Multinational Corporations and the Fight Against Malaria in Africa

by

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Abstract

This paper outlines the evolving role of the private sector in helping to address the challenges of disturbing health issues in Africa. The central question is to find out the role multinational corporations operating in Africa play in the fight against malaria. The paper presents a case for the implication of multinational corporations in global health matters, especially malaria and provides an overview of the key ways in which the private sector is already involved. The paper also makes attempts to analyze how businesses can bring unique contributions to the fight against malaria in Africa and offer recommendations for how to catalyze further private-sector engagement in the years ahead. Through the analyses of corporate reports and personal communications, this paper seeks to demonstrate the implication of multinational corporations in the fight against malaria in Africa south of the Sahara by assessing the contribution of six multinational corporations in this endeavor. The companies selected on the basis of their involvement in this fight include ExxonMobil, Marathon Oil, Chevron, Heineken, Sanofi-Aventis and Lafarge.

Keywords: Malaria, corporate social responsibility, multinational corporations, Africa, poverty alleviation, economic development

Introduction

Each year there are an estimated 250 million malaria cases worldwide and 800,000 deaths related to the disease (World Health Organization, 2010). Prevention and control efforts to date have been led by governments, international partners and donors. But while effective methods to control and treat malaria exist, they are not always available to the nearly three billion people at risk of the disease. While many governments have demonstrated very high levels of commitment to fight the disease, most governments in endemic areas lack the resources needed to comprehensively deal with malaria, which is why international funds have been crucial to control efforts.

In recent years, more than 1.5 billion annually has been channeled to countries, mostly through the Global Fund to Fight Aids, Tuberculosis and Malaria, the US President's Malaria Initiative and the World Bank. This sum, however, falls well short of the estimated 5-6 billion annually required to fight the disease. This gap in funding has prompted many interested parties to urge greater private-sector involvement, especially since malaria control efforts can have a positive economic impact for the community in general and the private sector in particular.

In recent decades, there has been a decided evolution in perspectives on the roles and responsibilities of business in society. The classic position was Milton Friedman's 1970 pronouncement that the only responsibility a business has is to return a profit to its shareholders (Milton, 1970). That view has largely been replaced by a more nuanced understanding of the ways in which businesses can enhance their competitiveness and economic returns by addressing the needs and challenges of the communities in which they operate. Corporate responsibility is no longer an oxymoron, as skeptics claim, but rather an emerging approach designed to create shared value for businesses and their shareholders—having positive social impact while also generating the return on investment expected by shareholders. There is still wide variation in corporate responsibility practices, from firms that see such activities as little more than a public relations strategy to improve their brand image to others that find meaningful opportunities to drive social change through their core businesses (Milton, 2011). At the same time, there has been growing interest and acceptance of the private sector in the broader global development agenda. Private-sector engagement was among the main issues addressed at the recent 4th High Level Forum for Aid Effectiveness in Busan, Korea. Lars Thunell, executive vice president and CEO of the International Finance Corporation (IFC), observed that, "This could be the turning point where we recognize the mutually supportive roles of the private and public sectors in promoting development" (Sung-Hee, 2011).

As these trends suggest, there is a convergence in perspectives between those who see business as a potential partner in improving the prospects for people living in low- and middle-income settings and those (primarily in the donor community) searching for new methods and new resources to address key unanswered questions about how to catalyze and sustain development gains in a world that faces growing constraints.

There are few policy areas in which these issues are more salient than in global health, or where there is more promise for meaningful private-sector contributions. Sometimes the challenges faced in global health seem intractable—ranging from the global epidemics of HIV/AIDS, TB, and malaria; to the emerging epidemics of chronic non-communicable conditions, maternal mortality and childhood illnesses that still cause too many unavoidable deaths. But in recent years, there has been tremendous progress in marshaling the financial resources, relevant expertise, and necessary partnerships to improve global health outcomes, along with a major shift in norms, outlooks, and practices. The private sector, championed by multinational corporations (MNCs) is working alongside partners in the public sector and civil society across a broad front in global health, and every day new initiatives and investments are announced.

At the same time, there is continuing distrust and skepticism—even antagonism—in some circles toward greater business involvement in global health. Recent examples include the concern expressed by a coalition of nongovernmental organizations (NGOs) about the involvement of companies from the food and beverage industries in the UN High-Level Meeting on Non-Communicable Diseases in September 2011 because their products and marketing practices were seen to "contribute to the development of non-communicable diseases." Similar concerns about conflicts of interest have been noted with respect to a Global Fund grant that provided cost sharing for an HIV-prevention, care, and support program to reach at-risk populations in South African bars and taverns in partnership with an alcoholic beverage manufacturer (Lincoln et al., 2011). In both cases, the companies involved have made important commitments of financial support and expertise in collaborations designed to improve the health of target populations in measurable ways, yet certain stakeholders remain unpersuaded. In part, this reflects an enduring and deep-seated antipathy between some segments of civil society and the business community, mirrored in some cases by similar concerns on the part of business toward government and the NGO world. We also acknowledge that some private-sector contributions to global health and development, such as certain aspects of microfinance, have been oversold in the past, which leads to justifiable caution in assessing whether business commitments are real, constructive, and sustainable.

To help in reconciling these viewpoints, this paper outlines the evolving role of the private sector in helping to address the challenges of global health. The central question is not *whether* the private sector has a role to play—as we indicate below, in many developing countries the majority of health care services are already delivered through the private sector—but *how* to put the particular skills of the private sector to best use. In the pages that follow, we present a case for why private-sector involvement in global health matters and provide an overview of the key ways in which the private sector is already involved. We then examine how businesses can bring unique contributions to global health and offer recommendations for how to catalyze further private-sector engagement in the years ahead. In doing so, we hope to help readers understand the evolution of multisectoral engagement in global health and obtain a clearer view of criteria by which to judge the credibility and performance of the private sector in this arena. This paper therefore, seeks to demonstrate the implication of MNCs in the fight against malaria in Africa south of the Sahara. For this objective to be obtained, the paper will analyse the contribution of six MNCs in this endeavor. The companies selected on the basis of their involvement in this fight will include ExxonMobil, Marathon Oil, Chevron, Heineken, Bayer, and Coca Cola.

Rationale for Multinational Corporations in the Fight Against Malaria in Africa

The private sector's stake in global health is increasingly apparent. Since the landmark 1994 *World Development Report* and the findings of the World Health Organization (WHO) Commission on Macroeconomics and Health (World Bank, 1994) it has been widely understood that a country's health and wealth are inextricably linked (Michaud, 2010). More recently, this linkage has been understood to apply beyond geographic borders. The UK Interministerial Group for Global Health noted that, "poor health is more than a threat to any one country's economic and political viability—it is a threat to the economic and political interest of all countries" (Primarolo et al., 2009). Further demonstrating the extent of this relationship between global health and wealth, the World Economic Forum's 2010 *Global Risks* report found that malaria disease poses one of the greatest threats to Africa's economic advancement, second only to asset price collapse (World Economic Forum, 2010). Improving health clearly contributes to the economic development and political stability of countries, which benefits companies operating in these environments in the long term.

In addition to its macroeconomic impact, investing in health is also in the interest of companies. As Robert Mallett, then senior vice president of Pfizer, once observed, "disease is destabilizing." In the pharmaceutical industry, for example, in countries with a high burden of disease, the state of health has an impact on research priorities, clinical trials, the recruitment of scientists and the infrastructure in which businesses operate. Moreover, the scarcity of human resources in health and marginal health systems impose costs on multinational corporations. Less than 10 years ago, for example, Coca-Cola routinely hired two workers for every job opening in Africa because it was understood that at least one worker would soon become terminally ill (Heim, 2010). As social partners in these countries, the private sector has a clear interest in working to improve global health—in stopping avoidable illness and death and in improving living conditions for individuals and populations—all of which promotes economic development, creates new markets, and improve the conditions under which firms operate.

There is also public value in this private-sector engagement in the fight against malaria. The challenges of ill health and poverty are so complex and resource intensive that states and other stakeholders cannot tackle them on their own. It is well known, for instance, that the global community faced a steep hill in achieving the Millennium Development Goals (MDGs) (awing, 2015). Though the targets set by the United Nations for the attainment of these goals were not met, corporations provided vital assistance in achieving the health MDGs directly and also by working in global partnerships to bring complementary resources and expertise to bear on problems. Businesses have long worked along these lines, and early adopters provide important models for further action.

Poor health and disease negatively impact businesses and economies. Malaria, in particular, is a leading cause of morbidity and mortality globally, and is perceived as a serious threat by most business leaders in endemic countries. Records of malaria cases in Europe in the late 19th and early 20th centuries indicate the disease was a costly and severe inhibitor of economic development. Greece, Spain and Italy all experienced rapid economic growth after eliminating malaria. But because studies to quantify the economic impact of malaria on business are both expensive and difficult to design and implement, data remain weak. Robust data on malaria morbidity and mortality are particularly hard to find. For instance, routine health-monitoring systems and post-mortem reports often attribute all deaths preceded by fever to malaria, regardless of the existence of other symptoms. An extensive review of the available literature (Goodman et al., 2000) reported in 2000 that "the weakness of the literature available on the economic impact of malaria is clearly evident.

No studies can be highlighted as models of good methodology." Nevertheless, there is a widespread perception that malaria has a strong negative effect on business. According to a 2001 study by Gallup and Sachs, the economies of countries with high malaria prevalence grew 1.3 percentage points less per year than other countries between 1965 and 1990 (Gallup & Sachs, 2000). A report published by the Global Health Initiative of the World Economic Forum in 2006 found that in Africa south of the Sahara, 72% of companies reported a negative impact on their business from malaria, with 39% perceiving these impacts to be serious (World Economic Forum, 2011). A recent survey conducted in Ghana, where malaria is endemic, found that 30% of business leaders reported that the disease had a strong negative impact on productivity (World Economic Forum, 2011). An earlier study estimated the cost of malaria-related lost production to be between 2% and 6% of Kenya's gross domestic product and between 1% and 5% of Nigeria's (Foster & Leighton, 1993). Malaria can affect businesses both directly, through the adverse impact on a firm's workforce, and indirectly, by damaging the economic environment in which they operate.

Most obviously, malaria is responsible for absenteeism, with patients often bedridden for several days. Illness in a spouse or child may force workers to stay at home to provide care. Adults who fall ill with malaria have been found to miss between one and five days of work per episode; they miss a similar period when caring for sick children (Breman et al., 2006). WHO reports a bigger impact, estimating that a malaria episode will cost the equivalent of 10 days of lost labour (World Health Organization, 1998). In a World Economic Forum study done in Ghana (Cook &, Sachs, 2000/2001), 63% of the 119 business leaders surveyed reported that the disease was causing absenteeism among employees.

Even after employees return to work, they are often less productive during the recovery period. Workers, especially those assigned physical tasks, may need several days to recapture previous levels of productivity. In a 2008 study in Zambia, workers reported that when returning to work after a malaria episode, they felt exhausted and less productive (McFarland, 2008). Productivity may also be impacted by low morale, as when an employee worries about his/her health or that of a spouse or child, or even greater, when illness leads to the death of a family member.

Malaria also affects health-care spending. Many larger companies provide health-care services to employees and their dependents. When employees fall ill with malaria, these companies bear the cost of medical care. Even when firms provide health care to employees, a significant portion of the cost associated with taking care of an ill family member will be carried at the household level. This again can lower worker morale and impact negatively on the economic environment in which businesses operate.

The impact of malaria on corporate reputation must also be considered. Today, companies worldwide feel a heightened pressure to behave in a socially responsible manner. Any failure to adequately respond to a malaria outbreak among its workers would not be considered good business practice and could adversely affect a firm's standing in the eyes of both the public and the market.

Malaria may also have ripple effects on the wider economy, not just the affected company. *Parasitemia* among a company's employees increases the potential for transmission to the community in general, thereby affecting the economy of the region. High malaria prevalence rates will likely lower human capital and obstruct the availability of local resources.

Malaria can depress economies by preventing or depleting savings and investments, reducing disposable incomes. People who do not expect to live long, healthy and happy lives have less incentive to save and invest in the local economy.

Malaria, therefore, can also contribute to lower tax revenues and potentially to lower public health budgets.

The direct and indirect benefits that companies can derive from malaria prevention and control—reduced absenteeism, increased worker productivity, decreased health-care spending, decreased community transmission and boosted local economies—have convinced some firms to take action. Some companies have focused on reducing the effects of the disease on workers and the local community; others have worked to establish good local relationships by instigating control programmes in the communities and areas where they work. Some firms have acted alone, while others have built public-private partnerships or provided funding to public-sector prevention initiatives. Many businesses have joined the regional and global fight against malaria to create positive health impacts while simultaneously earning a good corporate reputation that will help secure commercial relationships, alliances and markets.

These businesses include some who manufacture the malaria interventions that are used around the world as well as others who work in malaria-endemic settings and understand the local, regional and global consequences of the disease. The list of companies that have invested in malaria control is long and cannot be cited in one report; instead, this report focuses on the very quantifiable consequences from some of the businesses that have made direct investment in malaria control for their workforce and the surrounding communities.

Multinational corporations operating in Africa have historically played a significant role in malaria control. In the next section, the activities of eight multinational corporations are examined to provide insight into the impact that malaria and its control can have on business.

Chevron

Chevron Corporation is one of the largest integrated energy companies in the world. Headquartered in San Ramon, California, USA and conducting business in approximately 140 countries, the company is engaged in every aspect of the oil and natural gas industry, including exploration and production, refining, marketing and transportation, chemicals manufacturing and sales and power generation. In all of Chevron's global public health efforts, key stakeholders participate across the program in the development of project goals, tools, trainings and other resources. Some key stakeholders include employees from its human resources, executive leadership at corporate and company levels, peer health educators, local and corporate physicians and clinicians, representatives from its internal employee networks, and employees who have been affected by diseases.

Malaria poses a substantial threat in many of Chevron's growth regions. The company recognized the enormous human impact and social and economic risks that directly affect its employees and business due to malaria. Chevron's largest malaria efforts were in Nigeria (in the states of Lagos, Delta, Abuja and Rivers on-shore and off-shore) and Angola. In Angola, primary efforts were in the province of Cabinda, which is the center of production operations for Chevron, and the capital city of Luanda. In Angola, prior to 2004, malaria accounted for a total of 1,000 lost work days per year among Chevron employees. This was considered a massive loss and prompted Chevron's annual investment of $250,000 for anti-malaria efforts in Angola. Furthermore, malaria burden put a strain on the company's clinics, especially in the rainy season, during which more than five malaria cases were recorded per day, with children being the most affected. The disease's burden and financial strain created a good business case for the program and gained the immediate support of Chevron's management (Steve, 2010).

The objective of the malaria program was to improve disease awareness among the workforce and families, prevent malaria cases in the non-immune population (residents and dependents, rotators, business visitors), reduce malaria transmission and disease burden in the semi-immune (local) population, and minimize the serious outcomes from all malaria cases through early diagnosis and effective treatment. In sum, Chevron strived to ensure a consistent approach to malaria prevention across all locations operating in Africa south of the Sahara and Asia Pacific and raised global awareness through partnerships.

Chevron's partnership with leaders in malaria eradication resulted in the development of a malaria awareness kit, which provided guidelines to tackle malaria risk and apply protective measures in Africa south of the Sahara. This "ABCD Malaria Guide" kit was accessible to all employees and available in four languages.

- 90,000 insecticide treated window and door curtains and 14,500 nets were distributed to employees and their families.

- 3,000 nets were distributed alongside community education to individuals with HIV, sickle-cell anemic and pregnant women.

- Malaria teams conducted home visits to employees whose children presented malaria symptoms to ensure correct usage of bed nets and curtains (Steve, 2010).

Chevron's HIV/AIDS, malaria and tuberculosis efforts in the workplace and community programs were conducted with partners. As Chevron developed HIV/AIDS and malaria programs, the company was quick to recognize that its expertise was not in developing trainings around these diseases. Chevron partnered with recognized leaders in HIV/AIDS and malaria control to help guide planning, development and implementation. By partnering with relevant NGOs and companies to harness external expertise and best practices, a comprehensive program for global public health was created, which meets high external standards while maintaining consistency with Chevron protocols. Chevron's partnership approach creates locally relevant programs and provides increased opportunities to leverage funds and knowledge that result in greater program impact.

At the regional and local business level, Chevron worked with partners such as the Corporate Alliance on Malaria for Africa (CAMA), the Global Fund and the Global Business Coalition (GBC). Chevron's partnership with the Global Fund resulted in five million dollars granted to Global Fund-supported anti-malaria efforts in Angola.

Chevron's comprehensive malaria program was based on Awareness, Bite Prevention, Chemoprophylaxis and early Diagnosis (ABCD). The company developed a malaria awareness kit that was accessible to all employees and provided guidance on the malaria risk in Africa south of the Sahara and instructions on disease prevention. The kit included an "ABCD Malaria Guide." web and CD-based learning video, Bite Prevention Brochure, chemoprophylaxis Q&A, online quizzes and a Chevron malaria hotline. In order to provide adequate information for employees and community members, malaria awareness materials were available in four languages with local and native speaker evaluations conducted to ensure accuracy.

- Chevron partnered with local governments in a community effort to distribute 14,500 long-lasting insecticide-treated nets (LLINs) to employees and dependents and an additional 14,500 LLINs to community members. The partnership also provided in-home and school-based malaria prevention education. Follow-up visits were conducted, as needed, to educate the community about stagnant water, the environment, malaria prevention and treatment. In 2007 and 2008, with its partner Verstergaard Frandsen, Chevron began distributing 90,000 insecticide-treated window and door curtains, the largest roll-out of this kind and the first in the world.

- Chevron took very seriously its role as a corporate contributor to meeting the MDGs in health. As such, it focused its efforts accordingly. Chevron seeks the best quality input from leading experts to help guide its health initiatives.

- Chevron conducted a high-quality selection process for peer health educators that helped it achieve better results. Chevron also embarked on a continual search for best practices among stakeholders throughout the development process and brought them on board as their contributions were identified.

- Chevron's corporate health policies ensure that all employees are well informed and empowered to protect themselves against HIV/AIDS, tuberculosis, malaria and other diseases. Through an integrated approach to disease management the company eliminates isolated efforts and instead works to safeguard total employee health.

Heineken

Founded in 1864, Heineken is one of the world's great brewers with a commitment to growth and independence. With Heineken as its principal international brand, the Heineken group is known for its specialty in brewing and selling more than 200 international premium, regional, local and specialty beers and ciders through a global network of distributors and 125 breweries in more than 70 countries.

The small nineteenth century local Amsterdam brewer has grown into a worldwide business with a global brand, employing almost 100,000 people. Heineken's presence in Africa has been long standing. It employs over 10,000 people and provides health care for close to 30,000 people in Africa south of the Sahara.

Having operated in Africa over the decades, Heineken recognized the health burden many communities face. As a result, the *Heineken Africa Foundation* was launched to foster and improve health in the communities of Africa south of the Sahara. Its key malaria programs were focused in high-risk, malaria-endemic countries like Rwanda, Democratic Republic of Congo and Nigeria, where Heineken focuses on implementing projects aimed at promoting universal coverage of mosquito nets and eliminating malaria. Through partnerships with stakeholders such as the National Malaria Control Programs, Ministry of Health, Utexrwa, Bayer ES, UNIDO, and Bralirwa, a Heineken Rwandan subsidiary, the Heineken Africa Foundation engaged in interventions that were aimed at promoting sustained behavior change, building local capacity and creating sustainable employment. For its workforce, Heineken implemented malaria initiatives for employees and family members in six African countries (www.heineken.com, 2015).

Heineken provided health care for its workforce in Burundi, Nigeria, Rwanda, Sierra Leone, The Republic of Congo and the Democratic Republic of the Congo (DRC). In these countries' brewery clinics, malaria prevention and treatment was part of the health programs for staff members and their families. Malaria control was done in line with international policies. In DRC for instance, interventions include distribution at recruitment and regular re-supply of long-lasting insecticide-treated nets (LLINs) vector control activities in brewery clinics located in Kinshasa, Boma, Kisangani, Mbandaka, Bukavu and Lubumbashi, and use of microscopy and quality control. Laboratory confirmation of clinical diagnosis ruled out the problem of unconfirmed and 'presumptive cases' that was common in most DRC Hospitals (Clark, 2014).

For malaria treatment, ACT was normally used, but Quinine IV was sometimes used when parenteral artesunate and artemisinine are difficult to acquire. Sulphadoxine/pyrimethamine intermittent preventive treatment was administered during pregnancy in some countries depending on the national guidelines. In recent years, the number of cases of malaria in employees and family members has decreased steadily. Unfortunately in 2010, the total number of cases of malaria increased again, due to more malaria transmission in the community (Clark, 2014).

In Nigeria, Heineken implemented the "Kill Malaria Dead" project in Imagbon and Iloti communities located in Odogbolu and Ijebu-Ode local government areas, both of which lacked access to adequate health facilities. Strategies employed in these communities focused on building capacity for behavior change through information, education and communication (IEC) materials, like flyers, banners, T-shirts and posters. It promoted proper personal hygiene, sanitation, clean drainage and mosquito net use.

Such IEC distributions were done through special events and campaigns organized by and reaching local people. A total of 4,500 nets were projected to be distributed over a three-year period. Furthermore, Heineken recognized the need to bridge the diagnostic gap by equipping and furnishing clinics in each community with medical malaria parasite kit for diagnosis and analysis.

In Rwanda, the malaria project aimed at promoting universal bed net coverage through effective distribution. It entailed the distribution of a total of 140,000 local bed nets targeted at communities around Heineken Brewery in Kigali and other highly endemic areas. Heineken formed partnerships with other businesses and like-minded stakeholders. A local textile company, Utexrwa (Usine Textile du Rwanda), was identified as the producer of the bed nets. In order to build local capacity within Utexrwa, Bayer Environmental Science agreed to transfer the technology on how to produce insecticide coated polyester nets to Utexrwa. Meanwhile, UNIDO (United Nations Industrial Development Organization) trained the staff of UTEXRWA, as well as the 100-150 employees that were engaged for this cause.

To ensure efficient delivery of these bed nets, Heineken capitalized on the distribution networks of the Rwandan Ministry of Health. Bralirwa, the beer and soft-drink producer and a daughter-company of Heineken International, had the responsibility for distributing the first 140,000 bed nets that were produced by Utexrwa. Bralirwa provided resources in terms of logistics, distribution and management to accomplish this feat (Clark, 2014).

By establishing collaboration and partnerships over a broad range of stakeholders like Bayer ES, Utexrwa, Bralirwa, Ministry of Health and UNIDO, Heineken harnessed different levels of support ranging from financial commitment, technology transfer, logistics support to technical assistance. Collaborating with partners with like interests enhanced achievement of set objectives and goals.

CSR-driven organizational leadership at Heineken was a key factor in the success of the program, especially in terms of commitment to community health, investment and use of technology. Heineken acknowledged that the complete integration of the malaria intervention into the national anti-malaria program made for easy evaluation and follow-up in terms of awareness creation, public sensitization, bed net distribution and evaluation of bed net usage, and allowed it to use the existing scheme created by the National Malaria Control Program.

Heineken's engagement of various local stakeholders in the project enabled the program to be viewed as a locally-owned project, thereby promoting effective stakeholders' contributions and partnerships. Locally produced bed nets would be easily affordable and available for Rwandese.

Furthermore, since the business partners foresaw a potential spin-off and production scale-up to neighboring countries, there were good prospects for increased job creation and long-term local economic improvement. The general technology transfer for the production of the bed nets carried out by Bayer enabled the Rwandan company to participate in international competitive bidding processes (tenders) targeted to African countries.

Lafarge

Lafarge is a multinational company producing and selling building materials and is the world leader for cement production. It ranks first in aggregate production and third in the production of concretes and gypsum. The Lafarge group operates in 13 African countries where it employs around 12,500 people, representing about 16% of its global workforce. Africa south of the Sahara represents about 10% of its group sales, which makes it a region of importance, especially in consideration of its potential as a fast growing market with a strong demand for Lafarge products.

At Lafarge, health and safety is a top priority, embodied in the company's ambition to be among the healthiest and safest companies in the world and to be recognized as such by all stakeholders. Lafarge's strong conviction is at the core of its Principles of Action that states, "There cannot be a sustainable leader without respect for the environment and social responsibility" (www.lafarge.com , 2015). The company recognizes that health is part of the business strategy and that emerging markets are essential for Lafarge's future, since they play an equally significant role in the company's sustainability strategy. In order to address inequalities and expectations in low and middle-income countries, Lafarge strives to create value for new staff, and health is part of this strategy, as it is directly linked to productivity and profitability.

Health has always been a concern for Lafarge and has been historically managed at the business unit level. With the integration of Blue Circle in 2001, Lafarge faced new health issues and quickly became involved in efforts to prevent and treat HIV/AIDS in Africa south of the Sahara nations. Since 2001, its mobilization efforts have resulted in a dramatic reduction in the mortality rate in its business units. However, malaria continued to affect employees and their families in nine countries of operation. Malaria was the second largest reason for consultations to the company clinics as it caused 45% of absenteeism in Nigeria and 32% in Cameroon. Since malaria and HIV/AIDS are not the only diseases impacting its activities, the company has moved towards a more comprehensive health strategy that include insurance, systematic periodic medical check-ups, checking of chronic and degenerative diseases and regular quality assessments of its retainer hospitals.

Lafarge developed a comprehensive Malaria control Road Map that targeted at its employees, their families and also contractors. Lafarge's malaria control program includes awareness creation, malaria control in pregnancy, vector control, diagnosis, anti-malarial treatment and home-based management of malaria.

Lafarge's malaria road map is about prevention and treatment. All business units are expected to have awareness and education programs in place, provide treated nets to their entire staff, and implement adequate vector control measures in their working sites and housing estates. In every site, Lafarge's malaria program covers contractors and employees' families. In two pilot business units (Benin and Uganda), Lafarge extended its malaria program to the local communities. This is based on the recognition that only large-scale prevention programs can have an impact on the mosquito population and individual behavior, whether in terms of net coverage or indoor residual spraying (IRS). From the treatment point of view, all sites also provided adequate prophylactic treatment to all pregnant women, performed systematic bio-diagnosis and provided recommended anti-malaria treatments.

Emphasis was therefore placed on the "prevention is better than cure" slogan. Lafarge believes that by protecting its stakeholders from malaria, it will not only decrease the burden of patients in its clinics, but will also achieve positive impacts on medical expenses.

Peer educators are essential for any employee health program. In Lafarge, these are employee volunteers who use education and communication to ensure that their colleagues and other members of the community are aware of the local health challenges. They do not receive extra pay for the job they carry out. In Lafarge, there is approximately one peer educator per 20 employees. This group has been incredibly valuable for initiating dialogue with various groups.
For Lafarge, building partnerships with public or non-governmental organizations to deal with health related issues was paramount as the company was quick to realize that health does not fall under its core competency. For the public organizations on the other hand, forming partnership with Lafarge created a forum and an entry point to reach a network of people through its supply chain: contractors, suppliers, etc. Such private-public partnership constituted a good entry point to engage a large number of people, who otherwise would be difficult to reach (e.g. truck drivers – a mobile population).

Though beneficial in the end, partnerships can prove difficult to build at the beginning while implementing malaria programs, as there are challenges associated with identifying potential partners. There are also challenges associated with reaching out to target groups. For instance, Lafarge's pilot unit sites (in Cameroon) are located in remote areas where the populations are often "forgotten" because they are very far from towns (sometimes more than a two hour driving distance from the main towns of Garoua and Maroua). In both cases, the company was persistent in reaching out to various organizations and was continually referred from one organization to another, until it found a fit with partners in an existing project. On a global level, Lafarge created partnerships with worldwide organizations, such as CARE and GBC, and maintained long-lasting local relationships with strong and sustaining partners, such as GTZ, USAID and the GlaxoSmithKline Foundation in the fight against malaria in Africa.

Marathon Oil

Marathon Oil Corporation is an integrated international energy company engaged in exploration and production of oil sands mining, integrated gas and refining, marketing and transportation operations. Marathon Oil, which is based in Houston, has principal operations in the United States, Angola, Canada, Equatorial Guinea, Indonesia, Libya, Iraq, Norway, Poland and the United Kingdom. Marathon Oil is the fourth largest United States-based integrated oil company and the nation's fifth largest refiner.

Marathon Oil and its business partners worked with the government to fight malaria in its operations on Bioko Island in Equatorial Guinea through the Ministry of Health and Social Well-being. An implementation team comprised of leading health specialists from Medical Care Development International (MCDI), London School of Hygiene and Tropical Medicine, Yale University, Texas A&M University, Cruz Roja and the Harvard School of Public Health designed the Bioko Island Malaria Control Program (BIMCP) to interrupt and then drastically reduce the transmission of malaria on Bioko Island. BIMCP employs five main interventions: vector control; improved case management; information, education and communication (IEC); capacity building; and monitoring and evaluation (www.marathon.com, 2015).

The principal intervention of the BIMCP is vector control through indoor residual spraying, which breaks the cycle of infected mosquitoes continually infecting new victims. The spraying of all vertical surfaces with insecticides has been extremely effective in reducing the transmission of malaria. The first round of spraying involved close to 100,000 structures, while the current spray round is targeting 240,000 structures. Successive rounds of spraying conducted semi-annually have virtually eliminated one of the principal vectors, the Anopheles funestus mosquito, and have substantially reduced the level of infectivity among the other two vectors, Anopheles gambiae and Anopheles melas.

The second intervention of the BIMCP is geared toward improved case management. Medical workers are trained to diagnose and treat malaria using new protocols that rely on artemisinin-based combination (ACT) drug therapies. This approach is aimed at overcoming resistance to longstanding treatments based on the use of a single drug, such as chloroquine. In 2005, Marathon Oil and its partners provided funding to underwrite the cost of distributing ACT free to children under fifteen years of age and pregnant women – the most vulnerable groups affected by malaria. In 2010, the Government authorized universal free provision of ACTs, as well as the universal free provision of malaria diagnosis. This is expected to substantially remove any barriers to access effective care.

From the outset, a major project objective has been to build sufficient human and institutional capacity in Equatorial Guinea to sustain the interventions when BIMCP eventually ends. In this regard, there has been continual focus on integration of project management with the Ministry of Health and Social Welfare, including planning for progressive transfer of project management responsibility to the Equatorial Guinea National Malaria Control Program (NMCP). To this end, a cadre of new national program officers for the NMCP is currently receiving training overseas. They will become an integral part of the BIMCP technical team and subsequently assume program management responsibilities in a systematic and benchmarked manner.

The third major component is surveillance and evaluation. During the first phase of the project, window traps located at representative sites around the island enabled the BIMCP to monitor effectiveness in terms of reduction in mosquito population and their level of infectivity. Though this proved to be effective for several years, the reduced abundance of mosquitoes due to scaled-up control measures necessitated the introduction of an enhanced vector surveillance approach using a combination of human landing catches and light emitting diode (LED) light traps. In addition, trapping is now conducted both indoors and outdoors. These same surveillance sites provide the basis for a crucial early warning system to help avoid a resurgence of malaria in the future.

Annual blood tests for malaria-causing parasites among children and pregnant women enable the BIMCP to monitor effectiveness in the target population. Also, a series of household surveys are undertaken prior to initiating indoor residual spraying in addition to monitoring case management at the mid-point and end of each project cycle. These surveys evaluate the impact of the project on under-five mortality, the incidence of malaria, the demand for treatment and the economic welfare of the Bioko Island population. This protocol has become the model for the national malaria control program.

To increase the effectiveness of the BIMCP program, the company developed elaborate strategies to promote acceptance of indoor residual spraying, bed net usage, malaria treatment and the use of intermittent preventive treatment of malaria during pregnancy (IPTp) for expectant mothers. An integrated set of information, education and communication (IEC) materials were therefore developed to explain why interventions were necessary and to create awareness about the project, prevention and treatment of malaria. These communications materials used multiple languages and various methods to educate, remind and encourage the local population and health providers alike. Local focus groups were used to pre-test these materials and ensure they were relevant for the diverse communities on Bioko Island (Dr. Linder, 2015).

The initial investment of $15.8 million dollars kicked off the plan for a robust malaria initiative in 2004. In autumn of 2008, Marathon Oil and partners, including the Government of Equatorial Guinea, announced the extension of BIMCP for an additional five years, with a $27.9 million commitment to carry the program through 2013.

A major focus of the second phase of the project will be to develop capacity within the Equatorial Guinea National Malaria Control Program. Marathon Oil and partners also helped the Equatorial Guinea Government apply the project's interventions to mainland Equatorial Guinea through a multi-year $26 million grant from the Global Fund and an additional Marathon Oil Foundation grant of $1 million. This has enabled the Equatorial Guinea Government to establish one of the first nationwide integrated malaria control projects in Africa (Maas, 2015).

Since the malaria program was geared toward reducing malaria transmission in every household, the need to ensure community participation was paramount. Through focus group discussions, community members gave feedback that resulted in effective design and production of IEC materials. Furthermore, emphasis was laid on strengthening local capacity and project management skills among health workers to sustain the program beyond 2013. In general, since large scale community awareness and involvement was especially beneficial for the local health resource personnel responsible for case management (diagnosis and new treatment protocols), training of local health providers was conducted in conjunction with various community education and communication programs.

With focus on eradicating the vector-carrying parasites, the BIMCP used indoor residual spraying to eliminate disease-carrying mosquito species. In addition, surveillance and monitoring systems were put in place to measure program effectiveness and to issue early warning messages on malaria resurgence.

Sanofi-Aventis

The Corporate Alliance on Malaria in Africa (CAMA) was formed in 2006 by 12 multinational companies with operations in Africa. CAMA serves as a forum for companies to work together with governments and civil society in malaria-endemic and epidemic-prone countries to reduce the impact of malaria. CAMA supports scaled-up malaria control interventions that are sustainable and will achieve the maximum desired impact at country level.

Sanofi-Aventis, in partnership with Drugs for Neglected Diseases initiative (DNDi), through the Artesunate-Amodiaquine (ASAQ) program, developed a new antimalarial combination drug treatment that is designed to be available to the highest possible number of patients at low cost. This new antimalarial combination drug, which meets World Health Organization (WHO) requirements, was first registered in 2007 under the name Artesunate- Amodiaquine Winthrop® (ASAQ) for public markets, and the brand name Coarsucam® for private markets. The aim was to provide children and adults in Africa south of the Sahara with a simplified dosing regimen that met the WHO recommendation for use of fixed-dose combinations of antimalarials. Because children are the most vulnerable to malaria, ASAQ tablets are soluble and can therefore be easily administered to small children.

The ASAQ development program included all activities that are usually involved in the development of a new pharmaceutical. Many of these activities represent the core competences of a research-based pharmaceutical company and include:

1) Industrial pharmaceutical development of processes required to reach production on an industrial scale at the Maphar – Sanofi-Aventis plant in Casablanca, Morocco.

2) Scientific: Pre-clinical pharmaco-toxicology studies were designed to further document the safety profile of AS+AQ in animals, as per the latest international requirements.

3) Clinical development: Clinical studies were set up to document the drug's efficacy and safety in humans.

4) Regulatory: Registration files were prepared to meet the requirement of regulatory agencies and the WHO.

Sanofi-Aventis is a global healthcare company and a world leader in vaccines that was formed in 2004 when Sanofi-Synthélabo acquired Aventis. Engaged in the production of a broad portfolio of pharmaceutical products, such as prescription medicines, consumer healthcare (OTC) and generics, Sanofi-Aventis has a worldwide presence that cuts across both traditional and emerging markets. The company is present in over 100 countries and has a workforce of nearly 100,000 employees. The company's range of essential healthcare assets, including a broad-based product portfolio is focused on patients' needs (www.sanofi.com, 2015).

Sanofi-Aventis marketed extensively in preparations for the launch of ASAQ and its marketing in endemic countries. This included highly comprehensive, non-promotional information, education and communication (IEC) set of tools to provide up-to-date information on the comprehensive management of malaria (prevention, diagnosis and treatment) through support adapted to all stakeholders. Color codes and pictograms were placed on blisters to minimize the risk of confusion between dosages and for easy directional use for those with minimum or no literacy skills.

ASAQ was designed with a new artesunate-amodiaquine ratio derived from a large demographic database of African adults and children and formulated to minimize the risk of over- and under-dosage. The company has also implemented follow-up clinical studies, including an innovative and ambitious Risk Management Plan. ASAQ is the first drug for which a "Risk Management Plan" has been set up to monitor safety and efficacy in real-life conditions in Africa south of the Sahara in close collaboration with the World Health Organization. It is hoped that this will help build the expertise and capacity in Africa that will enable monitoring of the safety of other drugs.

While Sanofi-Aventis made use of its core competencies in terms of drug development, regulatory affairs, drug manufacturing, marketing and commercial operations, it still required a broad range of partnerships to enable Sanofi-Aventis' success in achieving results. These partnerships include: *DNDi:* Its decisive contribution was the development of the pharmaceutical formulation of ASAQ and its assistance in several pre-clinical and clinical studies; *WHO:* It played an important role during the pre-qualification process and the design phase of the ASAQ Risk Management Plan; *Medicines for Malaria Venture:* It helped finance the main study of the field ASAQ Risk Management Plan in Côte d'Ivoire and *Malaria Control Programs:* Many of Sanofi-Aventis' African country offices were involved in several phases of the project.

Sanofi-Aventis is a long-standing provider of antimalarial drugs. In the early 2000s, Sanofi-Aventis realized that its usual business model needed readjusting to meet the demands of patients in developing countries. At the same time, the WHO was advocating for new fixed-dose combinations to be made widely available, and new partners, such as DNDi, emerged. Sanofi-Aventis' motivation combined a sense of responsibility towards African patients and a clear long-term business objective in increasing its presence in developing and emerging markets by helping malaria-endemic countries break the vicious circle of disease and poverty.

Motivated by a commitment to make antimalarial drugs available and accessible, the company and DNDi agreed on a tiered-pricing policy. Through this policy, the target price for a three-day treatment course of ASAQ Winthrop was set at 1 dollar for adults and 50 cents for children in the public markets, while the same drug is provided, under a different brand name (Coarsucam) at market prices through private sector pharmacies. This tiered-pricing policy is designed to be economically sustainable and therefore promote sustainable affordability and universal treatment access over the long term.

ExxonMobil

ExxonMobil is the world's largest publicly-traded international oil and gas company. The company employs more than 80,000 people and conducts business in more than 200 countries and territories worldwide, including a significant number of countries where one or more forms of malaria exist. ExxonMobil has witnessed first-hand the devastating human and economic toll malaria takes on its workforce, their families, and the communities where it operates. Encouraged by the signing of the Abuja Declaration and the Millennium Development Goals, the company took seriously the call for the private sector to join the fight against diseases of poverty, which kill millions.

Within the boundaries of its worksites, ExxonMobil has drawn on robust science and proven best practices to develop a risk-based approach to malaria control. By applying sound business principles, ExxonMobil has created a comprehensive Malaria Control Program (MCP) that has evolved over a decade of operational experience in Africa and has continuously improved with the latest advances in science and technology.

The MCP provides all employees and contractors working in malaria risk areas, their spouses and other dependents, with MCP resources including educational materials, preventive medicines, tools such as bed nets and diagnostic services. MCP resources are available to contractors who plan to implement comparable programmes that are at least as stringent as the MCP.

ExxonMobil encourages all personnel to take active measures to avoid bites, including proper use of effective repellants, wearing long sleeves/pants, and, when necessary, using insecticide-treated clothing and insecticide-treated bed nets. Risk-based vector control initiatives that ExxonMobil implements include: indoor residual insecticide spraying, environmental management of standing water and control of mosquito breeding sites on ExxonMobil-controlled facilities. The company is also developing an innovative programme that will rely on advances in geographic information systems technology to strengthen vector control efforts for the mutual benefit of the targeted communities and ExxonMobil.

While ExxonMobil works to prevent and treat malaria through the provision of bed nets and drugs, it also strongly believes that the global community must work together to end this devastating epidemic. Along with The Coca-Cola Africa Foundation, Standard Chartered Bank, Starr International Foundation, White Flowers Foundation and nongovernmental organization (NGO) partner Episcopal Relief & Development, ExxonMobil is a key partner in the NetsforLife partnership. The partnership collaborates closely with national malaria programmes to train and mobilize thousands of volunteers. The volunteers, in turn, distribute bed nets and teach people how and why to use them and how to recognize malaria symptoms. From 2005 to 2015, NetsforLife distributed over two million bed nets and trained nearly 10 000 volunteers (www.rollbackmalaria.org, 2014).

Through its ExxonMobil Malaria Initiative (EMMI), the ExxonMobil Foundation supports the work of several product development public-private partnerships that research and develop new medicines and vaccines to combat malaria. EMMI supports disease prevention, control and treatment programmes mainly focused on malaria. This signature initiative of the ExxonMobil Foundation reaches throughout Africa south of the Sahara with a priority focus in Nigeria, Chad, Cameroon, Equatorial Guinea and Angola, countries in which ExxonMobil has significant operations and is a member of the community.

Through EMMI, ExxonMobil has also joined in several advocacy activities, including playing a leadership role in the December 2006 White House Summit, providing a grant to the World Economic Forum's Global Health Initiative to develop guidelines on corporate involvement to address malaria and other neglected diseases and sponsoring TIME magazine's 2005 Global Health Summit which reached out to the leaders of many influential corporations. Projects that ExxonMobil has supported have also raised the awareness of the general public, such as a 2005 concert in Senegal featuring Youssou N'Dour and a 2006 World Affairs Council event featuring Bono.

In addition to awareness-raising campaigns, ExxonMobil has also worked to integrate its activities with existing campaigns to educate communities and provide them with tools to prevent malaria. Most notably, the EMMI worked with the American Red Cross, as part of the Measles Malaria Partnership, to support a pilot project that used an ongoing measles vaccination campaign platform to facilitate large-scale distribution of bed nets. In the pilot project, during a one-week campaign in Ghana, every parent who accompanied a child under five years old to a measles vaccination post in the remote Lawra District, one of the poorest in Africa, received a bed net free of charge. Some 15 000 nets were distributed. Research showed that prior to the campaign, only 4.4% of households used bed nets. Post-campaign data showed that 80% of children were sleeping under bed nets.

In the workplace, ExxonMobil's programmes that have reduced the number of cases of malaria among the non-immune and the number of serious cases among the semi-immune have helped keep its workforce healthy and productive. Since the comprehensive company-wide MCP was introduced in 2001, malaria incidence among the ExxonMobil employee and contractor population has been among the lowest for comparative operations. In the last four years, ExxonMobil has recorded zero serious cases in semi-immune personnel, representing over 8000 person-years of risk and three cases of malaria in non-immune personnel, representing 4000 person-years of risk.

After implementing the Malaria Chemoprophylaxis Compliance Program (MCCP) in Chad and Cameroon, the rate of malaria cases among non-immune workers decreased 50% in the first year. Results from more than 7000 MCCP-analyzed specimens have shown there is a high level of medication compliance and the MCCP component appears to be contributing to a decreasing number of malaria cases in non-immune people. In the community, efforts to support prevention, control and treatment campaigns have had great success, including improving the quality of life for Africans, which benefits both ExxonMobil's workforce and business operations; aligning with the stated health goals of African governments; strengthening the capacity of indigenous health service providers and NGOs so as to promote sustainability of efforts to manage the malaria pandemic; and bolstering ExxonMobil's community relationships.

Conclusion

On both the private and public sides of health care issues, attitudes have changed in recent years— largely, we believe, for the better. There are those who believe that a commitment to universal public health care is the preferred answer to improving access and quality of care for the millions of people in underserved populations around the world. No one would argue that we shouldn't continue to invest in public provision of health care, particularly in lower- and middle-income countries whose citizens lack access to proven public health interventions. But the best way forward is one that combines public- and private-sector approaches, drawing on complementary capabilities and resources.

There are signs that a new consensus may be converging around this principle, as donor governments, developing countries, emerging markets, and their partners in the private sector and civil society gain more experience in collaboration and see the opportunities to accomplish more. The new strategy of the U.S. Department of Health and Human Services (HHS), issued in October 2011, notes that HHS "can be most effective outside the borders of the United States by partnering with others [including the private sector] to maximize the impact and sustainability of global health efforts." And a year earlier, the G20 issued its Seoul Development Consensus for Shared Growth— which saw the private sector as an engine of that growth, "advancing innovation, creating wealth, income and jobs, mobilizing domestic resources, and in turn contributing to poverty reduction"— and convened the first B20, a forum of more than 100 business leaders from G20 countries, to explore how the public and private sectors could collaborate across a range of issues, including health.[57] Some of the G20 countries seem even more market-oriented than the G8, so it will be interesting to see how the role of the private sector in global health evolves in different regions over the coming years.

As this new role for businesses continues to take shape, there is a need to think carefully about rules of the road, to ensure that leveraging business assets and skills is done with appropriate attention to transparency, equity, and accountability. Best practices and new norms are already emerging to encourage businesses at all levels to expand their engagements with global health. By doing so in a manner that builds on country ownership and helps to develop country capacity, the private sector will be able to make critical contributions to improving global health. Working together, we can make a real difference—with important and measurable improvements in the health and lives of people living in poverty around the world.

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