homapaks are always available in	Disagree	101	133	0.61	0.36 - 1.03	0.049*	
the community	Sometimes	25	56	1.03	0.54 - 1.97	0.924	
	Do not know	40	163	1.01	0.55 - 1.84	0.976	
Community drug distributors are	Agree	20	55				
doing a good job in the community	Disagree	115	163	0.52	0.28 - 0.94	0.020*	
0 · 0 · · · · · · · · · · · · · · · · ·	Sometimes	26	52	0.73	0.34 - 1.1.54	0.369	

Question	Response	Has any child < 5 years ever had severe malaria in last 12 months?		Bivariate Results (Unadjusted Results)		
		Yes	No	OR	95% CI	P-value
	Do not know	37	75	0.74	0.37-1.47	0.353
	Happens many times	161	227			
Have you ever had a situation of no money to buy medicine or take sick	Has happened only once	6	15	1.77	0.63 - 5.69	0.241
child to health unit?	Has never happened	29	95	2.32	1.43 - 3.79	<0.001*
	sick	2	8	2.84	0.55 - 27.71	0.209
	All the time	150	215			
Do health workers teach you about the need to seek treatment promptly?	Sometimes	36	80	1.55	0.97 - 2.48	0.053
	Never/don't know	12	50	2.91	1.44 - 5.98	0.001*
	All the time	170	275			
Do they teach you about the need to buy a full doze of antimalarial?	Sometimes	15	50	2.06	1.08 - 3.97	0.018*
	Never/don't know	13	20	0.95	0.44 - 2.08	0.892
	All the time	109	144			
Do health workers teach you how to administer antimalarials to children vomiting?	Sometimes	30	67	1.69	1.00 - 2.87	0.038*
	Never/don't know	59	134	1.72	1.14 - 2.60	0.007*
	No	38	99			
distributors in this community?	Yes	160	246	1.69	1.11 - 2.59	0.014*
	2-6 people (small					
Household size collapsed into just	family) 7-22 people (big	99	220			
	family)	99	125	1.76	1.23 - 2.51	0.002*
Is malaria a problem in this home?	Yes	187	294			
	No	11	51	2.95	1.44 - 6.16	0.001
Urban or rural	Rural	155	242			
	Urban	43	103	1.53	1.00 - 2.36	0.040*
Previous death experience for under	Yes	22	15			
5 in last 5 years	No	176	330	2 75	1 33 5 73	0.003*
Is difficulty to huy drugs a constraint	Yes	109	156	2.75	1.55- 5.75	0.005
in fighting malaria in this home?	No	89	189	1 91	1 30-2-82	0.001*
Do you easily treat malaria/fever within 24 hours after recognising	Yes	158	302		100 2 02	
fever?	No	40	43	0.56	0.34-0.93	0.016*
Have you ever been told about the	Yes	158	245			
govt. recommended actions to fight malaria?	No	40	100	1.61	1.06 - 2.45	0.024*
Non-completion of antimalarial	Agree	1	5	-		
dozes may result in disease	Disagree	181	290	0.32	0.01 - 2.84	0.415

Question	Response	Has any child < 5 years ever had severe malaria in last 12 months?		Bivariate Results (Unadjusted Results)			
		Yes	No	OR	95% CI	P-value	
resistance (knowledge question)	Sometimes	7	29	0.83	0.00 - 9.98	1.000	
	Do not know	9	21	0.47	0.02 - 5.42	0.655	

\*statistically significant results

			Death		Bivariate Results		ts
Question	Response	Total	Number	Percent	OR	95% CI	P- value
District	Mukono Mnigi	359 184	21 16	5.8% 8.7%	1.53	0.78 - 3.01	0.213
	agriculture	285	28	9.8%			
Occupation of spouse	trade/self employed salaried	72 19	2 1	2.8% 5.3%	3.81 1.96	0.85 - 23.74 0.26 - 40.87	0.054* 1.000
	housewife	70	2	2.9%	3.70	0.83 - 23.08	0.060
	Others/unemployed	97	4	4.1%	2.53	0.82 - 8.76	0.080
Do they teach you about the need to buy a full doze of antimalarial?	Sometimes	445 65	30	6.7 % 4.6%	1.49	0.42 - 6.34	0.280
Household size collapsed into just	Never/don't know	33	4	12.1%	0.52	0.16 - 1.89	0.280
small and big	7 22 people big family	224	25 12	7.8%	15	0.70 3.25	0.259
Is malaria a problem in this home?	no	62	3	4.8%	1.50	0.45 - 5.02	0.512
	yes	481	34	7.1%			
Urban or rural	rural	397 146	32	8.1%	2.47	0.90-7.38	0.057
Do you easily return child to	Yes	484	28	5.8%	2.93	1.21 - 6.95	0.006*
health unit for more treatment/injections?	No	59	9	15.3%			
	Private health unit	229	10	4.4%			
Proformed courses of treatment for	Home	156	13	8.3%	0.50	0.20 - 1.26	0.107
mild fevers/malaria in under fives	Public health unit	94	7	7.4%	0.57	0.19 - 1.71	0.260
	NGO health unit	25	5	20.0%	0.18	0.05 - 0.69	0.002*
	Drug shop	29	1	3.4%	1.28	0.16 - 27.68	1.000
	Other	10	1	10.0%	0.41	0.04 - 9.48	0.382
Do you have community health workers in this community	Yes	82	10	12.2%			
	No	461	27	5.9%	2.23	0.96 - 5.07	0.036 *
Do you have private clinics in your community?	Yes No	299 244	16 21	5.4% 8.6%	1.61	0.86 - 3.01	0.134
Do you use ITN to prevent malaria?	Yes	442	34	7.7%	2.72	0.82 - 9.05	0.089
Do you easily return child to	Yes	485	3	6.4%			
health unit for review?	No	58	6	10.3%	0.59	0.22 - 1.66	0.259

# Table A 7: Prevalence of deaths attributable to "malaria" in the underfive children in Mukono and Mpigi districts by selected household and health care system variables (bivariate analysis)

Headship of household	Responsible Persons in the home		DI	ISTRICT			
Administering antimalarials to	under fives					TOTAL	
		]	Mukono		Mpigi		
		No.	(%)	No.	(%)	No.	(%)
	Normally the mother	38	97.4	21	60.0	59	79.7
Female headed	Other people (e.g. grand mother)	1	2.6	14	40.0	15	20.2
	Total	39	100	35	100	74	100
	Normally the mother	297	93.1	124	84.4	421	90.3
	Normally the father	8	2.5	4	2.7	12	2.6
Male headed	Mother and father	11	3.4	7	4.8	18	3.9
	Other people	3	0.9	12	8.2	14	3.2
	Total	319	100	147	100	466	100
Taking child to health unit for	treatment						
Female headed	Normally the mother	37	94.9	19	55.9	56	76.7
	Normally the father	0	.0	2	2.9	2	2.7
	Mother and father	1	2.6	0	.0	1	1.4
	Other people	0	.0	13	38.2	13	17.8
	Total	39	100	34	100	73	100
Male headed	Normally the mother	251	79.2	97	66.0	348	75
	Normally the father	22	6.9	16	10.9	64	13.8
	Mother and father	43	13.6	21	14.3	64	13.8
	Other people	1	0.3	13	8.8	14	3.0
	Total	317	100	147	100	464	100
Deciding source of health care							
Female headed	Normally the mother	35	89.7	21	60.0	56	75.7
	Normally the father	2	5.1	0	.0	2	2.7
	Mother and father	1	2.6	0	0.0	1	1.4
	Other people	1	2.6	14	40.0	14	18.9
	Total	39	100	35	100	74	100
Male headed	Normally the mother	159	50.2	62	42.2	221	47.6
	Normally the father	51	16.1	29	19.7	80	17.2
	Mother and father	104	32.8	43	29.3	147	31.7
	Other people	3	0.9	13	8.8	16	3.4
	Total	317	100	147	100	464	100
Looking for financial resources	s to treat child						

## Table A 8: Persons undertaking the management of illness in under-five children in both the male and female headed households in Mukono and Mpigi districts

Female headed	Normally the mother	26	66.7	19	54.3	45	60.8
	Normally the father	7	17.9	4	11.4	11	14.9
	Mother and father	2	5.1	0	0.0	2	2.7
	Other people	4	10.3	12	34.3	16	21.6
	Total	39	100	35	100	74	100
Male headed	Normally the mother	24	7.5	12	8.2	36	7.7
	Normally the father	263	82.4	109	74.1	372	79.8
	Mother and father	30	9.4	12	8.2	42	9.0
	Other people	2	0.6	14	9.5	16	3.4
	Total	319	100	147	100	466	100

District / Location		'Our leaders (village and parish regularly mobilize us for malaria		'Community leaders are doing a lot to sensitise us about malaria prevention'	
	Response	(Frequency)	(%)	(Frequency)	(%)
MUKONO		(n=356)		(n=356)	
	Do not know	10	2.8	22	6.2
	Disagree	246	69.1	163	45.7
	Sometimes	22	6.2	49	13.7
	Agree	78	21.9	123	34.5
MPIGI		(n=182)		(n=182)	
	Do not know	7	3.8	7	3.9
	Disagree	110	60.4	102	56.7
	Sometimes	12	6.6	16	8.9
	Agree	53	29.1	55	30.6
MUKONO					
Rural		(n=270)		(n=271)	
	Do not know	9	3.3	17	6.3
	Disagree	186	68.9	127	46.9
	Sometimes	22	8.1	33	12.2
	Agree	53	19.6	94	34.7
Urban		(n=86)		(n=86)	
	Do not know	1	1.2	5	5.8
	Disagree	60	69.8	36	41.9
	Sometimes	0	0.0	16	18.6
	Agree	25	29.1	29	33.7
MPIGI					
Rural		(n=123)		(n=121)	
	Do not know	3	2.4	3	2.5
	Disagree	76	61.8	67	55.4
	Sometimes	10	8.1	13	10.7
	Agree	34	27.6	38	31.4
		(n=59)		(n=59)	
Urban	Do not know	4	6.8	4	6.8
	Disagree	34	57.6	35	59.3
	Sometimes	2	3.4	3	5.1
	Agree	19	32.2	17	28.8

# Table A 9: Household reports on the level of community leaders' mobilisation and sensitization activities on the control of malaria

Name of health	Work rise for	Malaria Control activities	Targate/indicators
sub district (HSD)	work plan for malaria control?		l argets/indicators
Nakifuma,	Yes, at the	1) Monitoring of the COARTEM programme	Not indicated
Mukono District	HSD level and not at the health unit	2) Community mobilisation for health promotion. Two sensitization meetings for political leaders	
	level.	3) Increased availability of drugs in both government and NGO units (district objective)	Not indicated
		4) Follow up of HBMF drug distributors /sub county	
		5) Bed net re-treatment in each sub-county	Not indicated
		6) Support supervision of health unit to check for presence of drugs for malaria, review records and look at work plans	
		7) Residual indoor spraying in boarding schools	
		8) Joint continuing medical education for the in- charges of units	
Mawokota South, Mpigi	Yes. Part of the general	1) Prompt and Proper case management of fever cases	1a) 100% of units currently using standard treatment guidelines
District	plan for the Minimum Health Care		1b) 100% of units registering no stock outs of coartem
	Package (MHCP)	2)Preventive chemoprophylaxis of pregnant mothers	2) 40% of pregnant mothers receiving 2 <sup>nd</sup> dose of fansidar
		3)Promotive: home based management of fever	3)100% of the villages with active drug distributors
			4) 80% of the AIDS patients receiving ITNS.
		4) Promote use of ITNS	5)100% of the households sensitized involving VHTs
		5) Environmental health: home improvement	
		campaigns	6a)100% of health units without stock outs of fansidar, cotrimoxale, ORS, Depo provera and vaccines
		6)Management of drugs	6b)100% of health units using stock cards properly
Mukono South,	Yes.	1) Increase IPT coverage from 61% to 80%	
Mukono District		2) Increase IPT coverage from 6% to 20%	
		3) Decrease malaria cases in OPD through community education and provision of bed nets at lower cost, training of more CDDs	
*Buikwe West, Mukopo	Yes. Planned	1) Community sensitization on breeding sites for mosquitees and other vectors	Reduced malaria disease cases
District	Environmental	2) Consitize community on disease sousing we start	Number of children sleeping under bed nets
	Health Work Plan	<ul><li>2) Sensitize community of disease causing vectors</li><li>3) Encourage community to use bed nets and HBMF</li></ul>	Number of functional drug distributors

Matrix A1: Direct malaria control activities planned for selected health sub–districts in Mukono and Mpigi districts for the Financial Year 2006/2007

Source: Health sub district work plans for 2006/2007; \* Source: is Environmental Health Work Plan for 2005-2006

di	istricts as by 2007	
Health care system	Existing and potential capacity/implementation Areas of limited capacity/ implementation	
Households	1. Well worked out division of labour for the management of malaria at home by conder	;
	2. Households have an ability to choose where to treat mild and severe adults ( <i>inability to redistribute functions, power and resources</i> )	le
	"malaria" influenced by their values, attitudes of liking and disliking a 2. Difficulties to break the tradition of using a conveniently located	d
	health care system, financial standing, availability of the units, and health care unit or familiar health care worker when the worker	or
	perceived quality of care. unit has no capacity to manage the case ( <i>powerlessness, lack of</i>	•
	social norms or social capital in homes).	
Communities, sub-county and	1. Able to identify risk factors for malaria and do a problem construction	
town councils	2. Ability to network with relevant organization and mobilize resources for 1. Planning for malaria prevention and control	
	malaria prevention such as ITNs 2. Implementing the preventive control plans by local government	due
	3. Able to support families which lose children due to malaria to lack of finances	
	3. Enforcing existing byelaws to mitigate environmental risk factor malaria transmission ( <i>powerlessness</i> ).	rs for
	4. Conceiving of appropriate malaria control and prevention needs each community by the community leaders including public hea experts (nouverlessness)	3 in alth
	5. Relating malaria to household and national development and installing it an individual household trouble by community leaders	stead

Matrix A2: Summary of the organizational capacity of health care systems to plan and implement malaria control activities in Mukono and Mpigi districts as by 2007

		<ul> <li>ach community by the community leaders including public health experts (<i>powerlessness</i>).</li> <li>5. Relating malaria to household and national development and instead calling it an individual household trouble by community leaders including health workers.</li> <li>6. Balancing environmental management for disease control and economic development (<i>powerlessness</i>)</li> <li>7. Limited bonding between households to provide support to each other to facilitate prompt health care seeking and purchase of drugs during stock outs in govt units (<i>low social capital</i>).</li> </ul>
Community drug distributors (volunteers)	<ol> <li>Distribute antimalarials</li> <li>Providing some health education on malaria treatment and prevention</li> <li>Monitoring sick children at home and referring those not responding to treatment</li> <li>Mobilising communities to improve environments to reduce mosquito breeding and malaria transmission</li> </ol>	Mobilizing finances from community members for transportation to collect medicines from health units
Health units (Government and NGOs)	<ol> <li>Planning, implementing, monitoring and reporting on medical /clinical (technical) aspects of disease control.</li> <li>Providing ITNs to children admitted in peadiatric wards and their attendants</li> <li>Installing window screens to protect patients and their attendants for mosquito bites and malaria transmission</li> <li>Distributing nets to under-five children and pregnant mothers</li> <li>Lower level units are able to manage mild malaria</li> <li>Higher level units are able to managem severe malaria</li> <li>Providing health education to patients or child carers</li> </ol>	<ol> <li>Plan and monitor interactional tasks associated with medical treatment and preventive activities in the communities</li> <li>Monitoring treatment, compliance and adverse effects of antimalarials for children who complete treatment at home.</li> <li>Limited capacity to effectively manage access and use of ITNs by children admitted in hospital wards and patient attendants most of whom are mothers.</li> <li>Renovation of worn out window screens</li> <li>Budgeting for interactive activities to be undertaken by health unit committees</li> <li>Integrating distribution of ITNs with clinical care; vulnerability and</li> </ol>

Private clinics	<ol> <li>Undertaking clinical treatment of malaria</li> <li>Providing individualized health education (medical prevention)</li> </ol>	<ul> <li>inability to afford nets by the child's family.</li> <li>7. Govt units not able to consistently supply antimalarials and other logistics for malaria treatment</li> <li>8. Consistent use of recommended antimalarials</li> <li>9. Availing antimalarials to vulnerable populations during drug stock outs</li> <li>10. Integrating clinical care with preventive care</li> <li>11. Reaching out to men to allocate resources to preventive interventions such as ITNs</li> <li>12. Inputting researchable clinical questions in national malaria control research agenda</li> <li>1. Engaging in preventive activities</li> <li>2. Conforming to recommended treatment policy</li> </ul>
		3. Providing community health education (unless contracted to)
Health sub-districts	Planning, implementing, monitoring and reporting on medical /clinical (technical) aspects of disease control.	<ol> <li>Relating with private for profit health care units</li> <li>Interactional tasks, behavioural and attitudinal changes of child cares and the communities not adequately planned, implemented monitored and reported on.</li> <li>Inability to conceive of fascible malaria control programs other than</li> </ol>
		<ol> <li>Inability to concerv on reasoner matrix control programs oncer matrix the traditional curative services.</li> <li>Inability to do needs assessment for malaria control and prevention activities in their localities</li> <li>Minimal health education given on malaria in communities</li> <li>Minimal monitoring of malaria control activities at the grassroots</li> </ol>
Other potential actors: a) Infant and primary Schools	<ol> <li>School teachers can identify "malaria" suffering children and send ill children back home for treatment</li> <li>Stocking antimalarials and treating some children with "malaria"</li> <li>Some schools are able to rash severely sick children to nearest health units</li> </ol>	<ol> <li>Stocking recommended antimalarials</li> <li>The scale of stocking antimalarials and effectively managing malaria in infant and primary school pupils is limited to very few schools.</li> </ol>
b) Community development departments	<ol> <li>Initiating health promotion activities in the communities as evidenced by the participation in HIV/AIDs programs</li> <li>Influencing behaviour and attitudes of child carers and communities with regard to health care seeking, treatment, compliance and use of preventive technology</li> <li>Mobilizing communities to participate in health promotion activities</li> </ol>	<ol> <li>Identifying malaria control needs to handle.</li> <li>Influencing and engaging health professional in collaborative endeavors.</li> <li>Planning health prevention and promotion activities with the health workers.</li> </ol>
c) Fisheries department;	<ol> <li>Removing hyacinth from the lake which breed mosquitoes</li> <li>Mainstreaming malaria as evidenced from their ability to mainstream HIV/AIDS in its programs</li> </ol>	Identifying malaria control needs to participate in.
d) NAADS	<ol> <li>Has been integrating other health conditions like HIV/AIDS using the same resources</li> <li>Would have the impetus to integrate malaria in its programs because of the negative social and economic impacts of malaria on the health status of farmers and their children</li> <li>Had a reasonable budget unlike other govt departmental programs</li> </ol>	Not integrating malaria in its programs because it was not required to.

e) NGOs	<ol> <li>Managing malaria for special vulnerable population groups in restricted geographical areas.</li> </ol>	<ol> <li>Not able to serve large geographical areas unless contracted by government.</li> </ol>
	2. Effectively manage resources to bring changes in communities and populations they serve.	<ol><li>Not able to provide universal services to entire community and populations unless contracted by government.</li></ol>
f) Faith based organisations	1. Have capacity to integrate malaria in their programs just as they do	<ol> <li>Limited knowledge of what to do about malaria</li> </ol>
	other diseases like HIV/AIDS	<ol><li>Not networked with malaria control program</li></ol>
	2. Have access to large numbers of people who are naturally constituted	
g) Industries (large and small)	1. Are able to provide health care services including malaria treatment and	Difficulty to balance economic motives with environment protections issues
	preventive services (ITNs and Indoor residual sprays) its employees	unless required to by law.
	and family members	
	2. Culprits in creation of mosquito breeding sites	
	3. Have potential to institute mitigation measures against created	
	environment mosquito breeding grounds.	

Sector		Estimated cost for FY2006/07	2007/08	2008/09
	a)Construction of Kabanga Staff house by roofing Plastering, flooring, and shutting	14,000,000/=	-	-
Health care	b)Construction of Staff houses with a toilet and water harvesting system at Mpunge Maternity			
	c)Construction of a health Center 2 for Bunakijja and Terere Parishes	31,000,000/=	-	-
			45,000,000/=	55,000,000/=
Gender and Community based services	a)Trainings, awareness seminars/campaigns in the following topics: HIV/AIDS, <u>Malaria Control</u> , Poverty, Human Rights and Laws of Uganda in all parishes		3,000,000/=	-
	b)Procurement and provision of sewing machines to women/youth groups in all parishes			
	c)Provision of bicycles to 15 FAL Instructors		2,000,000/=-	-10,000,000/=

### Table A 10: Three year plan of Ntenjeru Sub-county 2006/07-2008/2009)

### MATRIX A3: Summary of the critical values addressed and not addressed by the malaria control policy

Critical values	Aspects of the values addressed by the policy	Aspects not adequately or concretely addressed by policy	Aspects addressed during implementation but not reflected in the policy
Target the most vulnerable/poor	Biological vulnerability -2 guidelines (i.e. HBMF) and malaria in pregnancy target children and pregnant women - universal free or subsidized ITNs to under 5s and pregnant women -The HBMF strategy collects data on sick children attended by the CDDs	Socio-economic and locational vulnerability -Rural/agricultural and big families not specifically addressed; Vulnerability restricted to the sick and less those at risk of illness - Malaria morbidity data not disaggregated by the social economic status indicators of the guardians -Resources not allocated and organised according to degree of endemicity, seasonality and social-economic vulnerability -no provision for funding for local level assessment of the problem	<ul> <li>Free ITNs were distributed to rural areas excluding the urban areas</li> <li>some private clinics charge according to socio-economic status</li> <li>treatment offered on flexibility /credit basis of</li> <li>Some local governments and town councils planned for malaria prevention</li> </ul>
Service availability and accessibility /equity	-Assures provision of efficacious antimalarials to all health care systems -Pre-packed antimalarials to be kept in village	<ul> <li>-Silent on how the poorest people can access drugs during drug stock outs in government units</li> <li>- silent on how to improve human/patient ratios and other resources during malarial seasons</li> <li>-silent on how to avail cheap efficacious drugs in private sector</li> <li>- silent on how to improve the distribution of the private units in underserved areas;</li> <li>-silent on social capital development at the</li> </ul>	The private sector continues to grow unguided, un-equitably and unsupported Continued use of non-recommended antimalarials by all health care systems Inequitable access to health care by children of the same need
		family and community level to enhance	

Critical values	Aspects of the values addressed by the policy	Aspects not adequately or concretely addressed by policy	Aspects addressed during implementation but not reflected in the policy
		equity in service access and utilization.	
		<ul> <li>-no policy on managing transition periods of changes in treatment policy which affects access</li> </ul>	
Reducing out of pocket expenses for medical treatment	Government services are supposed to be offered free of charge by a Presidential directive.	Silent on how to enable the poor who cannot afford to buy medicine during drug stock outs to obtain medicine	Community insurance schemes have been successful in a few parts of Uganda (literature Chapter
		-Silent on how to subsidize care obtained from the private for profit sector where the majority seek care.	Health workers borrow medicine from paying wards to assist the poor who cannot buy medicine
		Silent on how to organise communities for formation of mutual support groups to help the poor access care	
Integration	Integration of malaria in IMCI, EPI, School health programs, water and sanitation, safe motherhood; Integration of malaria in programs of other sectors eg agriculture, gender, local government, finance, NGOs, CBOs etc. -integration of malaria control into	Integration of public and private sector given their specialized roles to treat mild and severe malaria respectively Integration of curative and preventive services by the private sector -integration of health unit treatment activities with those of community health	The public sector manages the bulk of the severe illnesses while the private manages the uncomplicated cases
	РНС	resources and especially monitoring the sick and disabled Minimal adaptation of generic proposals from contextual documents such as the National health policy	
		Proactive grievance handling/reporting structures for public and private health sectors	
		-integration of technical and political tasks	
		<ul> <li>-managing vertical programs with mainstream services in units;</li> <li>-managing common conditions and emergence ones in units</li> </ul>	
		- collection of vital data from the community	
Participation	Universal utilization of public services	-Barriers and environmental issues not fully addressed in public and private sectors	The HBMF strategy is the involves in service provision and utilization.
	Assured participation of many sectors and households e.g.	-Utilisation of services in the private sector	
	households to seek care promptly, and use efficacious drugs	-Role of the community in problem construction	
	Mobilise communities and institutions for increased knowledge about disease, change beliefs and attitudes	-Role of norms of community level actors to bring changes in risk factors and situations	
		-Policy not concretely committed to organizing actors in their groups, develop social capital, and empowerment for more effective participation;	

Critical values	Aspects of the values	Aspects not adequately or concretely addressed by policy	Aspects addressed during
	addressed by the policy	concretely addressed by policy	reflected in the policy
		-No guidelines indicated to guide the	
		activities of others	
		-health systems are not organised to face	
		and handle challenges in malaria treatment	
		and prevention	
		-the role of health workers in monitoring	
		effectiveness of drugs	
		-the role of health workers in identifying	
		researchable areas on diseases and risk	
		factors	
		<ul> <li>Structures for grievance handling in the</li> </ul>	
		course of health care seeking in public and	
		private	
Familiarity	Targets the government health	Not committed to support all health care	
	units	systems which people prefer to use. The	
		well addressed.	
Flexibility	-The policy proposed to supervise	-The policy addressed half the problem.	
	all health care systems so that they	The problem of poverty which make many	
	fully implement the policy;	people to buy half doses from the private	
	The IFC strategy property to	sector, as well as the cost of drugs is not	
	-The fec strategy proposes to	concretely addressed.	
	adhere to treatment instructions	it is growing and is leading in handling	
		common illnesses	
Added value	Improving casemanagement	Does not concretely indicate	
		whether and how to improve	
	Provision of health education in	laboratory services in both the	
	the community	public and privates sectors	

Policy	Malaria Policy Documents								
issue									
		OVERAL		C					
	POLICY		SUD-PROGRAM STRATEGIC PLANS						
		CIC							
		PLAN							
	National Malaria	National Malaria	National Policy on	Uganda	Policy and Strategy	Malaria in	Home management of		
	Control Policy	Control Strategic	Malaria Treatment	Communication	for Insecticide	Pregnancy	Fever Strategy (HMF)		
		Plan 2001/2-2004/5	September, 2005	Strategy for Malaria	Treated nets	Control			
			-	2005-2010		Strategic plan			
1.	Country profile, Malaria	Malaria situation,	Situation analysis	Challenges facing	Malaria situation, &	Malaria situation	Country profile, health		
Conte	situation, effects,	Roll Back malaria,	of case	national malaria	effects, promotion	and problems in	system expectations,		
xt	awareness by people,	malaria and	management;	control effort e.g.	activities of ITN, use	pregnancy	IMCI activities,		
	past history of malaria	poverty reduction,	Emergence of	poor treatment	and coverage,		household management		
	control in Uganda	Govt. policies and	resistance to cheap	practices, at home	problems to scaling		of fever, problem		
		HSSP	antimalarials, need	and in nealth units,	up use		statement		
			to appropriately	poor compliance, and					
			use new urug	Inadequate resource					
				allocation for malaria					
				IEC/BCC					
				-Review of national					
				response to malaria;					
2.	Sustainable	To prevent and	To reduce malaria	IEC is essential to:-	Not indicated. But	To contribute to	To contribute to the		
Goals,	malaria	control morbidity	morbidity and	1.Advocate for	committed to Abuja	reduction of	reduction of mortality		
	control to	and mortality and	mortality so as to	policies and resources	Declaration	maternal and	and morbidity due to		
	prevent	minimize social	minimize related	supporting of malaria		perinatal	malaria in children		
	mortality,	effects and	social ill effects and	control;		morbidity and	under five years of age		
	reduce	economic losses	economic losses	2. Communicate		mortality as well	in Uganda.		
	morbially and	malaria in the	discosso in Lloondo	3 Educato		as socio-			
	social and	country	uisease in Oganua	communities and		the country			
	economic	country.		health providers		the country			
	losses thereby			about home based					
	support			management					
	poverty			4. Improve quality of					
	eradication in			health care					
	the country.			5. Create demand for					
				malaria services and					
				products					
				6. Improve					

### MATRIX A4: Summary of the content of the Uganda Malaria Policy Documents as by December 2007

			client compliance with treatment 7. Change household practices eg early treatment of malaria 8. Involve communities in malaria control			
3.Specific objectives	<ol> <li>To increase the proportion of the population at risk of malaria, who receive appropriate treatment for malaria within 24 hrs of onset of symptoms, to 60% by the end of 2005</li> <li>Increase the % of pregnant women receiving IPT to 60% by end of 2005.</li> <li>Increase the proportion of under five children regularly sleeping under ITNs to 50% by the end of 2005</li> <li>Reduce case fatality rate at hospital level to 3% by end of 2005.</li> </ol>	To ensure availability of highly efficacious antimalarial medicines at all levels including the household. 2. To ensure access to prompt effective malaria case management at all levels including the household 3. To ensure availabili ty of IPT in all ANC facilities 4. To promote positive malaria case management practices among the population through behaviour change communication 5. To promote the detection and reporting of adverse medicine reactions	Many and specific tailored to the challenges in each sub program i.e. case management, home management, ITNs, IPT, indoor spraying, and epidemic preparedness	<ol> <li>Increase the proportion of children below 5 years using ITNs from 3% to 60% by the year 2005.</li> <li>Increase the % of pregnant women using ITNs from 0.5% to 60% by the year 2005.         <u>ALSO</u>:         Increase the proportion of households with one or more nets from 13% to 75% by the year 2005.         Increase the % of households with one or more treated nets from 3% to 60% by 2005.     </li> </ol>	<ol> <li>To have 60% of the targeted population access IPT by 2004</li> <li>To have 80% of pregnant mothers access quality case management of malaria according to guidelines by 2004</li> <li>To have at least 60% of pregnant mothers access ITN by 2004.</li> </ol>	<ol> <li>Increase to 60% &lt;5year olds with fever who have access to pre- packed antimalarials at household level by 2003.</li> <li>Increase to 50% &lt;5yr olds who receive early appropriate treatment with pre-packed CQ+SP</li> <li>Increase to 50% the proportion of children with severe fever illness who are promptly referred to formal health workers by 2003</li> <li>Increase the % of health units offering appropriate care to children with fever</li> <li>Improve /strengthen data collection on morbidity and mortality at community level.</li> <li><u>ALSO:</u></li> <li>Increase to 25% pregnant mothers using IPT by 2003</li> </ol>

							fives sleeping under bed
							nets by 2003.
4.Inter	6 strategies are	10	1)Develop and	Give appropriate	Not indicated but	5 strategies:	10. Strategies:-
ventio	proposed:	strategies	provide guidelines	messages addressing	implied in roles of	1. Ensure	1. Communication for
ns	1. early diagnosis and	:-	&tools	communication	govt.	antenatal care	behaviour change to
/strate	prompt treatment of	1)case management	2) Train health	challenges in each sub		services provide	improve community
gies	malaria	2)intermittent	workers and CMDs	program	1.Create demand for	IPT	participation &
	2.prediction, early	presumptive			nets	2. Increase	mobilisation
	detection, and control of	treatment of	3)Advocacy &			awareness of	2.Pre-packaging of CQ
	epidemics	malaria in	social mobilisation		2. Set standards and	ANC and IPT at	and SP into unit doses
	3. preventive measures	pregnancy			norms for nets and	all levels of care	3. Train and supervise
	including	3.vector control	4)Procure and		insecticides		drug distributors
	chemophylaxis, personal	4. epidemic	distribute			3. Monitor	4. Distribute pre-
	protection, vector	preparedness and	recommended		3.Support systems for	appropriateness	packaged drugs thru'
	control, environmental	response	drugs, diagnostics,		targeted subsidies	of IPT, nets	private and public
	and biological control	5. Advocacy, IEC	supplies				sectors
	4.integration of malaria	and social			4.Coordinate partners	4. Quality	5. social marketing pre-
	into PHC	mobilization	5)Coordinate &			management of	packs
	5. monitoring evaluation	6.Human resource	supervise activities		5. Monitor and	malaria in	6. reward and retail
	6. capacity building and	development			evaluate efforts to	pregnancy at all	drug distributors
	operational research	7.systems	6) Monitor &		scale up net coverage	levels of care	7. record keeping and
		strengthening	evaluate				reporting
		8. Technical				5. Create	8. linking communities
		support	7) Surveillance &			structures to	to health units
		9. Monitoring,	operational			enable pregnant	9. Improve quality of
		evaluation &	research			women obtain	care at health facilities
		operational				ITNs	(Health centre 2)
		research					10 Quality assurance
5.	National level	Indicates	National Medical	Individuals	Indicates	1) Community –	1)LC1 Council, VHCs,
Struct	: Malaria	partnerships to	stores and Joint	Households,	partnership	including	community groups, and
ure	Control Unit	work with at	Medical Stores	Community	s and	traditional birth	other committees set up
and	of the MoH.;	different levels	-Health workers in	Service providers	responsibili	attendants, and	by NGOs or CBOs
Roles	Zonal Focal	with	health units of all	Leaders	ties:-	community	2)Parish development
of	officers based	responsibilities.	levels, community	National level: Office		based health	committees
Partne	in Regional	These include: -	medicine	of the President, Min.	The	workers (to	3) Sub-county Council
rs in	hospitals,	i) Families	distributors	of Finance, Education,	partners	sensitise	and health committees
policy	District	(mothers, fathers,	(CMD), preservice	Gender, Health	include:-	communities)	4) District management
imple	Health Team	relatives,	tutors, private	NGOs: Donors and	MOH,		team and district health
mentat	and clinical	caretakers)	practitioners,	FBOs	Other govt	2) Health units –	committee
ion	officers in	ii) Community i.e	District health	Mass media	depts.,	to provide	5) Malaria Control
	charge of	parish and village –	teams	Private sector	developme	integrated IEC,	National Advisory
	health units*,	political leaders,		Local governments	nt partners,	and IPT	Committee and IMCI
	village health	CBOs, PDCs and			private		working group

r							
	committees,	community health			sector eg	3) District and	
	community	resource persons,			manufactur	health sub	
	malaria focal	faith based leaders			ers and	districts	
	persons,	iii) District - health			distributors		
	urban heath	sub district and			of nets,	4) National level	
	departments	sub-county, district			private	,	
	(how about	health teams			sector not		
		health units			dealing in		
	113D::)	iv) National Min			teaning in		
		iv) National – Will			nets, civii		
		of Health, and			society.		
		Malaria Control					
		Program (MCP);					
		other line					
		ministries					
		v) National –					
		Ministry of					
		Finance,					
		Development					
		Partners, National					
		and International					
		NGOs Private					
		Sector					
6.	-integration	1) Partnership				Community	Community
Appro	-PHC	2) Equity			Partnerships	participation	participation
aches	me	3)Country			Vulperability /equity	purificipation	Empowerment (implied)
concen		ownership of			Scaling up /coverage		Empowerment (implied)
ts and		malaria control			Scaling up / coverage		
to and							
place		4) Health soctor					
pies (value		4) Health Sector					
(value							
s) for		5) Coverage,					
guiain		6) Cost effective,					
g		/) Evidence based					
ımple		8) Community					
mentat		participation					
ion		9)Relationship with					
		other countries					
		10) Linkages within					
		MoH related depts					
7. Sources of	-Increased govt.	Poverty Action	Not indicated	Not indicated			Not indicated
Funding	allocations from the	Fund/PHC					
	annual budget	Conditional Grants					
	-increased community	Budget					

	and private involvement -increased district and sub-county allocations from revenue collections -additional support from bilateral and multilateral agencies						
8 Budget	-	-		-	Not indicated	Not indicated	US\$ 7,161,201
		US\$88,16					
		5,526					
9.	-	Yes	Training	-	no	yes	Yes
Implementation			arrangements to				
plans/			introduce new				
arrangements			drug are indicated;				
			other activities are				
			to be 'integrated'				
			eg in normal				
			supervision and				
			HMIS returns				

### HOUSEHOLD SURVEY TOOL

## HOUSEHOLD EXPERIENCES TO CONTROL AND PREVENT MALARIA IN MUKONO AND MPIGI DISTRICTS: A SURVEY DATA COLLECTION TOOL

### FORM NUMBER -----

A. LOCATION IDENTIFICA	TION			
County/Health Sub District			Sub-county Name	
Mukono	= 1		Ntenjeru	= 1
Nakifuma	= 2		Seeta Namuganga	= 2
Buikwe	= 3		Lugazi Town Council	= 3
Gomba	= 4		Kabulasoke	= 4
Mawokota South	= 5		Nkozi	= 5
Mawokota North	= 6		Mpigi Town Council	= 6
Parish Name		Village Name		
Interviewer's Name:		Date		
Time interview started		Time interview ended		

### Introductory remarks:

Malaria is increasingly becoming a big problem in Uganda leading to high morbidity and mortality among the under five children and also adults. We are trying to understand what is causing this problem by talking to heads of households and health care managers in homes. We want to know what you exactly do when you or other family members experience fevers /malaria in this homes. We are also interested to know how severe malaria is handled and your experiences with different sources of help. You were randomly selected to participate in this study and the information which you are going to give will be kept confidential and not associated with your name in the report.

### **B. PARTICULARS ABOUT THE HOUSEHOLD**

Let me start by understanding your family. [Obtain information on the household by filling the table below].

Characteristic	Is there:	Age (years)	Education:			Main Occupation:	Who is	answ	ering
	Yes =1	N/A =998	None	= 0		Agriculture =1	the questic	ons?	Ū
Who is the head of this	No =0	Don't know =997	P1-P4	= 1		Trade/self			
household?	NA=998	Missing =999	P5- P7	= 2		employed =2		Yes	=1
			S1-S4	= 3	:	Salaried = 3		No	=0
			S5-S6	= 4		Housewife = 4		NA	
			Tertiary college	= 5		Casual worker = 5		=998	
			University	= 6		Unemployed = 6			
			Others (please sp	ecify=7		Retired =			
			Don't know	=997		7			
			NA	=998	:	Sick not working= 8			
			Missing	=999		Other specify9			
						NA =998			
						Missing =999			
1. Is there a male head in									
this home?									
2. Is there a female head									
in this home?									
3. Is there a spouse in this									
home?									
4. Is there a child head in									
this home?									

5. [*If there is a child head*, ] what is the sex of the child head?

6. How many people stay in this home most of the time including yourself? ------

7. Who are the other people who stay with you in this home most of the time? Kindly give me their details. (write codes in the cell)

Initials of HH	Relationship to	<u>ls the</u>	Sesx:	<u>Age</u> :	Education level	Main occupation
member	household head	member an	Female =1		None = 0	Agriculture =01
	Biological child = 1	orphan?	Male =2		P1-P4 = 1	Trade =02

Relative = 2 Fostered child = 3 Employee = 4 Others = 5	Yes = 1 No = 0		P5- P7       = 2         S1-S4       = 3         S5-S6       = 4         Tertiary college =5         University       = 6         Others specify       =7         Don't know       =997         NA       =998         Missing       =999	Housewife=03Salaried=04Casual worker=05Unemployed=06Retired=07Student=08Sick not working=09Still a baby=10Other specify11NANA=998Missing=999

8. Has any member of this household had a pregnancy or a baby in the last 12 months?

Yes =1 (follow up experiences with fever/malaria during pregnancy later)

No =0

### C. RISK CONSTRUCTION OF FEVERS/MALARIA

 1. Is fever/malaria a problem in this home?

 Yes
 =1

 No
 = 0 (skip all questions in this section and go to section D)

 Do not know
 =997 (skip all questions in this section and go to section D)

2. If yes, what makes you say that fevers/malaria is a problem?

	[tick all mentioned	; do not read out answers at firs]
Children are ever falling sick in this home		
We are ever in health units treating fevers	/malaria	
We spend a lot of money on malaria treats	ment in this home	
Fever/malaria does not respond to treatme	ent these days	
Government health units do not have drug	s for fevers /malaria all	
the time		
Fevers/malaria has ever killed my child		
Other specify		
3. Who commonly gets fevers in this hon	ne?	
[circle d	only one answer]	
Children under five years	=1	
Older children (6-18 years)	=2	
Adults	=3	
All of us	=4	
4. How is fever/malaria transmitted from	one person to another in this hom [tick all those mentioned; do r	ne? not read out answers]

[tick all those mentioned; do not read out	answer
Sweating	
Sharing clothes previously worn by a sick person	
Sharing utencils such as cups	
Sleeping in unwashed beddings where a malaria sick person had slept	
Drinking unboiled water	
Being beaten by mosquitoes	
Others (specify)	

[Ask question 5 if the respondents says in Q 3 above that under five children commonly fall sick from fevers/malaria]

### 5. What makes the under five children in this home get fevers often?

[tick all those mentioned; do not read out answers]	
A lot of mosquitoes	
Drinking bad unsafe water	
Eating dirty things	
A lot of rain these days	
It is a season of mangoes	
The maize season	
Tall grass surrounds the home	
Pools of water surround the house	
We are surrounded by swamps and mashes	
We are surrounded by forests	

Children stay long outside in the early hours of the night	
Children are bitten by mosquitoes any time of the day	
Bad housing – no proper shutters	
My children never get treated properly to cure because of poverty	
My children do not sleep in bed nets	
Bad sleeping conditions	
Do not know	
Others (specify)	

6. What economic, social or cultural events or activities make you, your children and other family members get exposed to mosquito bites and malaria?

	[tick all mentioned; do not read out answers at first]
digging in the swampy area	
fishing at night	
block burning	
burials	
visiting	
Attending funeral rites	
Attending prayers at night	
Do not know	
Others (specify)	

7. What is the main source of mosquito breeding places around this house?

	[circle only one answer]
The swamp/mash/streams/river	=1
Borrow pits	=2
Grass/ uncultivated fields	=3
Forest/tall trees	=4
Near by banana plantation	=5
Water tank	=7
Do not know	=997
Other (specify)	

8. Why do mosquitoes easily enter your house?

[tick all those mentioned; do not read out answers]

	Luck all mose mentionea; ad	э пог геаа ош а
Mosquitoes cannot be stopped from entering	the house	
The house does not have good shutters		
The ventilators have holes		
The house is not strong enough/not complete		
The shutters do not have screens to stop mos	quitoes from entering	
We do not close the house early enough in th	ne evening	
Other (specify)		

9. What do you think are the reasons why many people in this community suffer from malaria?

[tick all those mentione	ed; do not read out answers]
Absence of protected water sources	
Inadequate knowledge on the spread of malaria	
People are not boiling drinking water	
People keep bushes around their homes	
Many excavations around us	
Many swamps around us	
Too much rain	
Poverty	
Inability to obtain full malaria treatment	
Non functional health units (no drugs for malaria)	
Lack of laboratories in the health units	
Poor houses	
Do not know	
Expired drugs	
Politics /inactive leaders	
Others (specify)	

### D. EXPERIENCES WITH SEVERE MALARIA AMONG THE UNDER-FIVES

[I want us to start by talking about severe fevers/malaria. Fevers or malaria may be mild or severe. When I talk about severe malaria I mean that somebody who started with a fever becomes too ill so ill such that if it is a child he/she develops convulsions, coma, anemia (become very pale and extremely weak). A person with severe malaria may result in death if not urgently and properly handled. Adults may also suffer from cerebral malaria. Other parts of the body like the breathing system, the heart, the blood, the urinary system may fail being badly affected by the disease].

1. Has any one in this household ever had severe malaria?

Yes	= 1
No	= 0 (still ask Q 2)
Do not know	= 997

2. Has any child five years and below ever had severe malaria in the lat year (12 months)?

Yes	=1
No	=0 (still ask Q3)
Do not know	=997

3. How many people have ever had severe malaria in the last 12 months? ------

4. How old were the people who got severe malaria in the last 12 months? (please fill the table below)

Initials of persons	Age of person at the time she/he got severe malaria

5. Is any child under five having severe malaria today? [If the respondent has to take the child for treatment stop the interview and make another appointment]

[Circle only one answer]Yes
$$= 1$$
No $= 0$  [Skip to Q7]

6. [*If yes to 5*], how long ago did the severe symptoms start? ------ (hours).

[Follow up respondents who say that their under five child had severe fever/malaria in the last 12 months in  $Q \ 2 \ \& 4$  above. Randomly pick one child and follow up that one in a situation where more than one child had severe malaria ]

#### 7. What was the first action you took when the child got severe fever/malaria?

[tick all mentioned; do not read out answers at first]

flick all mentionea, ao n	or read our answers ar justj
Gave an antimalarial	
Gave a pain killer eg panadol, aspirin	
Gave an antibiotic eg septrin	
Gave some herbs	
Tepid sponging	
Informed the father	
Informed relative	
Informed neighbour	
Prayed	
Took child to a health unit	
Did nothing	
Others (specify)	

[Ask Q8 to respondents who gave some modern drug]

8. Where did you obtain the drug you gave the child from?

[circle only one answer please]	
It was a left over medicine present in the home	=1
Bought from a drug shop	=2
From a health unit	=3
From a community drug distributor	=4
Given by a neighbour/friend	=5
Others (specify)	

9. Where did you take the child as the fever/malaria progressed from mild to severe?

[Rank places starting with (1) i.e. the level the child was first taken, to z (the place the child was lastly taken]

0 ()
Health unit level 5
Health unit level 4
Health unit level 3
Health unit level 2
Private clinic/dispensary
Traditional birth attendant
Community drug distributor
Drug shop
Traditional healer

Church mosque
Cannot remember
Stayed home
Other (specify)

10. How many places did you visit when the under five child got severe fevers/malaria? ------

[Ask question 11 to respondents who took the under five child who was severely sick to a health unit outside the county].

11. Which place was eventually able to restore your child's health?

	[please circle only one answer]
Health unit level 5	=01
Health unit level 4	=02
Health unit level 3	=03
Health unit level 2	=04
Private clinic/dispensary	=05
Community drug distributor	=06
Drug shop	=07
Retail shop	=08
Home	=09
Traditional healer	=10
Traditional birth attendant	=11
Church /mosque	=12
Cannot remember	=13
Other (specify)	

12. Which people did you consult or gave advice over the child's severe illness? [Rank persons consulted starting with (1) i.e. the persons fu

13. What information or other resources were you seeking to obtain from the people whom you consulted?

	[tick	all mentioned; do not read out answ	vers first]
	Help to assess condition		
	Advise me what to do		
	Support in a difficult time		
	Medicines to give the child		
	Place to obtain help		
	Money to take child to health unit		
	Chances of child's survival		
	Assistance to hold /handle my child		
	Somebody who could drive		
	use/take us to health unit		
	Not applicable		
	Other (specify)		
15. 16.	How long had the child been sick before reaching How long had the child been severely sick before r	the first health unit visited?	(hours)
17.	What delayed you from obtaining help in a timely (May	manner? (there is delay if action is tick more than one answer; do not	taken in more than 24 hours) read out answers at first)
	Lack of money /was looking for money	for transport and drugs	
	Knew that the child would get better		
	because she/he had obtained some medicine		
	Re-assurance from community health workers that	t	
	the child would get better		
	Had nobody to leave other children with		
	Spouse was not at home		
	Was personally sick		

Had been Child wa: No transp Child got Cannot re Not appli Other (sp	out of home s with other people /siblings port available to health unit severely sick at night member cable(N/A) ecify)	
18. (a) What help wa	is received from the <u>first place</u> where you took the child	? D
Given and Herbs Other me Laborator Intravence Blood tra Tepid spo Referred No help Cannot re Other (sp	[tick all that apply imalarial (injection or tablets) dicines(e.g panadols, aspirin, antibiotics) ry test for malaria us drip nsfusion onging to a higher level of care emember ecify)	Do not read out answers at first]  [[mention name] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ]
18. (b). Did the child	d receive all the prescribed drugs at the first treatment of $V_{os}$	entre?
18.c) If no, why didr	Yes =1 No =0 NA/centre does not give drugs = 998 i't the child receive all the prescribed drugs? lack of enough money prescribed drugs were not available in the clinic Prescribed drugs were not available in the community Others ( specify)	=1 =2 =3
19. What help was re	eccived from the last place where you took the severely	sick child?
Given and	timalarial (injection or tablets)	Do not read out answers at first]
Herbs Other me Laboraton Intraveno Blood tra Tepid spo Oxygen Hospitali Other (sp	dicines (e.g panadols, aspirin, antibiotics) 'y test for malaria us drip (ecupa yamazzi) nsfusion nnging zed ecify)	[mention name]
19.b) Did the child re	eceive all the prescribed drugs at the second / last treatm	nent centre?
	Yes No NA/centre does not give medicines	=1 ( <i>skip to q 21d</i> ) =0 = 998
19. c) If no, why did	n't the child receive all the prescribed drugs? lack of enough money prescribed drugs were not available in the clinic Prescribed drugs were not available in the community Others (specify)	=1 =2 =3
19.d) Why do you th	ink the treatment received at the first place did not work	k well?

19. e) Did the child get well?

	[circle only one answer]
The Child recovered	= 1
Died	= 2
Got disabled	= 3
Other (specify)	

20. How exactly did severe malaria present in the under five child?

[tick all mentioned]					
Body shaking					
Convulsions (okwesika)					
Very hot body					
Not eating					
Not breastfeeding					
Eyes turning yellow					
Coma					
Extreme body weakness					
Vomiting					
Difficulty in breathing					
Aneamia					
Others (specify)					

[Ask q21 to those who mention that the under five child manifested convulsions (okwesika)]

21. What did you think was the cause of the convulsions?

[tick all that apply; do not read out answers at first]		
Very high fever/malaria reaching the brain		
Supernatural cause/bewitched		
A drug taken previously had not worked		
Non-immunity to malaria		
Delayed treatment of fevers/malaria		
Had previously experienced convulsions		
It is a family problem		
Possibility of getting measles		
Do not know		
Other (specify)		

22. Has any family member ever experienced a disability after a severe malaria illness?

Yes	=1 (Please describe the disability)
No	=0

23. Has any person ever died from malaria in this household?

Yes	=1 (ask Q 26)
No	=0 (ask Q26)

24. Has this household ever lost a child five years and under due to malaria in the last 5 years?

Yes =1 No =0 (*skip to Section E*)

25. How many children have died due to malaria in this household in the last 5 years? ------

26. Has any woman in this household ever had a miscarriage due to malaria in the last 5 years?

Yes		=1
No		=0
Not applicable (no woman of child bearing age)	=998	

27. Where did the death of an under five child, older child or an adult who died from malaria in the last 5 years occur? Where did the miscarriage occur?

[Please fill table with right code; do not read out answers at first. Where two or more people of the same group died, randomly select one]

Place person died	from	Under five child (0-5 yrs)	Older child (6-18 years)	An adult 19 + years	A miscarriage
Home	=01				

Health unit level 5 (hospital) =02		
Health unit level 4 =03		
Health unit level 3 =04		
Health unit level 2 =05		
Private clinic/dispensary =06		
Drug shop =07		
Traditional healer =08		
On the way to health unit =09		
Traditional birth attendant =10		
Other Specify =11		

[Ask Q 29 if there was an under five child who died from fever/malaria in the last 5 years]

29. How long had the under five child been ill before reaching the health unit where he/she died from? ------ (hours)

a) How much time had passed between recognition of fever and dying of the under five child? ------ (hours)

b) How much time had passed between development of severe fevers/malaria and dying ? ------ (hours)

[Ask Q30 if there was a woman in the household who got a miscarriage associated with fevers/malaria]

30. How long had the woman been sick before reaching the health unit where she had the miscarriage? -------(hours).

#### E. EXPERIENCE WITH MILD OR UNCOMPLICATED FEVERS/MALARIA

[I now want to ask you about your experiences regarding <u>mild</u> malaria /fever in this home, especially as it affects the under five children. Some of the common signs of mild malaria are fevers, headaches, general body weaknesses, and body pains not leading to hospitalization)

1. Has any member of this household ever had m	aild fevers in the last 2 weeks?
Yes =1	
No =0	
2. How many people have had mild fevers/mala	ria in the last 2 weeks?
3. Has any child under five years had mild fever	s/malaria in the last 2 weeks?
Yes	=1
No	=0 (ask Q 4)
4. Is any <u>child under five</u> years having mild feve	it/malaria today?
Yes =1	
No =0	
5. What help or medicine was given to the under randomly select one and follow up that on Tick	r five child who fell sick in the last 2 weeks? [ <i>if two or more children fell sick please</i> all that apply. Do not read out answers]
Given antimalarial	
Herbs	[mention name of herb]
Other medicines (e g panadol)	
Laboratory test for malaria	
Intravenous drip	
Blood transfusion	
Referred	
No help	(skip to SECTION F)

6. How soon was the antimalarial given after recognizing fever in the under five child? ------(hours)

\_\_\_\_\_

Not applicable Other (specify)

7. Where did you take the under five child when he/she got mild fever/malaria in the last 2 weeks?

[Rank places starting with (1) i.e. the level the child was first taken, to z (the place the child was lastly taken]

 $\Box$  (skip to SECTION F)

Health unit level 5	
Health unit level 4	
Health unit level 3	
Health unit level 2	
Private clinic/dispe	nsary

9. b) How many places did you visit when the under five child got mild fevers/malaria? ------

[Ask q 10 if the child was taken to different places when the child got mild fever/malaria]

10. Were you able to get all the prescribed medicines at the last treatment centre?

Yes =1 [Skip to q10c) No = 0 N/A= 998

10. b) If you did not get all the prescribed drugs, why?

[circle only one resp	onse]
lack of enough money	=1
prescribed drugs were not available in the clinic	=2
Prescribed drugs were not available in the community	=3
Others (specify)	

10. c) Has the child got well?

	[Circle only one answer]
recovered	=1
got severely sick	= 2
died	= 3
got disabled	=4
Other (specify) -	

## F. ROLES AND CAPACITY OF HOUSEHOLD MEMBERS TO HANDLE FEVERS /MALARIA IN UNDER FIVE CHILDREN

[Now I want to ask you some questions on the responsibilities undertaken by the family members in the management of fevers /malaria in this home]

1. Who stays with the under-five children most of the time during the day in this home?

-	[Tick all that apply; do not read out answers]
Mother	
Father	
Housemaid/ boy	
Grand mother	
Other relatives (adults)	
Fellow siblings	
Neighbours (adults)	
Neighbours (children)	
Teachers	
Not applicable	
Other specify)	

2. Who commonly identifies and reports fevers in under-five children in this household?

	[circle only one answer]
Mother	=01
Father	=02
Housemaid/ boy	=03
Grand mother	=04
Other relatives (adults)	=05
Fellow siblings	=06
Neighbours (adults)	=07
Neighbours (children)	=08
Teachers	=09
Not applicable	=10
Other specify	
3. What do the people who commonly identify the fevers in under five children (in the absence of the health manager of the home) do when they recognize a mild fever/malaria in the child?

[tick all that apply; do	not read out t	he answers at first]
--------------------------	----------------	----------------------

Wait for the health manager to return home	
Give a homapack	
Give a panadol or other pain killer	
Take child to clinic	
Give a herb	□ [indicate name of herb
Do nothing	
Not applicable	
Other (specify)	

[Let us refer to the most recent fever/malaria illness episode in an under five child which occurred when the health manager was out of home.]

4. How long did it take the mother/father (health care manager of the home) to know and to take action?

-----

b) amount of time taken between recognition of malaria in an under five by another person and the mother/father or health manager taking some action? ------ (hours)

c) What actions were taken by the health care manager as soon as she got to know that the child had fever?

[Ask question 5 to every respondent]

5. Does the housemaid, fellow siblings or other persons who stay with the under five children during the day know what to do when a fever strikes an under five child?

	[circle only one answer)
Yes	=1 (continue with Q6)
No	=0 (continue with Q 6)
Do not know	=997
N/A (there is no under five)	=998

6. What have you told them to do in case they observe a fever or other behavioral changes which you associate with fever/malaria in under-five children?

[tick all that apply; do not read	l out answer at first]
Call me from wherever I am	
Inform my neighbour(s)	
Inform other adults left in the home	
Bring the child to where I am working	
Take child to bed to sleep	
Give a pain killer	
Give an antimalarial / home pack	□ [Ask Q 7 &8 ]
Wait until I come back	
Nothing	
Give a lot of drinks/ fluids	
Do not know	
Not applicable	
Others (specify)	

[Ask Qs 7 & 8 to those respondents who instruct other household members to give the under five child an antimalarial]

7. What type of an antimalarial do you instruct to be given to the under five children in your absence?

	[Tick a	all mention	ed]	
Tablets				
Syrups				
Injectables				
Other (specify)				

8. What are the names of antimalarials which you commonly stock at home for the treatment of under five children? *[tick all mentioned; don't read out answers at first]* 

monea, aon rieaa oar anoners arginsig
Dawaquine
Camoquine
Chloroquine
Quinine
Primaquine

	Septrin		
	Fansider		
	Homapack		
	Do not know the names		
	Not applicable /do not keep drug	s at home	
	Other (specify)		
9.	What have you told them to do in case the	ey observe a severe co	ondition like convulsions in children aged five years and
	below?	Itick all that apply d	do not read out answers at first]
	Rush to nurse/ drug shop	<i>μικ</i> απ <i>μαι αρριγ</i> , α	
	Rush to health unit		
	Take to traditional healer		
	Sponge the sick person with tenid cloth		
	Give an antimalarial/ home pack		
	Give bitter herb		
	Call me/telephone me		Π
	Call father		Π
	Call neighbours		
	Other (specify)		
10.	How do you enable them to promptly take a	n action to treat fevers [tick all th	s/malaria in your absence? hat apply; do not read out answers]
	Leaves behind a pain killer like a panadol	plex it nom	
	Gives helper / siblings my telephone numbe	r to call me in case of	problems
	Tells them to call a neighbour in case of pro	blems in my absence	<b>F</b>
	I am always at home $(N/A)$	2	
	Nothing		
	Others (specify)		
11.	Yes No Has no schooling child (N/A)	=1 [ask q =0 (skip q =998 (skip q 12-15)	12] q 12-15)
12. Why	type of school is this?		
	[circle only one answ	ver]	
	Nursery day	=1	
	Nursery boarding	=2	
	Primary day Primary boarding	=3	
	Other (specify)	-+	
	ouler (speeny)		
13. What	was done to this child when she got fever/mal	laria while at school m	nost recently?
		[tick all that apply; d	do not read out answers]
	Given pain killers		
	Given antimalarials		
	Given both antimalarials and painkillers		
	Given some medicine but I don't know which	ch ones	
	Told to come back home		
	Given another child to accompany them bac	ck home	
	I aken to a health unit in the community		
	Nothing is done while at school		
	Others (specify)		
	Outers (specify)		
14. Were	you told what the school had done to the child	d who fell sick?	
1	Yes	a no ten ster.	=1
	No		=0
15. Has a	ny of your children ever got severely sick wh	ile at school?	
	Yes		=1
	No		=0 ( <i>skip Q16 and go to 18</i> )
			-
16. What	did the school do to your child whose fever g	got severe or worse wh	hile at school?

[tick all that apply; do not read out answers]

	Child was returned home		
	Child was given entimelarial treatment		
	Child was taken straight to a health uniT	· · · · · · · · · · · · · · · · · · ·	
	We were called to collect the child		
	Other specify		
17 b) Did	the child recover?		
1710) 210	Yes=1 No=0		
18.	Whose responsibility is it to do the follo	owing tasks related to the management of fevers/malaria in the hor	ne?
a) Admin	sistering entimelarials to shildren under fiv	2	
a) Aumin	Normally the mother	=1	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
b) Remin	ding the child /family members to take the	eir antimalarials?	
	Normally the mother	=1	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
c) Taking	g the sick children to health units for treatm	ent, (including first treatment, subsequent visits and review)?	
	Normally the mother	=1	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normany other people	=4	
	Not anybody s responsionity	_5	
d) Consu	lting other people in how to manage sever	e malaria in the under five children	
	Normally the mother	=1	
	Normally rather and father actually	=2	
	Normally other people	=3 $-4$	
	Not anybody's responsibility	=5	
-) D	an adapt to de acide the side abilit		
e) Decidi	Normally the mother	-1	
	Normally father	-1 -2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
o. t. 1.			
I) Lookin	Ig for financial resources to buy medicines Normally the mother	for the under five child $-1$	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
g) Prepar	ing food/fluids for the sick child		
<i>b</i> / 1	Normally the mother	=1	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
h) Tepid	sponging for the sick child		
	Normally the mother	=1	
	Normally father	=2	
	Normally mother and father equally	=3	
	Normally other people	=4	
	Not anybody's responsibility	=5	
i) Others	(specify)		

19. Are there people in this home who normally stay with under five children who cannot recognize fever in under five children?

Yes	=1	
No	=2	(skip to 20)
Not applicable	=998	(skip to 20)

20. If yes, which ones?

Mother	
Father	
Female siblings	
Male siblings	
Others (specify)	

21. Which of the tasks or responsibilities carried out in relation to managing fevers/malaria among under five children, do you know well or find easy to do? [Please tell me the ease with which you do the following tasks by indicating whether you do them very comfortably, quite comfortably, not comfortably, quite uncomfortably, and very uncomfortably].

a) Recognizing fever/malaria in the under five children?

		[circle only one answer]
	Very comfortable	=1
	Quite comfortable	=2
	Not comfortable	=3
	Quite uncomfortable	=4
	Very uncomfortable	=5
b)	Treating malaria in the first	24 hours of recognition of malaria?
	Very comfortable	=1
	Quite comfortable	=2
	Not comfortable	=3
	Quite uncomfortable	=4
	Very uncomfortable	=5
c)	Deciding where to seek for	help or take a severely sick person for treatment?
	Very comfortable	=1
	Quite comfortable	=2
	Not comfortable	=3
	Quite uncomfortable	=4
	Very uncomfortable	=5
d)	Choosing the right medicine	e to buy for a fever/malaria suffering under five child?
	Very comfortable	=1
	Quite comfortable	=2
	Not comfortable	=3
	Ouite uncomfortable	=4
	Very uncomfortable	=5
e)	Knowledge of the right dose	e of antimalarial to give an under five child?
-,	Very comfortable	=1
	Ouite comfortable	=2
	Not comfortable	=3
	Ouite uncomfortable	=4
	Very uncomfortable	=5
ſΙΑ	dministering antimalarial dru	as to an under five child who vomits?
-,	Very comfortable	=1
	Quite comfortable	=2
	Not comfortable	=3
	Quite uncomfortable	=4
	Very uncomfortable	=5
a) 1	Annaging resistant fevers /mal	laria ?
g) N	Vary comfortable	-1
	Quita comfortable	-1 -2
	Not comfortable	-2 -2
	Quite uncomfortable	
	Very uncomfortable	-4 -5
	very unconnortable	

h) Managing a very hot body/ progressing fevers/ illness?

Very comfortable Quite comfortable Not comfortable Quite uncomfortable	=1 =2 =4	=3
Very uncomfortable	=5	
i) Managing convulsions in the	under five a	child
Very comfortable		=1
Ouite comfortable		=2
Not comfortable		=3
Quite uncomfortable		=4
Very uncomfortable		=5
) Managing the side offects of a		- 111 14-1-1
j) Managing the side effects of an	numalariais	s like itching?
Ouite comfortable		=1
Quite connortable		=2
Not comfortable		=5
Quite uncomfortable		=4
very unconnortable		=5
k) Transporting a severely sick p	erson to he	alth units?
Very comfortable		=1
Quite comfortable		=2
Not comfortable		=3
Quite uncomfortable		=4
Very uncomfortable		=5
1) Patuning child to health unit fo	or more tre	atment /injections ?
Very comfortable	J more trea	
Quite comfortable	-2	-1
Not comfortable	-2	-3
Quite uncomfortable	-1	-5
Very uncomfortable	- <del>-</del>	
very unconnortable	-5	
m) Returning child to health uni	t for review	v as requested by health workers?
Very comfortable	=1	
Quite comfortable	=2	
Not comfortable	=3	

Not comfortable=3Quite uncomfortable=4Very uncomfortable=5

22. Which of these attitudes, knowledge and skills pertinent to the management of fevers /malaria do the health workers who commonly treat your children educate or talk to you about? State whether they do it all the time, sometimes, never. *[Fill the table below. Just tick one answer]* 

	All the time =1	Sometimes=2	Never=3
a) How to recognizing fever/malaria			
in the under five children			
b) The need to seek treatment for			
malaria promptly			
c) The need to take or give a full doze			
of the antimalarial			
d) How to use the antimalarial given			
e) The need to buy a full doze of the			
antimalarial			
f) To regard medicines in tablet form			
as equally effective as injections			
g) How to administer antimalarials to			
under five children who are vomiting			
h) Managing the negative effects of			
antimalarials like itching			
i) To avoid sharing antimalarials at			
home			
Managing progressing fevers/ illness			
The need to prevent malaria with an			
insecticide bed net			
The need to give a lot of fluids during			
sickness			

### G: EXPERIENCES WITH REFERRALS

[Ask these questions to respondents who had ever been referred to another level of care for treatment of complicated fevers/malaria.]

1. Have you or any family member ever been referred to a hospital, a heath level 4 or 3 for treatment of severe malaria in the last five years? (circle one answer)

Yes =1No = 0 (Skip the rest of this section to section E)

2. How old was the person who was referred to a higher level of care for treatment of severe fever/ malaria?

[tick all the answers given]		
Child under five years	$\Box$ [Continue with Q 3]	
Older child (6-18 years)		
An adult		
Adult pregnant woman		

[Ask the following questions to respondents whose under five children have ever been referred to another level of care]

3. If you were referred, did you go to a higher level of care as you were advised? Yes=1 [ask Q 4-14] No =0 [skip to Q. 15]

4. If yes, what type of health unit were you referred to?

Health unit level 5	
Health unit level 4	
Health unit level 3	
Health unit level 2	
Private clinic/dispensary	
Other (specify)	

5. Who referred you to the hospital?

Self	=01
Friends	=02
Relatives	=03
Drug shop	=04
Private clinic	=05
Health Centre 2	=06
Health unit level 3	=07
Health unit level 4	=08
NGO hospital	=09
Govt Hospital	=10
Other (specify)	=11

6. What was the reason for referring you to another level of care?

The child's condition had grown worse, (e.g. weakened,	
did not have enough blood, was vomiting,	
convulsing)	
The unit did not have blood to transfuse	
The unit did not have water/intravenous fluids	
The unit did not have the necessary drugs	
The unit could not diagnose the problem	
The trained staff were not in the clinic	
The drugs given earlier had failed to cure the person	
Other (specify)	

7. Did the person who sent you to another place write something regarding the medicines he/she had given you ?

Told me verbally to go to hospital	
Wrote something on a piece of paper /form	
Personally took myself to the hospital	
Rang somebody in the hospital to receive me	
Was taken by an ambulance	
Others (specify)	·····

8. If yes, how much time did it take you (from the time you were referred) to reach the hospital or health centre where you were referred? ------ (hours)

9. How long had the health unit which referred you kept the child before referral?-----(hours)

10. About what time did you reach the health unit who	ere you were referred?
Morning	=1
Afternoon	=2
Evening	=3
Early hours of the night before midnight	=4
Late night	=5
Other (specify)	=6
11. How long did it take you to access a health worker <i>(hours)</i>	r when you reported to the hospital or health centre where you were referred?
12. Were you admitted in the hospital?	
Yes =1	
No $= 0$ (skip to Q14)	

13. How long did you /child stay in the hospital? ----- (state in days)

14. Did the person recover?

[circle only one answer]			
Recovered	=1		
Died	= 2		
Recovered but got disabled	= 3		
Others (specify)			

[Ask these questions to people who were referred to a hospital or higher level of care but declined to go.]

15. Why did you not go to a higher level of care where you had been referred?

No money for transport No money to meet admission cos The place I was referred to was w I had lost my relatives in the hos I did not know anybody in the ho I had very young children whom I had nobody to accompany me a My child was already in very bac would have died before reaching	sts such as food in the referred to unit very far from me pital I was being referred to spital to help me access the doctors I had nobody to leave with und care for me in the hospital d condition and I knew he /she	
My spouse was not around		
That hospital does not care about	emergencies	
That hospital has no drugs and o	ther ancillary	
I would still be asked to buy all t	he drugs and other supplies	
Others (specify)		
<ul> <li>16. What alternative action did you take after Went to a traditional healer Used herbs</li> <li>Continued with the same health of Prayed</li> <li>Went to a nearby private clinic Went to a nearby NGO unit Others (specify)</li> </ul>	er declining to take up the referral?	
18. Did the sick person recover?	(circle only one answer)	
He/she recovered Died Recovered but got disabled Other (specify)	=1 =2 =3 =4	

## H. EXPERIENCES WITH HEALTH CARE SYSTEMS IN THE MANAGEMENT OF FEVERS/ MALARIA

[Now I want to ask some questions regarding the sources of help and your experience with them]

1. What is your preferred source of treatment of <u>mild /uncomplicated</u> malaria for children under five years? *[please circle only one answer]* 

Home	=1	
Public health unit	=2	
Private health unit	=3	
NGO health unit	$=\!4$	
Drug shop	=5	
Retail shop	=6	
Traditional healer	=7	
Other (specify)		
2. Why?		

3. What is your preferred source of treatment for severe malaria in under five children?

	[please circle only one answer]
Home	=1
Public health unit	=2
Private health unit	=3
NGO health unit	=4
Drug shop	=5
Retail shop	=6
Traditional healer	=7
Other (specify)	

4. Why? -----

5. If there is a difference in the preferred sources of help for treatment of mild and severe for the under five children, ask Why.

------

6. What community health resource persons do you have in this community?

\_\_\_\_\_

2 I	[May tick more than one answer.	May prompt answers]
Community health workers		
Antimalarial drug distributors/HO	MAPAK	
Traditional birth attendants		
Herbalists		
Drug shops		
Private for profit clinics		
Others (specify)		

7. What is your opinion on each of these statements relating to the behaviour of health care systems in the management of fevers/malaria in this community? [tick in appropriate cell of the table]

Statement	Strongly	agree	Agree=4	Sometimes=	Disagree=2	Strongly	Do	not
	=5			3		disagree =1	know=0	
1. Private clinics are the first sources of care								
consulted when our under five children get								
fever/malaria								
2. Govt health units in this community quickly								
attend to severely sick children suffering from								
fevers/malaria								
3. NGO health units quickly attend to severely								
sick children suffering from fevers/malaria								
4.Health workers in public units (govt) are								
available 24 hours to attend to the sick children								
5. Medicines for the treatment of mild fevers in								
under fives are always available at the govt								
health units								
6. Govt health units always have medicines for								
the treatment of severe fevers/malaria in the								
under fives								

Statement	Strongly agree	Agree=4	Sometimes=	Disagree=2	Strongly	Do not
7 NCO write always have all the medicines for	=5		3		disagree =1	know=0
7. NGO units always have all the medicines for						
children						
8.Govt health units are the best places to take						
severely sick under fives because they have drips						
and blood						
9. It is useless taking a sick child to a health unit						
10 Private clinics quickly refer severe						
/complicated cases of fevers/malaria to bigger						
health units						
11. Private clinics cannot handle severe cases of						
malaria because they operate a few hours of the						
day						
12.Drug shops/private clinics commonly give half						
13 Treatment of fever/malaria among the under						
five children in private clinics is guite expensive						
in this community						
14. Treatment of malaria in NGO health units is						
reasonably charged						
15. The cost of antimalarials is affordable by the						
majority of people in this community						
to a health unit which cannot test blood for						
malaria						
17.Staff who give medicines in health units						
always tell us how to administer antimalarials to						
under five children						
18. Health workers always write instructions for						
us regarding now to use antimalariais in under						
19. Health workers in public units always tell me						
what they have found during their examination						
of the fever/ malaria suffering child						
20. Health workers in <u>public</u> health units always						
advise me how to prevent getting malaria in the						
under five children						
advise me how to prevent an under five child						
from getting fever/malaria						
22. Health workers always give me instructions						
how to feed a person suffering or recovering						
from malaria						
23. Health workers always talk about the						
regimens and the need to comply						
24. I always buy or obtain a full dose of						
antimalarials whenever an under five child gets						
fevers/malaria						
25. My under five child always completes the						
malaria treatment dose given for the treatment						
of malaria						
complete a malaria treatment dose						
27. Experiences of side effects make me stop		1				
giving my child a full treatment of antimalarials						
28. Treatment with injections enable my child						
complete the full treatment						
29. Prescriptions involving a number of injections						
where I have to take the child to the health unit						
children do not complete malaria treatment						

Statement	Strongly agree	Agree=4	Sometimes=	Disagree=2	Strongly	Do not
	=5		3		disagree =1	know=0
30. Community home pack distributors are doing						
a good job in the community						
31.Home packs are always available in the						
community						
32. Community drug distributors regularly						
sensitize us about malaria prevention						
33.Community leaders are doing a lot to prevent						
malaria in this village						
34. The home pack for under five can effectively						
be used with older children and adults						
35. Delayed treatment of mild fevers may result						
in severe malaria						
36. Non completion of malaria doses may result						
in resistance to antimalarials in the future						
37. To avoid spending much money on malaria						
treatment, a household needs to cautiously						
allocate money to prevention activities						
38. Our village and parish leaders regularly						
mobilize us for malaria control and prevention						
activities						
39. Insecticide bed nets are easily available in						
this community						
40. Re-treatment services for insecticide treated						
nets are regularly organised by the sub-county to						
retreat our bed nets.						

### I. PREVENTIVE ACTIVITIES AGAINST MALARIA IN THE HOME AND COMMUNITY

[Now let us talk about prevention of malaria in this home]

1. Do you do anything to prevent yourself or the family members against contracting malaria?

Yes	= 1	(ask q2)
No	=0	(still ask q 2)

2. What methods does this household use to prevent malaria transmission?

[Tick all that apply. Do no read out the answers first]

Uses insecticide bed-nets	
Uses coils	
Sprays house with insecticide	
Closes windows early in the evenings	
Uses non-insecticide bed-nets	
Keeps the environment frees of floating water	
Keeps the environment free of tall grass /bush	
Swallows some antimalarial doses regularly	
Smokes cow dung	
Pouring used motor oils on stagnant water	
House ventilators have screens	
Others (specify)	

[Ask this question to respondents who use bed-nets]

3. How many people sleep under a bed net in this household? ------

4. How many under five children sleep in a bednet in this home (singularly or shared?	
a) how many 'biological' under five sleep under a bed net?	
b) how many 'related' underfive sleep under a bed net?	
c) how many orphans under fives sleep under a bed net?	

5. How many under fives do not sleep under an insecticide bed-net? ------

6. Did --- sleep in a bed net last night? Yes= 1 No=2

7. Why do the under five children do not sleep under an insecticide bed-net? [tick all that apply; do not read out answers at first]

There is not many mosquitoes in this hou	se/area
Did not know they had to sleep under a b	ed net
Too many children	
Not proper sleeping beds	
Got torn	
Fears the chemical may do harm my child	iren
Uses other methods Children do not brooth well	
Children get very hot	
Bed nets have the risk of burning	
The under fives are visitors	
Others (specify)	
8. How many adults sleep in a bed-net ?	
9. Which adults sleep under a bed net? :	
Household head male	
Household head remain	
Spouse of male head	
Spouse of female head	
Biological children of household head	
Other adults (specify)	
10. How many bed nets exist in this home?	
11. How old is the oldest bed-net in this home?	
12. How many times have you ever retreated the olde 13. How long ago did you retreat your bed nets?	est net? (total time)
14. Which of the practices which you adopted in recommended by government or the district health de	the treatment and prevention of malaria among the under five children were epartment?
14. Which of the practices which you adopted in recommended by government or the district health de <i>[tick ali</i> ]	the treatment and prevention of malaria among the under five children were epartment ? ! the answers given, do not read out responses at first)
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Yes =1 No =0 (*skip to q3*)

2. How many times have you had health education on malaria in the last 3 months? ------

3. What is the source(s) of information on malaria in this home?

		[tick all that apply ;may prompt answers]
	None	
	Radios	
	Newspapers	
	Health unit workers	
	Health committee members	
	Community health workers	
	Antenatal clinics	
	Traditional birth attendant	
	Others (specify)	
4. What is	your most preferred source of inf	ormation on malaria? and Why?
	Radios	=1
	Newspapers	= 2
	Health unit workers	=3
	Health committee members	=4
	Community health workers	=5
	Antenatal clinics	=6
	Traditional birth attendant	=7
	Others (specify)	

5. What is the reason for your preference?

# ------

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6. What do your source of information commonly talk about regarding malaria?

Malaria kills	
That under five children are the worst affected by malaria	
That malaria has bad effects on pregnancy and the newly born baby	
To promptly seek treatment immediately the under five child gets fever	
To always give an antimalarial to under five children with fever	
To always use an effective antimalarial as recommended by govt.	
To use insecticide bed net to protect children against malaria	
To make sure that pregnant women promptly get treated for malaria	
Do not know/ cannot remember	
Others (specify)	

### K. RESOURCES FOR MALARIA CONTROL IN HOMES

[Now I want to ask you some questions on financial resources and malaria control in this home]

1. Have you ever had a situation where your under five child got fever/malaria but you did not have money to buy medicine or take him/her to a health unit?

[Circle only o	one answer]
Happens many times	= 1
Has happened only once	= 2
Has never happened	= 3
Cannot remember	=4
Not applicable /children do not fall sick	=998

2. How did you handle situations of limited resources the last time your child got severe malaria?

[tick all that apply; do not read out answers at first]

Borrowed money from friends / relatives Obtained financial support from relatives Used government free services Sold an animal to get the child treatment	
Sold a food crop to meet costs	
Sold domestic items e.g. radio, personal clothing	
Bought a dose of drugs which fitted into	
the money I had	
Obtained drugs on credit	
Used herbs	
Braved	
Pid nothing	
Others (specify)	 

3. Do you ever put money aside to meet crises like fever/malaria attacks in your young children? =1 (skip q4) Yes No =0 (ask q4) 4. If no, why? [tick all that apply] Poverty (consumes every thing) Fevers /malaria illnesses are too frequent Malaria not a big problem in this home My children are protected by bednets How if I do not fall sick for the time period covered by the premium? Saving for sickness makes one fall sick Others (specify) ------5. Do you have any community based insurance scheme or any mutual support group to help you in times of child sickness? Yes=1 (indicate name of scheme) -----No =0 (*skip q 7*)) If yes, are you a member to it? 6. (circle only one answer) Yes =1 (skip to q 8) No =0 (ask a 7) 7. If no, why? [Tick all responses mentioned; do not read out answers] Ignorance of such schemes Lack of funding Bad experience with dishonesty organizations Others (specify) ------8. If yes, how has the saving scheme helped you to fight malaria? [tick all that apply; do not read out answers] Obtains medical care for malaria promptly Do not worry about where to get money for treatment Able to get full dose of the prescribed antimalarials and other drugs Able to treat all family members Other (specify) ------[Ask Q. 9 to people who do not belong to a community insurance scheme] 9. If there was a community based health insurance scheme formed in this community, would you join one? [circle only one answer] =0No Yes =1It depends on the benefits =2 It depends on the required contributions =3It depends on the benefits and contributions demanded =4 Do not know =5 Others (specify) ------[Ask Q10-13 to everybody] 10. What are the major constraints or problems experienced in fighting malaria in this home? [Tick all mentioned; do not read out answers at first] Difficulty to get money to buy bednets Difficulty to get money to buy drugs Reoccurring fevers in the underfive children Fevers not responding to drugs Many excavations filled with water which breed mosquitoes Community has many marshes/swamps which breed mosquitoes Poorly constructed house which helps mosquitoes to enter and bite us Do not have any constraints Do not know Others (specify) -----

11. What should be done to reduce sicknesses and/or deaths of under five children from malaria in this home?

	[Tick all responses mentioned; do not read out answers]
Avail us with bednets at subsidized prices	
Provide us with free bednets	
Improve transport for the sick	
Improve roads in the community	
Others (specify)	

12. What can be done to reduce sicknesses and/or deaths under five children from malaria in this community? [Tick all responses mentioned; do not read out answers]

Protect water sources	
Sensitize people on the spread of malaria	
Encourage people to drink boiled water	
Sensitize people to clean the bushes around their houses	
Reduce breeding of mosquitoes	
Equip health units with antimalarials	
Others (specify)	 

13.Do you have any questions to ask me?

### THANK YOU VERY FOR YOUR TIME AND ANSWERS