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WHAT ROLE CAN THE PRIVATE SECTOR PLAY IN SCALING UP AND SUSTAINING INTEGRATED MALARIA CONTROL PROGRAMS?

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ACRONYMS

ABE	Advanced Bio Extracts
ACT	Artemisinin-based combination therapy
ADDO	Accredited drug dispensing outlets
AMFm	Affordable Medicines Facility – malaria
BCC	Behavior change communication
CFW Shops	Child and Family Wellness Shops
DDT	Dichloro-diphenyl-trichloroethane
DHS	Demographic household survey
EPI	Extended program on immunization
FAO	United Nations Food and Agriculture Organization
GBC	Global Business Coalition on HIV/AIDS, TB and Malaria
HIV/AIDS	Human immunodeficiency virus/Acquired immunodeficiency syndrome
HMM	Home-based management of malaria
IEC	Information education communication
IFC	International Finance Corporation
IRS	Indoor residual spraying
IPTp	Intermittent preventive treatment for pregnant women
ITN	Insecticide-treated nets
IVCC	Innovative Vector Control Consortium
LLIN	Long-lasting insecticidal nets
MDGs	Millennium Development Goals
MIS	Malaria Indicator Survey
SWOT	Strengths Weaknesses Opportunities Threats
TB	Tuberculosis
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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EXECUTIVE SUMMARY

Malaria is well recognized as a threat to social and economic stability causing more than 1 million deaths each year in sub-Saharan Africa. In response, the international donor community and partner governments in Africa have provided unprecedented funding for malaria control interventions. Aggressive targets have been set for coverage of three core interventions by 2010, but many countries are still far from meeting those targets. As focus on these short-term goals intensifies, there has been increasing reliance on mass distribution of free commodities and services through public health channels. This approach fails to harness crucial resources available through the private sector, and leaves countries vulnerable to future fall-off in external funding.

This report demonstrates that the private sector is active in the fight against malaria, and has comparative advantages in provision of the commodities and services needed to prevent and treat the disease. For the past few years, however, a catch up strategy of free distribution of nets and drugs through the public health system has marginalized the private sector, compromising long-term sustainability for coverage programs. This saves lives now, but may do so at the expense of saving lives in the future, a choice we need not and should not make. Against a staggering need is the reality of a global recession and high risk of shifting donor priorities to other pressing needs. The current path of donor-driven subsidies and reliance on public sector channels cannot get us where we need to go. A re-engagement of the private sector is urgently needed to optimize private sector strengths, tap new resources, and make better use of existing channels to expand access to malaria interventions and reduce the financial burden on governments.

The purpose of this report is to bring attention to the advantages offered by the private sector in meeting and sustaining the Millennium Development Goals for malaria, and to make the case for a more expansive and integrated private-public approach to this critical public health challenge. The USAID/Africa Regional Bureau commissioned this analysis as part of its long-standing leadership in leveraging the private sector to achieve public health goals. The objectives are to summarize evidence and highlight private sector characteristics that can enhance the impact of public sector campaigns, to facilitate more synergistic responses to the malaria crisis. Strategies are presented on ways to more deeply engage private resources at the global, national, and community level.

The relative strengths, weaknesses, threats and opportunities for the public and private sector provision of malaria control strategies were examined for three of the four core interventions recommended by the World Health Organization (WHO): distribution of insecticide-treated nets (ITNs), the treatment of malaria cases with Artemisinin-based Combination Therapy (ACTs), and indoor residual spraying (IRS). Intermittent preventive treatment in pregnant women (IPTp), which is strongly linked to antenatal clinics and offers more limited opportunity for private sector, is not included in this analysis. For each, the government's stewardship role is critical, centered on steering policy, financing the poor, and ensuring quality standards. Underutilized private sector capabilities include the reach and efficiency of existing local capacity in distribution, transport and sales channels for everyday products and services, needed to expand access and advocacy for life-saving malaria responses.

ITNs:

Sleeping under a mosquito net treated with an insecticide is a proven and cost-effective way to prevent malaria. Mass net distribution campaigns have been launched to achieve high and rapid coverage in malaria endemic areas, especially for the most vulnerable groups, pregnant women and children under five. For expediency, free nets are provided through the public health system, in many cases integrated in existing child survival campaigns such as measles vaccines. In 2008, based on evidence that achieving high coverage among the entire population can provide protection beyond those sleeping under ITNs, WHO adopted universal coverage targeting the entire population for ITNs. In addition to providing community level protection. This “free for all” approach addresses government responsibility for equity, to ensure that nets reach the neediest. In addition, most countries have programs for distribution of free nets during routine antenatal and/or immunization services as a means of keeping up coverage, and which can provide synergistic benefits for the highest risk groups following mass distribution campaigns.

Thriving market-based delivery systems for nets are also operational in most countries, and could and should be nurtured to complement the public campaigns and routine public sector distribution. Commercial outlets, including widely distributed shops, mobile markets, kiosks, and hawkers, offer access to remote areas underserved by government facilities. Competition and profit motive ensure cost management and product diversity to address wide-ranging consumer preferences for a variety of net sizes, colors, quality, and price, contributing to demand and use. More effective segmentation of the market would preserve scarce public resources to those with no ability to pay while leveraging private sector strengths in demand creation, marketing and product innovation. The threat in relying on public sector “catch-up” strategies that survive only through public tenders for nets is that sustainable consumer markets will be permanently disrupted, thwarting the possibility for long-term “keep-up” strategies.

ACTs:

Due to growing resistance to inexpensive and widely available monotherapies such as chloroquine and sulfadoxine-pyrimethamine, ACTs were developed and introduced as a first line treatment for uncomplicated malaria. Widespread use of ACTs offers the benefit of not only improving cure rates, but also directly decreasing malaria transmission. To address cost as a barrier, a new global subsidy is being launched in selected countries through the Global Fund’s Affordable Medicines Facility – malaria (AMFm) to make ACTs widely available through all channels at affordable prices. A key factor limiting access to treatment through public health systems is the fact that the majority of Africans seek treatment for malaria symptoms from the private sector. Because between 50-80% of malaria cases are treated in the home in many countries in Sub Saharan Africa, improving the quality of home-based or community-based management of malaria (HMM) is a priority. The challenge for malaria programmers is how to improve delivery and targeting of ACTs.

Research indicates that commercial retail outlets are the first choice for many patients seeking malaria treatment due to reasons including speed of service, convenience of operating times, better drug availability, greater confidentiality, and flexible payment terms. There are also features of the private sector that can be detrimental. For example private sector quality control is a serious concern, with evidence of widespread availability of counterfeit drugs, expired drugs, and inadequate dosages and follow-up. The private sector

is also a major source of ineffective antimalarials, e.g. chloroquine, and of artesunate monotherapies. If unaddressed, these activities increase the risk of resistance to efficacious ACTs. The push toward HMM or community case management (CCM) of uncomplicated malaria and the overwhelming reliance on informal and formal private sector providers for treatment requires more aggressive collaboration and training of those outside public health facilities. Promising approaches to improving private sector treatment includes social franchises to build incentives for service quality, vendor-to-vendor training and supervision programs to provide needed support, and targeting mechanisms such as vouchers to subsidize ACT costs through existing retail channels.

IRS:

Indoor residual spraying is the application of long-acting chemical insecticides on the walls and roofs of all houses and domestic shelters in a given area, which has been shown to control transmission cost effectively as long as more than 80% of the premises within targeted communities are treated. The spraying of households to control malaria is seen as a public good, because community members benefit whether or not individual inhabitants choose to spray their dwellings, creating a “free rider” problem for financing. The timing and coverage of IRS must be carefully calculated based upon analysis of local epidemiological data, transmission patterns, vector behavior, and the pesticides used. Environmental management of DDT, the most cost-effective and long-lasting of pesticide alternatives for IRS, must also be subject to regulations on storage, transport and disposal to insure no leakage outside public health use.

The Roll Back Malaria Partnership has acknowledged that not all countries can support effective IRS operations which require significant organization, infrastructure, information systems, logistics, personnel, and environment compliance skills. There are major challenges posed for cost-effective use of IRS by governments with weak logistical capabilities and management infrastructure. Rational outsourcing of public IRS operations will create efficiencies, leveraging private sector competencies and resources including strategic planning, human resources training and management, research and evaluation, and marketing and community mobilization. This is particularly important in environments prone to severe epidemics for which IRS has been demonstrated to be most cost-effective. Where there is inadequate public capacity, strong private sector logistical experience and commitment, countries should facilitate execution of national IRS campaigns through private contractors, to improve cost effectiveness and reduce public sector burden, conditioned upon effective regulatory oversight. In a number of countries, there is recognition at the highest political levels that the private sector can be a vital partner in IRS campaigns.

Bi-lateral and multi-lateral donors should encourage development of “catch up/keep up” strategies with technical and financial sustainability supported by public/private partnerships. Funding should be available for National Malaria Control Programs to increase engagement and efficiency of the private sector through programming opportunities such as expansion of risk-pooling arrangements to finance private healthcare providers, and models for malaria-related long-term business partnerships where donors, governments, commercial suppliers, private providers and NGOs interact on a continuous basis.

The malaria community should champion national initiatives to develop private sector investment in health. Such investment might include training programs offering business development capabilities, access to patient capital, and basic business planning and operational support.

National situational analyses should be undertaken to assess the potential for partnership with the private sector in sustainable malaria prevention and treatment. A private market assessment of the total market should include data on private sector supply, and a framework mapping private sector gaps and opportunities based on market maturity indicators, legal and regulatory policies for malaria control products and services, and socio-economic factors.

New regional efforts should be developed with a focus on best practices for engaging the private sector in malaria control. Regional dialogues through workshops and online forums will facilitate collaborative responses to shared challenges, promote skill-building, and provide a platform to bring market actors together from different business backgrounds such as media, transportation, pharmaceuticals, or consulting to create new cross-border alliances.

The malaria crisis in Africa has generated a crisis response, but the emergency is long-standing and deeply entrenched. Benefits of broader private sector engagement through *integrated* malaria control programs include increased utilization through increased choice, better reach in rural areas, capacity-building in planning and management, access to scarce human and capital resources, innovation through entrepreneurial drive, and the ability to stretch donor funding. This report recommends a number of proven approaches for successful joint public-private activities that increase the likelihood of sustainable and cost-effective solutions. These public-private interactions require sharing of information, risks, and accountability. Both government and private sector actors must come together, with support from the broader malaria community, to have meaningful dialogue, build trust, capitalize on their complementary strengths, and create a common agenda to reduce malaria's burden. The failure to better leverage private sector resources in the fight against malaria is one that Africa and world cannot afford.

I. INTRODUCTION, BACKGROUND AND OBJECTIVES

I.1 INTRODUCTION

The burden of malaria that exists today is unacceptably high, with 250 million clinical cases occurring every year. Sub-Saharan Africa bears the greatest burden, where 90% of the nearly 1 million malarial deaths occur each year, most of them children under five. Since the launch of Roll Back Malaria in 1998, there have been considerable advances in the prevention and treatment of malaria, and ambitious targets have been set to achieve universal coverage of key interventions by 2010. Proven cost-effective interventions include use of insecticide-treated nets (ITNs), indoor residual spraying (IRS), treatment with Artemisinin-based Combination Therapy (ACTs) and Intermittent Preventive Treatment in pregnant women (IPTp).

Over the past several years, progress has been substantial, as massive scale-up of malaria control programs funded through international donors such as the Global Fund, U.S. President's Malaria Initiative (PMI), and the World Bank's Booster Program have driven down transmission and infection in several priority countries (WHO, 2008). The adoption of short-term targets, however, has resulted in a disproportionate focus on mass procurement and distribution of free commodities and the provision of free services through public health clinics.

Even with this massive scale-up of free supplies and services, life-saving measures continue to be out of reach for millions who need them, due to gaps in distribution points, disaffection from public health facilities, and supply chain problems (WHO World Malaria Report, 2008). More effective uptake of malaria prevention and treatment commodities is also critical, to close the gap between access and use through more client-centered communications and product options (Hanson, 2004). Programs aiming to achieve rapid universal coverage are failing to catalyze market-based solutions to complement subsidized interventions. This is not a debate about the false dichotomy between a philanthropic approach or a market approach to controlling malaria, rather it is a recognition that the two approaches, working synergistically, bring necessary and complementary capabilities to address malaria's burden. Given the limitations on public health budgets and the reality of out-of-pocket spending on malaria in the private sector, a more holistic approach is needed to create more rational use of resources within the total health system.

“How do we move from that life-saving, almost a disaster response implementation program of commodity dispersement, into a sophisticated health development program?” Tim Ziemer, US Malaria Coordinator, April 2009 Malaria Panel

A central question in malaria control is how to proceed from blanket coverage campaigns for urgently needed nets, medicines, and vector control to a continuous and sustainable delivery mode. This paper will present a case and framework for a more systematic approach to partnering with the private sector as a means of increasing efficient and cost-effective achievement of short-term malaria targets, and sustaining these gains over time. Key elements include exploiting existing private sector infrastructure

and human resources, strengthening the policy environment for private sector engagement, addressing weaknesses in private sector quality through training and monitoring, and capitalizing on the entrepreneurship of local businesses to roll back malaria on the African continent.

Several key principles inform this framework:

Private sector involvement is not all or nothing: The private sector is involved in malaria control today, but not in a way that fully leverages its strengths, extends the reach of public programs, and builds toward a future less dependent on international donors. The goal is to develop programs that continue past finite donor funding cycles.

Local context will determine which combination of interventions are the most effective and appropriate. Outcomes will be influenced by variations in quality of the local public health system, the specific nature of malaria transmission in the country, socioeconomic and cultural factors, and the extent of private sector activity.

Consumer needs are diverse and require a multiplicity of solutions: In light of limited resources to address multiple public health problems, it is essential that malaria interventions be targeted to specific groups based upon their health vulnerabilities, socioeconomic circumstances, access, preferences, and current practices.

The time to expand the private sector role is now, during this period of unprecedented resources and funding levels for malaria programs. As we move closer to the 2015 target year of the Millennium Development Goals (MDG), it is essential to integrate sustainable enterprises into existing programs. Funding guidelines are needed to balance the mix of free fixes with new commercial approaches that serve long-term needs.

Government stewardship is critical to private sector opportunities and provision of quality services. Public sector coordination, policy setting, oversight, and enforcement are necessary to nurture and expand private sector role in malaria control.

The private sector already serves more than 40 percent of the people in the lowest economic quintile in many African countries. With the right investments, it could do even more (Ghatak et al., 2008).

1.2 BACKGROUND

Malaria is well recognized as a health and economic threat. It is a major cause of poverty and underdevelopment in Africa, accounting for approximately 40% of its public health expenditures (WHO World Malaria Report, 2008). One out of 20 children in Africa dies of malaria before the age of five. In response to this deadly disease, the international donor community and partner governments in Africa have responded with unprecedented funding to bring malaria under control. In the past decade, total global spending on malaria prevention and treatment has gone from less than US\$100 million to more than \$1 billion (Grabowsky, 2008). Commitment is also reflected in adoption of targets, such as those in the 2000 Abuja Declaration by African leaders, to halve malaria mortality by 2010 and the 2005 World Health Assembly target of more than 80% coverage of key interventions.

Current malaria aid is focused primarily on tangible outcomes that can be achieved in three to five years, and do not adequately address longer-term systemic challenges to enhance local capacity. In most African countries, the private sector plays a more significant role in healthcare than the government, with the poorer segments of the population making extensive use of the private sector (Marek et al., 2005).

To truly have an impact on the malaria epidemic in sub-Saharan Africa, a strategy is needed to more deeply engage private resources at the global, national, and community level (ole-MoiYoi, 2009). Existing distribution points for everyday products including shops, cafes, drug depots, mobile vendors, and local markets can become new points of access and advocacy for life-saving malaria products. A more formally integrated and regulated private sector is needed to help close the gap in Africa between the sustained efforts needed to reduce malaria's burden and the resources available for the long-term.

The USAID/Africa Regional Bureau commissioned this analysis as part of its long-standing leadership in leveraging the private sector to achieve public health goals. The purpose of this report is to bring attention to the advantages offered by the private sector in meeting and sustaining the Millennium Development Goals (MDG) for malaria, and to make the case for a more expansive and integrated private-public approach to this critical public health challenge.

1.3 OBJECTIVES AND SCOPE

The objectives of this paper are to summarize evidence and highlight private sector characteristics that can enhance the impact of public sector campaigns, to facilitate more synergistic responses to the malaria crisis. Particularly with regard to the requirements of efficient distribution of quality products and services on a mass scale, the private sector offers reach, economic efficiencies, and diversity of models for reducing barriers to access. This paper is intended for public health policymakers, malaria control program managers, donors, development agencies, development banks, academic and research organizations, and other private and public sector stakeholders involved in scaling up malaria control programs.

This report is divided into five sections. Section 1 covers the introduction, background and objectives. Section 2 summarizes the current roles of the public and private sectors in malaria control. Section 3 examines the comparative strengths, weaknesses, opportunities and threats of the two sectors. Section 4 provides recommendations for ways to better engage private sector resources to achieve malaria control objectives. Section 5 is the conclusion.

This paper focuses on the three core control strategies for meeting the MDG targets: diagnosis and treatment of malaria cases with effective medicines, distribution of insecticide-treated nets, and indoor residual spraying. Because Africa experiences 90% of malaria deaths, case examples and recommendations are focused on the African continent.

ITNs/LLINs: Sleeping under a mosquito net treated with an insecticide is a proven and cost-effective way to prevent malaria. The lifesaving value of treated nets has been firmly established, with the potential to reduce child death from malaria by half. (WHO Position Statement, 2008; Lengeler, 2004). Pregnant women and children benefit the most from the use of ITNs. Nets dipped in pyrethroid-based insecticides are effective for up to 12 months, after which the nets must be retreated. More recently, companies have been producing long-lasting insecticidal nets (LLINs), a factory-treated mosquito net made with netting material that has insecticide incorporated within or bound around the fibers. LLINs may

provide protection for up to 5 years without retreatment, but come at a higher cost than nets than can be treated in the home. The World Health Organization (WHO) has shifted its policy to recommend that malaria control programs distribute only long-lasting insecticidal nets (LLINs) (WHO Position Statement, 2008).

ACTs: Over the past decade a new group of highly efficacious anti-malarials, the artemisinin compounds, have been deployed on an increasingly large scale. To reduce pressure toward resistance, various artemisinin derivatives have each been combined with another anti-malarial; the resulting groups of antimalarials are called artemisinin-based combination therapies (ACTs). These compounds produce a very rapid therapeutic response, are well tolerated by patients and have the potential to reduce transmission of malaria. ACTs were introduced as evidence of resistance to inexpensive monotherapies, such as chloroquine and sulfadoxine-pyrimethamine (SP), developed rapidly throughout Africa. WHO recommends ACTs as a first line treatment against malaria, and calls for presumptive treatment of febrile children under five to reduce risk of death. (WHO Guidelines, 2006.) When used correctly, ACTs are nearly 95% effective in curing malaria (Roll Back Malaria Partnership, 2006).

IRS: Indoor residual spraying (IRS) is the application of long-acting chemical insecticides on the walls and roofs of all houses and domestic shelters in a given area, in order to kill the adult vector mosquitoes that rest on these surfaces after feeding. Indoor residual spraying is one of the primary control interventions recommended by WHO for reducing and interrupting malaria transmission. It has been shown to control transmission and provide community protection as long as more than 80% of the premises within targeted communities are treated. PMI has launched an IRS effort to support use of IRS in African countries with histories of IRS, and where appropriate to introduce IRS in new countries.

1.3.1 ADDITIONAL PRIVATE SECTOR ROLES NOT ADDRESSED IN THIS PAPER

The focus of this paper is on untapped opportunities to better harness and integrate private sector resources for proven control interventions through mutually beneficial partnerships that make both public health and business sense. Some examples and recommendations reference the role of non-profit organizations, but the primary focus is on the potential in the local for-profit sector to play a more effective role in anti-malaria efforts. Recent attention triggered by the Gates Foundation has shifted focus to longer term objectives of elimination and eradication but will not be addressed here. This paper will also not address a number of other malaria prevention and control tools outside the scope of this review including: intermittent preventive treatment for pregnant women (IPTp), provision of rapid diagnostic tests or microscopy laboratory services, environmental interventions to eliminate breeding grounds for mosquito carriers, campaigns that integrate malaria control with other public health challenges, and development of vaccines and control tools and technologies. The latter area has enjoyed widespread success of Public Private Partnerships, recognized as an effective method to subsidize costs of research and development such as the Medicines for Malaria Venture.

2. EXAMINING CURRENT ROLES OF THE PRIVATE AND PUBLIC SECTORS IN MALARIA CONTROL CAMPAIGNS

2.1 DEFINITION OF THE PRIVATE SECTOR:

The private sector covers a broad and diverse set of entities including NGOs, community based organizations, faith-based entities, formal (licensed) and informal providers. Private sector organizations include both those involved in the provision of products (clinics, hospitals, manufacturers, wholesalers, distributors, and retailers) and services (marketing, training, communications). Of particular interest for this paper are the broad spectrum of shops, drug depots, kiosks, mobile vendors, village markets and other outlets where consumers purchase routine items for daily use. The private sector also includes private companies who provide health services to their employees and communities, and finance and credit institutions.

2.2 OVERVIEW OF GLOBAL STAKEHOLDERS LEADING THE MALARIA CONTROL AGENDA:

RBM: Roll Back Malaria Partnership (RBM), spearheaded by the United Nations, was launched in 1998 as an effort to provide a coordinated global response to the disease, with more than 500 partners working together to mobilize resources and forge consensus. The RBM Global Malaria Action Plan established targets in 2008 of universal coverage by 2010 for all populations at risk with appropriate interventions including ACTs, LLINs, and IRS.

Global Fund to Fight HIV/AIDS, TB and Malaria: The Global Fund was created in 2002 as a financing institution to support large-scale prevention, treatment and care programs. Since its launch, it has dispensed more than \$1.4 billion to countries in Sub-Saharan Africa in grants for malaria control. The Global Fund currently provides two-thirds of all international financing for malaria.

President's Malaria Initiative: In 2005, the US Government initiated the President's Malaria Initiative (PMI), a historic 5-year, \$1.2 billion commitment, under leadership of USAID. PMI set targets of reducing malaria-related deaths by 50% in 15 countries through expanding coverage to pregnant women and children, and to achieve 85% coverage with all interventions.

World Bank: The World Bank issued its Booster Program for Malaria Control in Africa in 2005 which targeted \$500 million in bank resources to support the rapid scale-up of proven malaria interventions in 20 countries through national malaria control programs.

2.3 SCALING UP FOR IMPACT

2.3.1 EMPHASIS ON PUBLIC HEALTH CHANNELS

Spurred by the ambitious targets set by these global institutions and unprecedented funding and support, national programs for large-scale coverage of IRS, ITNs and ACTs using public health channels have shown convincing reduction in malaria-related morbidity and mortality in the past several years. Dramatic reductions of over 50% in malaria cases and deaths have been reported in Rwanda and Ethiopia following widespread distribution of ACTs and LLINs (WHO, 2008). Surveys in Ethiopia, Niger, Sao Tome and Principe and Zambia showed high ownership and usage of ITNs distributed through public campaigns (WHO World Malaria Report, 2008). In Zanzibar, ACTs were provided free of charge to all malaria patients beginning in 2003, and LLINs were provided free to pregnant women in children under five beginning in 2006, resulting in a 10-fold reduction of malaria prevalence and a 77% decrease in malaria-associated illness (Bhattaria et al., 2007). In Eritrea, a large-scale ITN campaign was found to be highly cost-effective (Yukich et al., 2009).

The emphasis of current coverage campaigns has been to execute through the public health systems, in many cases integrated in existing child survival campaigns such as measles vaccines.

In its most recent ITN Position Statement, WHO states: “[t]he best opportunity for rapidly scaling-up malaria prevention is the free or highly subsidized distribution of LLINs through existing public health services (both routine and campaigns)” (WHO Position Statement, 2008).

Emphasis on the public sector is effective and expedient, based on the need for “bold, decisive steps to obtain widespread coverage of key proven malaria-control interventions quickly” (World Bank, 2003).

“Mass campaigns of free ITN delivery are the only proven mechanism to achieve the necessary rapid, high, equitable coverage” (Alliance for Malaria Prevention, 2008).

2.3.2 OVERLOOKING THE COMMITMENT TO WORK THROUGH ALL EXISTING CHANNELS

“Strategies both to strengthen primary health care systems to manage malaria, as well as to extend health care coverage beyond the formal health infrastructure to community-based locations such as homes and shops, are essential for malaria-endemic countries.” Global Fund Report (Allemano, 2008).

The debate around the appropriate roles for the public and private sectors in financing and delivery of malaria control interventions consistently recognizes the need for an integrated approach, that takes into account issues including cost-effectiveness, characteristics of supply and demand and the connections between public and private actions (Hanson, 2004). “The linchpin of the RBM strategic framework is the coordination of the efficient use of public funds to guarantee accessibility of ITNs to those most vulnerable, and a strengthened commercial market providing affordable ITNs to the general public” (WHO Position Statement, 2008).

In its comprehensive review of strategies for engaging the private sector in malaria control, a 2006 report illustrates how public private partnerships enable countries to pool knowledge and resources and to combine the different strengths of public and private organizations (WHO, 2006). But the report highlighted that “in many settings, the interaction between public and private sectors is still non-existent or characterized by benign neglect. While some attempts have been made to date, the private sector has not been sufficiently engaged to utilize fully its competitive advantage.”

The “quick wins” of the recent efforts to reach target population coverage continue to neglect the role of commercial sector delivery systems and capabilities. This approach ignores evidence that complementary public, commercial and social marketing programs are additive and result higher overall coverage (Lengeler & deSavigny, 2007). Mass distribution of free bednets and drugs may reach a large portion of their target market, but leave important gaps in coverage:

Falling short of coverage targets due to inadequate supply: According to the World Malaria Report 2008, ITN supplies were sufficient to protect just 26% of people across 37 African countries. Average ITN coverage across 18 countries surveyed in 2006-2007 showed 35% of households owned an ITN. On average, access to use of ACTs was 38%, with just 3% of children using ACTs. It has been estimated that global public subsidies for malaria control amount to only 20% of the true full cost, requiring some contribution to the cost from the African community itself (Kiszewski et al., 2007).

Reaching newly pregnant women and babies following targeted campaigns: Rapid, equitable, and high distribution of bednets has been successfully implemented through integration with existing health systems such as week-long measles campaigns conducted every three years in many African countries (Grabowsky, 2008). This approach fails to provide for continuous provision of ITNs for women and babies born after the campaign ends.

Reaching populations other than the most biologically vulnerable: Strategies targeting pregnant women and young children leave out the majority of people in Africa who also need options for protecting themselves with treated nets: older children, adult breadwinners, women who become pregnant after the campaign period, and elders. Reducing malaria in wage-earner adults reduces major productivity losses and emotional toll of the disease. Of the 45 countries in Africa providing nets free of charge, only 16 have policies to cover all age groups (WHO World Malaria Report 2008). Coverage for the entire population increases benefits for the most vulnerable populations by providing a community-wide effect that neighboring nets have on mosquito populations providing protection to both net users and non-users (Killeen, 2007). Families need the opportunity to protect all their members through the same shops and channels that provide their other goods and services (Lengeler et al., 2007).

Translating ownership into use: Many nets distributed are not used, or used as intended (Baume, 2008). Reasons include beliefs that they are not needed during dry seasons, use by heads of households who do not know the vulnerability of young children, or sale to meet basic needs such as for food. Priming the commercial market to share in demand creation through better marketing, packaging, and consumer awareness brings needed resources to bear on public education about malaria prevention and benefits of net use. Consumer tastes and preferences in net design also influence use. Conical nets with single points of suspension facilitate use in small huts where nets must be installed and removed daily. In its 2008 household survey in Ghana, Netmark found that half of respondents preferred conical nets

but only 5% of nets owned were conical (Baume, 2008). Public program emphasis on affordability does not insure a diverse range of size, shapes and colors to stimulate use and acceptability.

The strains on Africa's health care systems are tremendous, and resources for basic health needs must be used judiciously. The over-reliance on public health channels and untargeted free goods and services leaves countries more vulnerable to future fall-off in programming that cannot be sustained indefinitely. Equity also demands a more coordinated public-private approach, based on evidence that those with resources have disproportionate access to public sector channels while the poor rely on the commercial sector (Marek et al., 2005). If the commercial sector is engaged as a partner in the development of well-targeted programs for those who can afford to pay, the limited resources available from the public sector can then be used to subsidize prevention and treatment options for those who truly cannot afford to pay.

2.3.3 THE CRITICAL ROLE OF POLICY-SETTING

Effective private sector partnerships in the fight against malaria cannot happen without a policy framework that promotes private sector participation and provides needed regulatory controls to protect the public (Magesa et al., 2005; Lengeler et al., 2007). As discussed in more detail below, creation of an enabling environment will maximize potential cost-effective private sector contributions to support the massive scale-up of public campaigns. Government stewardship of coordinated multi-sector activities should include legal, policy, and operational reforms to

- Implement global best practices such as requiring nets to be LLINs
- Eliminate trade barriers that limit access to health supplies
- Remove laws that restrict the private sector's role in medical training
- Provide flexibility in provider qualifications required to offer basic treatments at the community level
- Eliminate taxes and tariffs on malaria control commodities, per Abuja commitments
- Improve drug packaging and labeling information, including price
- Facilitate the local production of life-saving commodities where appropriate and economically justified to reduce reliance on international suppliers

2.3.4 ENGAGING LOCAL INDUSTRY ACROSS THE SPECTRUM OF MALARIA INTERVENTIONS

Businesses have been shown to be effective and active allies in the fight against malaria, driven by the need to maintain employee health and productivity, and the goodwill that comes from creating a more stable community. With in-house project management skills, on-the-ground infrastructure, and a developed network of employees, they can engage communities in a meaningful and continuous manner. Companies have long been active in malaria control efforts to mitigate the effect of malaria on their economic activities due to absenteeism, high medical costs, and loss of skilled manpower (Kim, 2006).

Examples include the Konkola Copper Mines in Zambia, who combined IRS programs, net distribution and clearing of drainage to dramatically reduce the incidence of malaria (Sharp et al., 2002).

The Global Business Coalition on HIV/AIDS, TB and Malaria (GBC) has contributed efforts to more effectively integrate Africa's businesses in the Global Fund's programs. GBC members include representatives from mining, energy, agriculture, banking and other corporate sectors with vested interests in reducing costs of care and poverty associated with high endemic areas. Businesses offer core competencies that fortify malaria control programs, often starting with a strong workplace program that extends out to the community.

Corporate contributions can be leveraged through innovative partnerships that build capacity to address malaria control through comprehensive approaches. For example, Marathon Oil and the government of Equatorial Guinea recently announced a dramatic increase in child survival after four years of intensive malaria control on Bioko Island (Kleinschmidt et al., 2009). This was the first integrated malaria control program launched through a public-private partnership (PPP) with nationwide coverage. The project was designed by Medical Care Development International, with funding from the Global Fund as well as Marathon Oil and other energy partners. Marathon Oil had funded early pilot programs on the island that became the basis for national scale up, and contributed human and technical resources to the effort.

Case study AngloGold: Model for Integrated Vector Control

AngloGold's operations at Obuasi in the Ashanti region of West Ghana were hit hard by the crippling effects of malaria. In April 2004, 20% of the workforce had malaria at any one point in time and the average time off work was between two and three days per malaria episode. As a first step to addressing devastating impact on its company and the surrounding communities, AngloGold invested in significant research to create a baseline understanding of the vector prevalence, insecticide resistance patterns, and community knowledge, attitudes and practices, leading to a comprehensive approach for malaria control. Elements for its integrated control program combined IRS of dwellings and workplaces, free distribution of LLINs to facilities such as orphanages, treating breeding grounds with larvicide, monitoring diagnosis and treatment with early intervention of ACTs, installation of a comprehensive malaria information system, and engagement of community volunteer for consumer education. AngloGold met its goals of reducing the incidence of malaria (75% reduction by October 2008), winning international awards.

AngloGold's "Obuasi model" was subsequently adopted by Ghana's National Malaria Control Programme, creating a powerful Private Public Partnership approach to malaria control. The Global Fund has approved Ghana's proposal for \$160 million in funding with AngloGold Ashanti as implementing partner. Key elements of the model highlight the benefits of business leadership:

- Opportunities for local job creation through hundreds of community members trained to assist in indoor spraying operations
- Extensive interaction with community leaders to address long-standing myths, and expansive media campaigns
- Comprehensive capabilities including laboratory and insectary services, planning and information systems

2.3.5 ROLES FOR SOCIAL MARKETING

In addition to the Corporate Social Responsibility approach highlighted above, other models establish connections between local businesses and non-profit organizations to create partnerships that provide companies with marketing in exchange for malaria support. For example, PSI, a social marketing organization, developed a “Coverage Plus” strategy that secures partnerships between its local non-profit affiliates and local businesses in 19 African countries. Coverage Plus peer educators, who are donor-supported, access worksites and employees to convey malaria awareness and prevention messages and promote corporate partners in mass media campaigns and packaging. Employer-paid nets or vouchers for nets are distributed along with doses of pre-packaged medications to treat malaria.

The Coverage Plus example is one of many social marketing approaches that have played a central role in private sector efforts to improve consumer acceptance of malaria control efforts as well as to market malaria control products directly. Social marketing activities span a continuum from those offering donor-subsidized nets and drugs to those providing behavior change communication to promote awareness. Social marketing organizations and other civil society organizations are particularly important partners to provide communications following mass distribution campaigns, to ensure the proper hanging of nets, encourage use by vulnerable groups, provide additional nets to newcomers and newly pregnant women, and promote prompt treatment of fever.

Social marketing organizations have traditionally played a role in “priming” the market through demand generating techniques to support sustainable commercial supply. By stimulating the commercial market for ITNs, social marketing organizations can stretch limited public sector dollars. In Senegal, for example, PMI’s funding of social marketing efforts have resulted in a consistent stock of nets being available in the country, through messages that strengthen the brand identity of commercial suppliers and encourage LLIN manufacturers to invest in Senegal, to develop their own marketing plans, and to promote their products (PMI Senegal, 2009).

Another model of social marketing is social franchising. Franchising as a means to organize and improve the quality of private providers has been shown to be both viable and beneficial to the poor in a number of countries. Franchising networks provide an attractive tool for leveraging existing human resources and offers a system for standardizing the quality of a heterogeneous group of practitioners. In addition, it can potentially increase human resources: it works with existing private practitioners who are currently outside public health programming and most likely are not providing quality malaria care due to restricted drug supplies or lack of ability and support (Prata et al., 2005).

3. COMPARATIVE AND COMPLEMENTARY ADVANTAGES OF PRIVATE AND PUBLIC SECTORS IN DELIVERY OF MALARIA PREVENTION AND CONTROL COMMODITIES AND SERVICES

The public and private sectors share objectives for reaching their target clients. Both the private and public sectors meet their goals – profitable market growth and equitable coverage, respectively – by increasing consumer usage of public health products. Overlapping activities such as educational campaigns serve both sectors. Other activities such as the delivery of products may overlap in ways that limit market growth and reduce the potential for a sustainable market supply. This section highlights the characteristics of both the public and private sectors that can be leveraged to meet the massive challenge of malaria control in a collaborative and complementary fashion.

3.1 ITNs/LLINs

ITNs have been recommended as one of the main malaria control tools by RBM with a special focus on pregnant women and children under five, two groups at highest risk of the disease. RBM now advocates universal coverage for all. Demonstrated public health benefits include reduction in child mortality and morbidity, suffering and economic losses (Lengeler, 2007). In economic terms, the availability of treated nets to all to increase use confers a public benefit by reducing mosquito longevity, so even those not sleeping under nets receive a benefit. For this reason, there is a strong economic rationale for the public sector to ensure use of treated nets. Mass distribution of nets is often supplemented with other net distribution programs utilizing routine antenatal care and vaccination clinics through the public health system. The challenge for the international community has been to sustain coverage gains with the best operational and financial efficiency, and preserve equity.

Market-based delivery systems for ITNs are operational in most countries and have been shown to add to high coverage supported by complementary subsidy programs (WHO Position Statement, 2006). One of the leaders in the effort to nurture the commercial sector's role in increasing the availability, affordability and use of ITNs has been USAID's NetMark project. NetMark pioneered partnerships with multiple net producers to produce ITNs, including locally manufactured sources, and it primed the net market through advocacy to remove regulatory barriers, promoted ITNs through behavior change communication campaigns, and provided targeted subsidies (vouchers) redeemable through commercial outlets. There is evidence that commercial markets can achieve more equitable results than subsidized project nets, and that people are more likely to use nets they purchase than those they receive for free

(Webster et al., 2005; Baume, 2008). Introduction of social marketed products to complement free public and fully priced commercial options has also been shown to expand the market (PSI, 2005).

Following is an analysis of the strengths, weaknesses, opportunities and threats (SWOT) of the public and private sector roles in ITN provisioning.

TABLE 1: ITN SWOT ANALYSIS FOR PUBLIC AND PRIVATE SECTORS

STRENGTHS	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Sets health priorities: Controls level of political will and resource allocation</p> <p>Promotes equity: Reaches the poorest, using tax revenues and donor funds to address market failures for those unable to meet basic needs.</p> <p>Protects public safety: Responsible for quality control standards</p> <p>Synergies with existing campaigns: Can build on successes, lessons, and infrastructure for vaccines, prenatal care</p> <p>Well positioned to educate populations about malaria prevention and treatment during routine encounters (antenatal visits, vaccination, etc.).</p> <p>Opportunity to identify the vulnerable and distribute discount vouchers.</p>	<p>Price competition and cost control: An active commercial sector with competing brands leads to price competition, with profit motive to drive cost lower and manage inventory.</p> <ul style="list-style-type: none"> • ITNs now cost 75% less than untreated nets cost in 2000 in countries with NetMark programs (www.netmark.com). <p>Existing distribution system of shops, mobile markets, kiosks, hawkers: Widely available points of sale distribution in place, with existing systems for procurement, transportation, storage.</p> <p>Product innovation: Responsive to consumer demand and customer preferences, and motivated by competition to increase market share through improved products.</p> <ul style="list-style-type: none"> • In example from Bahar Dar region, Ethiopia, businesses sprung up that converted rectangular free nets to conical nets, the preferred choice. (Baume, 2008). <p>Advocacy skills to champion resource mobilization, stimulate media coverage, and increase accountability. For example the NGO Cameroon Coalition Against Malaria, established in 2007, advocated for increased funding from UN organizations and initiated a public education campaign to foster community ownership of the fight against malaria.</p>

WEAKNESSES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Inadequate infrastructure: Throughout much of sub-Saharan Africa, public systems lack information systems, financial management, and logistical experience needed to manage massive campaigns.</p> <p>Lack of flexibility: Government funded programs realize cost-savings from large procurement of identical products, making them unable to address local market variation.</p>	<p>Profit-driven, not concerned with market inequities. Business model generally do not serve the poorest who cannot afford marginal costs. There are concern that use of unsubsidized nets correlates with wealth, with some data to support that the poorest benefit the least from market based delivery (Khatib et al., 2008).</p> <p>Fragmentation: Commercial distributors and retailers may not be networked for large scale supply chains, and may have low access to credit to fund large orders (Seidel, 2006).</p>
OPPORTUNITIES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Leveraging malaria funds: Donor grants have potential to strengthen overall public health systems through transfer of tools and capabilities for implementing net distribution campaigns, including better forecasting, performance evaluation and monitoring, logistical tracking, and end user verification.</p> <p>Working through community organizations:</p> <ul style="list-style-type: none"> • In one example from Mozambique, the provincial government of Sambezia Province partnered with NGOs to distribute subsidized nets to community councils who sold them for small commissions, creating incentives to keep the program going. Community councils were formed to serve rural populations who live more than 20 km for a public health facility (World Vision, 2009). 	<p>Reaching the last mile: Private sector offers novel channels for reaching rural poor, through innovative base-of-the-pyramid strategies that are commercially sustainable. In a program in Ghana rural women “HealthKeepers” sold nets door-to-door with “door opener” fast-moving consumer goods like soap and wound care items that sell themselves. The program demonstrated that local entrepreneurs can profitably reach population groups that may are not being reached by other social organizations (Barnes & Averbeg, 2009).</p> <p>Serving the whole community: The net market includes vast numbers of people other than priority pregnant women and children. Market priming through IEC needed to link community benefits of net use by the full population.</p> <p>Untreated legacy nets: Extensive ownership of untreated nets currently in use; can stimulate demand for treatment kits to complement public distribution of LLINs.</p> <p>Expanded local production: In Tanzania, a number of garment factories converted to net production, reducing net costs, increasing product choice, and building an export market. Worldwide shortage of LLIN supply presents potential for increased production facilities.</p> <ul style="list-style-type: none"> • Successful joint venture provides model for partnership; joint venture between Japanese LLIN manufacturer and local textile mill including LLIN technology transfer resulted in new production capacity of 10,000 nets and created 3200 jobs (Olyset, 2008).

	<p>Marketing health behaviors: Commercial sector strengths in brand promotion can be leveraged to promote public health messages about net use, and contribute to building a “net culture.” Data from NetMark project show that co-funding of brand and product awareness encourages aggressive marketing and stimulates demand, leading to expanded supply (Seidel, 2006). Opportunities include displays in shops, point of purchase information, and packing inserts.</p>	
THREATS		
PUBLIC SECTOR	PRIVATE SECTOR	
<p>Donor fatigue and new funding priorities makes free supply vulnerable.</p> <ul style="list-style-type: none"> Changes in global health priorities and funding declines linked to the global economic recession are likely, and have already been documented in other health areas. (HIV Resource Tracking Group, 2009). <p>Insufficient supply of LLINs has limited the impact of public campaigns in countries including Ghana and Zambia (WHO, 2008).</p> <p>Bureaucratic delays in procurement are common.</p>	<p>Crowding out by free nets drives suppliers from market. If the net market is turned into a commodity market that survives only through public tenders, commercial channels will take years to re-create. Prior to mass distribution of free nets in Mali, more than 70% of the population owned a net purchased through the private sector but those suppliers have withdrawn from the market.</p> <p>Taxes and tariffs continue to keep net prices high, despite commitments in Abuja Declaration to eliminate them.</p> <p>24 of the 39 Abuja signatories continue to impose taxes and tariffs on nets, resulting in final commercial prices 20-100% higher. Countries with high household net ownership are those that have removed taxes and tariffs (Alilio et al., 2007).</p>	

IMPLICATIONS:

Sharing the solution: Segmentation of the market, with well-targeted distribution of free nets to the poor, and a strong commercial supply for those who can afford to pay, provides both short-term and long-term benefits. Willingness to pay studies indicate that a sizable proportion of Africans are willing and able to purchase nets (Baume, 2008). Time-limited and carefully targeted social marketing interventions can fill the gap between free and full commercial prices, and prime the market to build awareness.

Public subsidies, private channels: Programs that provide free or subsidized vouchers for redemption through the commercial channels provide a powerful means of permitting choice and protecting equity. Vouchers relieve the public sector of logistical and financial burdens of net distribution while encouraging competition and growth in the market for nets (Lengeler et al., 2007). Corporations are also enticed to donate to voucher programs because vouchers can recognize them by name (Sidel, 2006). Vouchers help build sustainable networks for distribution and provide populations with expanded choice as to what product is best suited to their tastes and needs.

Public sector stewardship: The key role is to create the enabling environment through policies that promote quality and fair competition, including national guidelines with clearly define policies regarding target groups, distribution mechanisms and pricing. Priority should be given to eliminating taxes and tariffs on nets that inflate net price and decrease demand. Potential revenue loss to the government would likely be offset by productivity and health gains.

Private sector product diversity: Commercial marketplace offers opportunities to reach populations with different needs, providing more choices that let families decide how to meet their own needs. Net needs vary depending upon the shape of the dwelling, the number of people in the dwelling, need to re-hang each evening, durability of wall materials, seasonal nature of disease, ability to pay, preference of color and size, and availability of local sources (Baume, 2008). Only the private sector can build markets responsive to end users, because public distribution of commodities requires governments or donors as buyers, creating a one-size-fits-all model. As recently reported by PMI in Senegal, although increasing sources of free and subsidized ITNs mean retail sales are lower than in previous years, there is still a market for the convenience and choice of a full-cost net (PMI Senegal, 2009).

LOOKING AHEAD: EVOLVING APPROACHES THROUGH “CATCH-UP AND KEEP-UP CAMPAIGNS

Mass free distribution of nets is a “catch up” strategy deployed to reach campaign goals quickly to reach high coverage and improve equitable access. The catch-up approach is based on similar strategies used in extended programs on immunization (EPI). WHO, UNICEF and RBM Partnership have endorsed the free distribution of nets in the frame of catch-up vaccination campaigns as leading to faster, higher coverage.

Maintaining high coverage over time requires long-term routine access, a “keep-up” strategy based upon a sustainable delivery infrastructure. A combined catch-up/keep-up approach is an efficient strategy for achieving and sustaining high coverage. To date, malaria control’s emphasis has been on meeting catch up goals of rapidly covering pregnant women and young children with mass distribution of free nets. There is growing consensus among malaria specialists that an approach is needed that combines both a catch-up and keep-up strategy for ITNs (Grabowsky, 2008).

There is empirical evidence that voucher-stimulated campaigns and other keep-up approaches that utilize private sector channels are effective mechanisms to nurture and grow sustainable market channels for malaria control. As shown in the Tanzania market, a strong pre-existing commercial net market provides governments with the opportunity to introduce time-limited, highly targeted free net campaigns to fill market gaps opportunistically, without disrupting market-based distribution.

Case Study Tanzania: Facilitating Complementary Channels for Net Distribution

Tanzania has a history of pioneering malaria control approaches, introducing innovations in the 1990s including social marketing programs, do-it-yourself net retreatment services, and ITN efficacy studies through hut trials (Schellenberg et al., 1999). In 2004, Tanzania had a well-established network of commercial ITN retailers when the government introduced a free nets program to children under five and a voucher subsidy program for pregnant women. An assessment conducted in 2006 found that these multiple delivery strategies worked in a complementary fashion and yielded high personal and community level protection for the entire community (Khatib et al., 2008).

The interactions among the various players showed that each delivery system supported its appropriate target group, indicating that commercial markets, voucher subsidies and free net distribution are not mutually exclusive choices. The provision of nets at no cost through the public sector did not compromise the viability of the commercial market because the subsidy was targeted toward a previously unsubsidized population group and was not of sufficient volume to compete with established demand for nets. Data did indicate the unsubsidized net market favored the better off, but net coverage for all but the poorest saw increased coverage indicating ability and willingness to pay. Most significantly, net use for the most vulnerable compared favorably to studies in Kenya and Ghana with less developed commercial channel options (Khatib et al., 2008).

3.2 ACTs

Due to growing resistance to chloroquine and sulfadoxine-pyrimethamine, ACTs are the first line treatment policy throughout Africa, the cornerstone of efficacious treatment for uncomplicated malaria (WHO Guidelines, 2006). Widespread use of ACT offers the benefit of not only improving cure rates, but unlike other malaria treatments, also directly decreasing malaria transmission and potentially slowing drug resistance.

The transition to ACT brings many challenges including delays in incorporating in national guidelines, more complex dosing and handling requirements than predecessor medications, and a shelf life of just 18-24 months. Cost is the primary barrier to use of ACTs, with fewer than one in five patients treated for malaria having access to the ACTs (www.theglobalfund.org). A new global subsidy is being launched through the Global Fund's Affordable Medicines Facility – malaria (AMFm) to make ACTs widely available through all channels at affordable prices. A separate funding mechanism managed by The Global Fund pays a substantial proportion of the cost of ACTs, with the expectation that private and public buyers pass on the price benefits to their patients. Participating countries are also required to include public awareness campaigns, training, policy and planning measures.

A key factor limiting access to treatment through public health systems is the fact that the majority of Africans seek treatment for malaria symptoms from the private sector, though there is wide variation between countries. In Ghana and Uganda, for example, private-sector usage exceeds 60% of people in the lowest economic quintile, in Ethiopia and Nigeria it exceeds 40% and in Namibia it is less than 10% (Ghatak et al., 2008). As a result, multi-faceted interventions in the private sector and implementation of community case management through community medicine distributors are needed to increase the proportion of people who access quality care promptly (Rutabemberwa et al., 2009). Because between 50-80% malaria cases are treated in the home, improving the quality of home-based management of

malaria (HMM) is a priority. HMM has been shown to reduce the progression from uncomplicated to severe malaria by 50% and overall under-five mortality by 40% (Whitty et al, 2008).

Following is SWOT analysis of public and private sector roles for ACTs.

TABLE 2: ACT SWOT ANALYSIS FOR PUBLIC AND PRIVATE SECTORS

STRENGTHS	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Responsibility for health of all: ensures malaria treatment is not available only for the wealthy. Poor people more vulnerable to catastrophic costs of serious illness, leading to further impoverishment (WHO Guidelines, 2006).</p> <p>Quality control: inspection of drugs, enforced through registration policies.</p> <p>Standard-setting and enforcement for quality of care: including medical education and accreditation policies.</p> <p>Economies of scale: to procure ACTs at lowest cost.</p>	<p>Geographic coverage: Key reason for high rates of use of private sector channels for malaria treatment including pharmacies, mobile vendors, and general provision shops are due to their geographic proximity. This eliminates the long distances to nearest public health facilities with high transport and opportunity costs for families to access care (Noor et al., 2003).</p> <p>Consumer responsiveness: Research indicates that retail outlets are first choice for many patients seeking treatment due to number of reasons including speed of service, convenience of operating times, better drug availability, greater confidentiality, and lower prices (WHO World Malaria Report, 2008).</p> <p>Payment flexibility: One reason poorest tend to use informal providers is they are often more flexible with payment, such as selling on credit and negotiating prices based on treatment success, compared with inflexible user fees or informal payments in public sector (WHO World Malaria Report, 2008).</p> <p>Accountability: Private sector transactions offer more direct accountability to the client, who can impose social sanctions and lack of repeat business. Weaker accountability in the public sector gives poor less of voice (World Bank, 2003)</p> <p>Marketing: Commercial sector branding and promotional skills are needed to insure that ACT packaging and communications are targeted to local culture and literacy. Packaging can play an enormous role in appropriate treatment for HMM. Illustrated pre-packaged blister packs of appropriate ACT treatment can improve compliance with dose, full course completion, and referrals for severe case.</p>
WEAKNESSES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Rural access: Lack of public health facilities in areas, especially where rural poor live, reducing</p>	<p>Poor compliance with evidence-based treatment guidelines: Widespread problems</p>

<p>equity of access.</p> <p>Weak supply chain: In many countries, private clinics are frequently better supplied with medicines than their public counterparts (Ghatak et al, 2008). ACT stock-outs in public health facilities were responsible for the limited impact on malaria in Zambia and Ghana following national ACT campaigns (WHO World Malaria Report, 2008).</p> <p>Inadequate regulatory capacity to ensure drug quality: Lack of capacity for inspecting, monitoring, and regulating ACT quality as most drug regulatory are understaffed, underfunded, and poorly trained.</p> <p>Resource tracking: High price of ACT make them vulnerable to corruption and leakage.</p>	<p>include sale of ineffective treatments, and inadequate follow-up (Goodman et al., 2004)</p> <p>Sales of incomplete treatment courses: Tablets sold by the unit rather than as a complete course of treatment, due to high cost of ACTs.</p>
OPPORTUNITIES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Increase in procurement subsidies through Affordable Medicine Facility – malaria.</p> <p>Expanding private sector role in medical training: Can address existing weaknesses and growing workforce crisis. NGOs have provided important capacity-building services to health workers, and can continue to support the public sector after the end of a Global Fund-supported project to improve diagnosis, treatment and follow-up (Allemano, 2008).</p>	<p>Increase in procurement subsidies: Through Affordable Medicine Facility – malaria. This subsidy is available to both government and high-level private sector purchasers, allowing the drugs to enter existing private commercial channels at prices sufficiently low to reduce consumer incentives to buy cheaper non-efficacious drugs.</p> <p>Local production of ACTs: To meet global demand.</p> <p>Insurance and other mechanisms to improve access and quality of treatment: A number of African countries are actively implementing insurance schemes (from community-based financing to national health insurance) to improve healthcare access, equity, and quality. While these schemes present many operational challenges, results indicate potential to increase access to formal medical services for treatment. In a recent evaluation of Ghana’s National Health Insurance scheme, insurance was found to be very effective in reducing out-of-pocket expenditures for outpatient and inpatient care (Health Systems 20/20, 2009). Nigeria is also piloting an insurance plan through private sector including screening and treatment of malaria. The program ties insurance subsidies to pre-agreed services to be delivered under an output-based aid model to improve access and service quality in the private sector (World Bank, 2008).</p>

THREATS	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Urgency due to improper use of ACTs: Sub-optimal dosing, reliance on outmoded therapies, undermining long-term effectiveness. By channeling “good” drugs only through public health channels and ignoring patronage of private sector, inappropriate drugs will continue to flow.</p>	<p>Counterfeit drugs: Can lead to inappropriate drug choice, adverse drug reactions, and inadequate follow-up. Unethical business practices are widespread and contribute to government mistrust and reluctance to invest in non-public resources (Ghatak et al, 2008).</p>

IMPLICATIONS:

The challenge for policymakers is how to improve delivery and targeting of ACTs. Far more effort has gone into determining which antimalarials are efficacious than in determining how to deliver them effectively (Whitty, 2008).

The informal healthcare sector can become critical agents of change, challenging the fatalism that malaria is part of life. In a Vendor-to-Vendor education program in Kenya to improve private sector malaria treatment practices, antimalarial dispensing practices were significantly improved through wholesale vendors trained to communicate malaria guidelines to retail outlets and private clinics. The wholesale vendors, including mobile vendors on motorcycles and counter attendants at wholesale pharmacies and shops, were provided job aids and receipts for retailers to sign agreeing to follow the malaria guidelines (Tavrow et al., 2003).

In another program, the Kenyan government provided ongoing educational training and monitoring for untrained shopkeepers, resulting in improved utilization of anti-malarials and appropriate referrals (Goodman et al., 2006). Shopkeepers reported perceived benefits from the training to include increased knowledge, social status and most significantly, increased trade. These results indicate that drug seller training can benefit both the community at large and the business interests of the retailers (Goodman et al., 2006).

The growing use of insurance schemes, many organized by the private sector at the community level, serve to provide a more efficient means of organizing households' financial contributions to the health care system than direct out-of-pocket spending. Risk-pooling schemes provide financial protection by allowing individuals to prepay small, regular premiums over time, rather than individuals having to pay providers directly when they need care, potentially facing steep financial barriers to access or catastrophic expenditures. The schemes can then purchase health care services from private or public providers in a more rational, cost-effective manner, and they can target high-impact services -- such as the prevention and treatment of malaria -- in their benefits packages. Insurance improves the predictability of revenue flows to health facilities in both the public and private sectors, and may increase the total resource envelope that can be generated from households. In one study from Mali, household membership in a community-based health insurance schemes were found to be a positive predictor of use of insecticide-treated mosquito nets in children under 5 (Franco et al., 2006).

The role of the public sector in facilitating private sector improvements in care is significant, and includes:

- Development of clinical protocols, continuous professional development,

licensing, recertification, and training requirements to improve practices of licensed practitioners.

- Stronger regulatory mechanisms and strategic enforcement to ensure adequate drug inspection, registration, and other quality controls.
- Reduced bureaucratic delays for customs clearing procedures and exemption from import duties for drugs.
- Support for risk pooling to improve access through insurance regulation.
- Classification of ACTs as over-the-counter drugs.

ACTs require considerable subsidy for the majority of Africans to benefit, and the AMFm offers important opportunities for both the public and private sectors to avail themselves of low cost ACTs. Established commercial distributors with access to the subsidized drugs can sell the ACTs through the same channels as they did chloroquine and other widely available but outmoded drugs.

Targeting mechanisms such as vouchers provide an effective system for subsidizing ACT costs through existing retail channels. Co-pays can support variable pricing depending upon the level of need. In a World Bank report on competitive health voucher schemes around the world, the introduction of choice for redeeming vouchers among private and public providers was correlated with increased cost efficiency and patient satisfaction (Gorter et al., 2003). The financial incentives for providers to compete for voucher business in turn expanded the capacity of services offered. Administrative costs were shown to be best managed through partnerships with third party community organizations to implement and evaluate the program.

LOOKING AHEAD: IMPROVING PRIVATE SECTOR QUALITY OF MALARIA CARE THROUGH SOCIAL FRANCHISES

There is urgency in the need to support the private sector sources on whom Africans rely heavily for their malaria treatment: to ensure access to appropriate and safe ACTs, to improve knowledge and training, and to halt the risk of ACT resistance due to misuse. One approach for improving care in the informal private sector is the use of social franchises to provide needed support, build incentives for service quality, and improve health outcomes.

Social franchises are based upon business franchise models to offer social goods in an organized network. Franchisees in a social franchise model typically offer a standard set of products or services at lower costs under a shared brand name. Benefits to franchise members might include training, brand and product advertising, referrals, and brand equity. Franchises are often businesses that add a franchised service or product to existing operations.

The push toward HMM of uncomplicated malaria and the overwhelming reliance on informal and formal private sector providers for treatment requires more aggressive collaboration and training of those outside the public health facilities currently serving as frontline in malaria treatment. Tanzania's Accredited Drug Dispensing Outlets (ADDO) program for private drug sellers demonstrates how PPPs can improve ACT access through government accreditation, pre-established stock control and record-keeping standards, regulation of drug quality, mediated supervision through local community governments, and commercial incentives (Rutta et al., 2009).

Case Study Kenya: Using Social Franchises to Increase ACT Access

In one application of a social franchise focused on increasing ACT access, Child and Family Wellness Shops (CFWShops) in Kenya offer franchisees the ability to run a profitable business selling drugs through a combination of micro-financing, clinical protocols, retail management, and access to low cost drug procured in large volumes for the entire franchise base. The project founders believed that the best route for getting drugs to people when and where they are needed was to make the opportunity profitable for the retailer, thus providing incentives to ensure compliance with uniform procedures and quality standards. In 2008, CFWShops had treated more than 42,000 cases of malaria through a network of 82 shops and clinics. Franchisee success is attributed to upfront investments in the franchise to secure their commitment as owners of the business (www.cfwwshops.org).

3.3 IRS

The public sector has a critical oversight role in the provision of IRS for a number of reasons. The spraying of households to control malaria is seen as a public good, because community members benefit whether or not individual inhabitants choose to spray their dwellings, creating a “free rider” problem for financing. The timing and coverage of IRS must be carefully calculated based upon analysis of local epidemiological data, transmission patterns, vector behavior, and the pesticides used. Strict controls are needed to ensure vigilant surveillance to detect resistance. Environmental pollution from insecticides, particularly DDT, the most cost-effective and long-lasting of pesticide alternatives for IRS, must be monitored closely. This includes following regulations on storage, transport and disposal to insure no leakage outside public health use. In addition, interventions such as IRS and LLINs have synergistic effects, requiring that efforts be directed and timed at the national level.

The RBM Partnership has acknowledged that not all countries can support effective IRS operations which require significant organization, infrastructure, information systems, logistics, personnel, and environment compliance skills. There are major challenges posed for cost-effective use of IRS by governments with weak logistical capabilities. In one economic assessment of recommended interventions for potential scale-up toward millennium goals, IRS was determined to be an economic choice only in unstable transmission areas. LLINs as an alternative intervention were calculated to be easier to distribute, last longer, require fewer human resources, and face less complex logistical challenges than IRS (Teklehaimanot, 2007). Private sector resources are most critical in environments prone to severe epidemics, for which IRS campaigns have been shown to be the most cost effective per case of malaria prevented (Worrall et al., 2008).

In a number of countries, IRS campaigns have been conducted by local private economic interests to protect tourism and provide benefits to workers in high endemic areas.

Following is SWOT analysis of public and private sector roles for IRS.

TABLE 3: IRS SWOT ANALYSIS FOR PUBLIC AND PRIVATE SECTORS

STRENGTHS	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Scale: Nature of vector control requires large scale coverage for effectiveness (80% of dwellings) limiting the role of individual market transactions and the incentives of commercial providers (WHO Position Statement, 2006). Oversight: Responsibility for environmental surveillance, safety, and compliance. Economies in procurement</p>	<p>Management capabilities: including strategy, planning, financing, evaluation. Resources: including warehouses, supplies of equipment and insecticides. Human resources and training capacity: to manage complex logistical requirements. Marketing and promotional skills to complement public health information campaigns. For example, Exp in South Africa has developed an experiential Sixth Sense Intervention to engage, educate and mobilize communities in preparation for spray campaigns (www.expagency.biz). The experiential approach targets wider community ownership, partnership and empowerment in driving home behavior change messages. Entomological and disease surveillance: available through private research organizations (Sadasivaiah et al., 2007).</p>
WEAKNESSES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Key capabilities: lacking in many countries include regional laboratory networks, effective monitoring systems, and rapid response mechanisms.</p>	<p>Limited market: for spraying outside of public campaigns.</p>
OPPORTUNITIES	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Increase in investments in surveillance systems: expands public sector capacity for planning, disaster-response, and resource allocation. Facilitate engagement and regulation: of the private sector through: 1) Regulations that make it mandatory for companies of a certain size in endemic areas to implement IRS. 2) Mechanisms for engaging private sector service companies in implementing IRS programs such as contracting out.</p>	<p>Intellectual capital: of local academics/researchers who may serve as advisors Logistic capacity: of large private sector operations (mines, oil companies, agricultural operations). Development of consumer IRS products: similar to currently marketed insect-control products widely used in the African market such as flit guns, aerosols, etc. Recruitment and training: of spray operators.</p>
THREATS	
PUBLIC SECTOR	PRIVATE SECTOR
<p>Low community acceptance: and cooperation. Ongoing environmental concerns: about</p>	<p>Lack of contracting mechanisms: for private sector participation in public campaigns. Risk of negative press: associated with safety</p>

safe use of DDT and other insecticides. Sustainable financing: for keeping key human resources in place.	issues and insecticides.
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IMPLICATIONS:

Rational outsourcing of public IRS operations will create efficiencies particularly in countries with seasonal or episodic transmission, and weak management infrastructure. Close collaboration between IRS contractors and regulators is needed to ensure policy compliance and oversight. Where there is inadequate public capacity, strong private sector logistical experience and commitment, and regulatory oversight, countries should facilitate execution of national IRS campaigns through private contractors, to improve cost effectiveness and reduce public sector burden.

Private sector operational support in the areas of market research, surveillance and evaluation is needed to complement public sector weaknesses in this area. According to a recent essay by the Global Fund malaria coordinator, the failures of current malaria control programs, such as limited campaign impact in high transmission countries such as Nigeria and Democratic Republic of the Congo, are tied to the lack of systematic assessments, targeting and evaluation (Grabowsky, 2008). Private contractors provide needed capacity, subject to protections of transparent industry standards for procurement and environmental compliance, consistent with PMI funding requirements.

Public private partnerships can create cost-sharing agreements within target regions among large public institutions (hospitals, prisons, orphanages) and private employers for workplaces and employee housing. See for example EcoNation, a Ugandan services contractor with experience in IRS operator safety compliance, environmental controls and assessments and procurement and planning activities (www.EcoNationAfrica.com).

LOOKING AHEAD: IMPROVED IRS PROTECTION THROUGH PUBLIC PRIVATE PARTNERSHIP

The Integrated Vector Control Consortium (IVCC) is a product development partnership between public health officials, donors and private companies to develop vector control products (www.ivcc.com). Initially established as a research consortium, IVCC has developed into a product development partnership.

There is a shortage of insecticides needed for IRS and other insect control project. The partnership removes obstacles to development of new insecticides by contributing to research and development, brokering technology transfers, and providing expert recommendations and market knowledge. The consortium helps insure that new products are commercialized at affordable rates and at sufficient volumes to have an impact.

Apart from the more traditional product development partnership, IVCC also develops information systems and tools for policy makers and program managers who need in-depth information about resistance patterns and trends. Examples include decision support systems and modeling software to forecast the spread and growth of insect vector populations. Information systems and tools are developed collaboratively with best practices widely disseminated to external stakeholders.

4. RECOMMENDATIONS

As demonstrated in this report, the private sector is active in the fight against malaria, and has comparative advantages in provision of the commodities and services needed to prevent and treat the disease. For the past few years, however, a catch up strategy of free distribution of nets and drugs through the public health system has marginalized the private sector, reducing long-term sustainability for coverage programs. This saves lives now, but does so at the potential expense of saving lives in the future, a choice we need not and should not make.

In spite of unprecedented scale up in campaigns to achieve high coverage, many countries will not meet their coverage targets. There is a current need for 228 million annual doses of ACTs, 172 million households to be sprayed annually, and 730 million additional LLINs by 2010, predominantly in Africa (Global Malaria Action Plan, 2008). Against this staggering need is the reality of a global recession and high risk of shifting donor priorities to other pressing needs. The current path of external subsidies and public sector channels cannot get us where we need to go. Markets flooded with huge influxes of free commodities and services distort and destroy incentives to meet diverse consumer needs, leaving the very poorest worse off when the subsidies end. A re-engagement of the private sector is urgently needed to optimize private sector strengths, tap new resources, and make better use of existing channels to expand access to malaria interventions and reduce the financial burden on governments.

In this section, initiatives are recommended to nurture and harness private sector resources at a national, regional, and global level. These recommendations will catalyze and facilitate a more inclusive and comprehensive approach to malaria control, but not unless there is, first and foremost, a recognition at the highest political levels that the private sector is a vital partner in the fight. Advocacy is needed at both the international and local level to create resolve and promote awareness of the potential gains from greater private sector engagement.

4.1 BI-LATERAL AND MULTI-LATERAL DONORS SHOULD ENCOURAGE DEVELOPMENT OF “CATCH UP/KEEP UP” STRATEGIES WITH TECHNICAL AND FINANCIAL SUSTAINABILITY SUPPORTED BY PUBLIC/PRIVATE PARTNERSHIP

Donors are critical guides in shaping malaria control programs and can promote approaches that address long-term needs, attract new resources, build local entrepreneurial capacity, and exploit existing distribution channels. Additional funding for “keep up” strategies is needed that will build long-term incentives for private sector supply. Funding should be available for National Malaria Control Programs to increase engagement and efficiency of the private sector through programming such as:

- Market analysis to identify consumer sourcing patterns and willingness to pay research.

- Opportunities to expand risk-pooling arrangements to finance private healthcare providers, including voucher programs that make it possible for private sector distributors to become partners in donor-funded programs.

Profit-sharing partnerships between multinational manufacturers and local producers of nets, insecticides, and artemisinin.

Models for malaria-related PPPs, derived from successful pilot programs, to build long-term business partnerships where donors, governments, commercial suppliers, private providers and NGOs interact on a continuous basis.

For ITNs, provide education to the informal private sector bednet supply chain about importers, distributors, wholesalers and sub-distributors.

For IRS, public private partnerships to reduce the cost of developing and registering new insecticides and foster an interest among pesticide companies in public health insecticides. Strategies such as tiered pricing, in which developed nations are charged higher prices for insecticide purchases for agricultural use, can cross-subsidize charges to poorer nations who intend to use the insecticide for public health (Sadasivaiah et al., 2007).

For ACTs, collaboration with pharmaceutical companies to strengthen support for treatment providers whether in the public or private sectors regarding drug use, counter-indications, dosage, and storage. Costs for education and training can be shared.

Donor activities to facilitate these activities include funding research, building awareness through dissemination of case studies and success stories, and sponsoring international conferences on private health sector engagement.

4.2 SUPPORT NATIONAL EFFORTS TO DEVELOP PRIVATE SECTOR INVESTMENT IN HEALTH

In its recent report on the need to mobilize the responsible development of private sector health care in Africa, the International Monetary Fund (IMF) identified five ways to harness its potential (IMF, 2007). These were 1) to develop and enforce quality standards, 2) to foster risk pooling programs, 3) to earmark donor funding directly to private sector entities, 4) to streamline bureaucratic processes that stifle private involvement, and 5) to improve access to capital. The malaria community in Africa should endorse and champion initiatives to promote a broader role for the private health care system as a way to address unmet needs in the fight against malaria.

Consistent with this investment in health, the malaria community should support development of training programs offering business development capabilities for those in the private health sector who provide malaria goods and services. A stronger market-based health economy can help governments meet the demand for all health goods and services. Entrepreneurial skills can be taught, with results that create jobs, alleviate poverty, and increase economic stability. Programs similar to the following should be encouraged to enhance opportunities for small and medium enterprises to create African-based solutions for malaria for the long-term.

Accessing and managing capital: While the past decade has seen a growth in microfinance loans to individuals in developing countries, less financing has been available to grow companies with reasonable returns over a long time frame. More such “patient capital” is needed along with guidance for health entrepreneurs on how to access and administer (ole MoiYoi, 2009). The Kenyan company Advanced Bio Extracts (ABE) provides a good example of the benefits of this approach. With help from the Acumen Fund who

provided a low collateral loan with reasonable interest rates, ABE was one of the first to commercialize the key ingredient of ACTs, the sweet wormwood plant, through contracts with 7000 small farmers in Kenya, Uganda, and Tanzania. The farmers sell their crop to ABE at much higher yield than alternative crops, and ABE in turn sells the processed artemisinin to the pharmaceutical company Novartis. The loans and financial support have resulted in the creation of 160 jobs (Friedman, 2007).

Business planning: Like all businesses, retail outlets that provide needed malaria products need to know basic information about their market: its size, customer profile, potential growth, number of competitors, projected sales, cash flow and profits. Strong business plans help commercial outlets identify market needs and maintain profitability. Basic business training, such as that offered by CFVShops described in the case study in Section 3.2, provides operational support to independent business owners who provide malaria control services, in addition to supplying access to quality assured ACTs and bednets at affordable prices. Initial franchising steps include working with franchisees to assess the business case for establishing an outlet, including analyzing the incomes of people living in that area, and the location and condition of the premises (TDR, 2008).

4.3 SUPPORT NATIONAL SITUATIONAL ANALYSES TO ASSESS THE POTENTIAL FOR PARTNERSHIP WITH THE PRIVATE SECTOR IN SUSTAINABLE MALARIA PREVENTION AND TREATMENT

To support dialogue and mobilization of public-private partnerships at a national level, there is a need to mobilize key institutional actors in both the public and private sectors to create the necessary supportive posture and reduce mistrust and bureaucratic obstacles (Allemano, 2008). A critical initial step for comprehensive market development is research and analysis of the total market, including public, social marketing, NGO and private providers, as well as consumer demand. Comprehensive market analysis is a recognized necessary prerequisite for establishing successful malaria programs, including detailed analyses of epidemiological, socioeconomic, and environmental factors (African Union, 2007).

The malaria community should advocate for such an analysis, with support from a cross section of stakeholders to establish the purpose, scope and outputs of the assessment. Broad participation in the planning and design phase will serve to expand access to data, highlight market barriers, enhance relevance, improve buy-in, and facilitate dissemination of results. This includes government health and finance agency staff, local and multinational businesses, NGOs and consumer groups, and clinical and research organizations.

Steps for the assessment include:

Acquiring data on private sector supply: Existing data on the private sector's involvement in malaria interventions is scattered at best, mostly from program updates and various annual reports completed by international organizations reporting on total numbers of LLINs or ACTs distributed via social marketing organizations. This data is often specific to a particular program and may be insufficient to reach conclusions about impact on malaria prevalence rates (Attaran, 2005). National statistical efforts and WHO do not routinely collect or analyze data on the private sector in malaria treatment and prevention. Such

assessments could start with RBM's methodology and data collection tools for analyzing malaria interventions on a district or national scale (RBM, 1999).

ACTWatch, a five year project launched in 2009 through funding from the Gates Foundation, seeks to address the gap in data on antimalarial drugs price, quality and availability at both public and private sector service delivery points (www.ACTWatch.info). Studies will be conducted in six African countries, with a goal of providing ongoing evidence to policymakers to use in expanding use of ACTs in vulnerable communities. Studies conducted will collect data from shops and health facilities, investigate malaria treatment seeking behavior in the community, and look at the functioning of the supply chain for antimalarials. This evidence will inform policy discussions and provide critical insights into the private sector role.

Additional data is needed about private sector provision of malaria treatment including the extent of malaria information made available, and provider perceptions on malaria causes and control. This information may be found in common population based surveys such as Demographic Health Surveys (DHS), Malaria Indicator Surveys (MIS), and Maternal and Child Health Service Provision Assessment Surveys. This should be combined with private sector sales data developed through the ACTWatch project.

Creating a framework to organize analysis: A robust situation analysis should take into account a broad cross section of factors relevant to creating a conducive environment for PPPs. Similar mapping exercises have been used in private market assessments for safe water programs and for family planning (Armand et al., 2007). A sample set of survey areas is included in Appendix I. Framework elements should include:

Market maturity indicators such as consumer knowledge of and preference for particular interventions, and total number of actors in the market including number of manufacturers, wholesalers, NGOs, informal and formal drug vendors, shops, mobile markets;

Legal and regulatory policies for products (easy product registration, no import tariffs or taxes, no price controls) and for services (restrictions on who can provide malaria treatment, pharmacist licensing and training);

Socio-economic factors including GDP per capita, literacy rate, percent rural, children per household, type of dwelling.

Armed with shared data about current private sector roles, gaps, opportunities, and strengths in malaria control programs, National Malaria Control Programs can utilize the frameworks to develop data-driven national programs for efficient allocation of resources. Based on the analysis provided, guidelines should be developed that establish targets for free public sector supply, develop targeted subsidy mechanism for areas in need of market priming and mid-cost options, and protection and regulation for commercial suppliers to develop sustainable malaria products and services. Programmers from both the public and private sectors can develop more successful services with better information armed with data on population subgroups, including improved product design and more effective behavior change communication.

4.4 ESTABLISH REGIONAL DIALOGUES TO SHARE BEST PRACTICES, PURSUE REGIONALLY ORIENTED PRIVATE SECTOR PARTNERSHIPS, AND CONDUCT IN-DEPTH ECONOMIC ANALYSES AROUND SUPPLY AND DEMAND-SIDE SUBSIDIES

Regional efforts in Africa to develop coordinated malaria control interventions provide valuable forums to improve disease surveillance for border countries, pool resources for drug and net procurement, strengthen country-level commitment to meet international goals, and share lessons learned about prevention and treatment programs. South-to-South forums in disease control facilitate technology transfer and capacity building across the region such as establishing networks between epidemiological units (FAO, 2006) and timing of spray campaigns in contiguous areas.

Toward this end, there are significant examples of regional cooperation to combat malaria in the African region.

Global Health Delivery NMCP Best Practice Sharing Workshop held in July 2009, bringing NMCPs together to address common challenges including supply-chain management of anti-malarials and home based care (www.globalhealthdelivery.org).

Africa Interfaith Action Campaign announced April 2009 approach to create partnerships among African faith institutions, particularly between oft-divided Christians and Muslims, to cooperate in malaria prevention and treatment education (World Vision, 2009).

Elimination Eight Initiative to integrate malaria control policies into a coordinated approach among the following countries: South Africa, Swaziland, Namibia, Botswana, Mozambique, Angola, Zimbabwe and Zambia (van den Bosch, 2009).

Regional Malaria Control Commission in which the countries of Mozambique, Swaziland, and South Africa came together to fund a joint malaria control effort in the Lubombo region in light of malaria's impact on tourism and economic development throughout the region (Sharp, 2007).

Southern Africa Development Community forums on regional epidemics to address shared climate anomalies that trigger malaria outbreaks and coordinate plans of action (daSilva, 2004).

Despite the need for regional mechanisms, the Global Fund and other large donors continue to channel resources primarily through Country Coordinating Mechanisms at the country level. As suggested by the Global Fund's Private Sector Report, public/private partnerships should be encouraged through companies with operations in several countries to leverage resources on a larger scale and allow for synergies between participating countries (Allemano, 2008).

In addition, new regional efforts should be developed with a focus on best practices for engaging the private sector in malaria control. The malaria community such as international donors and civil society organizations should convene forums to develop collaborative responses to shared challenges. Outputs from the forum should provide the basis for strategic plans that ensure more efficient use of resources, highlight easy wins, and hold neighbors accountable for regional action steps. Use of internet-based

platforms creates a low-cost way to expand participation to build public-private linkages, share tools and materials, and facilitate ongoing dialogue and support (PSP-One, 2008). Topics might include:

Analyzing market behaviors related to cross-border trade: Market analyses can provide needed data on how price, tariff, and access disparities result in sale of subsidized product from one market into neighboring countries. For example, ITN trade among African countries has been limited by failure to adopt harmonized coding systems for nets and needs to be addressed through a regional approach (Alilio et al., 2007).

Skill-building workshops to promote cost-saving ideas and other best practices: By bringing together private sector organizations active in malaria control programs, there will be opportunities to learn from successes of others particularly in the areas of financing and contracting, community education and awareness, local hiring and training programs, advocacy and lobbying, and procurement and supply chain management. For example, net manufacturers and LLIN development licensors were brought together across the African region in a technology meeting in 2005, exposing dozens of net manufacturers to opportunities for international financing and support for technology transfer agreements (Seidel, 2006).

Expanding the dialogue across industries: A regional forum can provide a platform to bring market actors together from different business backgrounds such as media, transportation, pharmaceuticals, and consulting to create new cross-border alliances.

Overcoming cultural barriers to effective malaria control: Socio-cultural factors are critical to the success of behavior change campaigns. Private sector organizations including NGOs and faith-based organizations are often the most trusted organizations in communities, and capable spokespersons for local practices, beliefs and barriers. Forums to bring together representatives from tribes, religions, or other communities of interest across national borders can address common malaria challenges and solutions that may be missed at the national level.

5. CONCLUSION

The malaria crisis in Africa has generated a crisis response, but the emergency is long-standing and deeply entrenched. The pendulum of international response has swung away from long-term sustainability to support massive give-away programs at the national level, but many countries will fail to meet near-term coverage targets. The private sector is active in all facets of malaria prevention and treatment, constituting more than half of all health expenditures, but their role in most malaria control programs has often been uncoordinated, unregulated, unplanned, and underutilized. Benefits of broader private sector engagement through integrated malaria control programs include increased utilization through increased choice, better reach in rural areas, capacity-building in planning and management, access to scarce human and capital resources, innovation through entrepreneurial drive, and the ability to stretch donor funding.

This report recommends a number of proven approaches for joint public-private activities that increase the likelihood of sustainable and cost-effective solutions. These public-private interactions require sharing of information, risks, and accountability. Both government and private sector actors must come together, with support from the broader malaria community, to have meaningful dialogue, build trust, capitalize on their complementary strengths, and create a common agenda to reduce malaria's burden. The failure to better leverage private sector resources in the fight against malaria is one that Africa and world cannot afford.

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APPENDIX I:

Areas to target in malaria private sector assessment. Sources include literature review, secondary research sources (DHS, World Bank, purchased sales data), primary sources (surveys, focus groups, mystery shopper), stakeholder interviews.

Private Market Assessment Components
<i>Demand for Malaria Services and Commodities</i>
Size of unmet need for malaria products (e.g. ownership of LLINs, use of ACTs, inventory vs. sales)
Market segmentation data (can be other health products)
Market data (sales, brands, sales trends)
<i>Factors that Affect Demand for Malaria Commodities and Services</i>
Socioeconomic factors: location, assets, education, employment
Cultural practices, consumer knowledge
Gender factors affecting sale, point of access and use
Perceptions and beliefs affecting demand, (e.g. children first, only buy when sick, price is most important determinant)
<i>Supply</i>
Market size based upon sales data, number of suppliers, revenue per category
<i>Factors that Affect Supply</i>
Current sales channels (government clinics, medicine shops, licensed chemists, traditional healers, general provision shops, community health workers, NGOs) and new options to explore (agricultural seeds and supplies, mobile vendors)
Regulatory: Tariffs and taxes, registration, import process, price controls

