



FIGHTING MALARIA

Malaria is the single greatest killer of African children, claiming the lives of roughly one million every year. In addition to the terrible toll it takes on families, malaria overwhelms struggling health systems, accounting for as many as half of all hospital admissions in some countries, and costs African countries an estimated \$12 billion every year in lost productivity. As a result, the Clinton HIV/AIDS Initiative (CHAI) expanded its work in 2007 to help increase access to malaria treatment. Building on its successful approaches to fighting HIV/AIDS, its work has focused on scaling up effective treatment and diagnosis and freeing populations from malaria.

Scaling Up Effective Treatment and Diagnosis

Increasing Access at the Community Level

In the last 20 years, drugs such as chloroquine that formed the backbone of malaria efforts have increasingly failed to cure the disease as the malaria parasite has developed resistance to their effects. Fortunately, effective alternatives, known as artemisinin-based combination therapies (ACTs), are now available. ACTs rapidly cure malaria and impede the development of resistance. While governments have made progress distributing ACTs through the public health system, the majority of malaria patients seek treatment from private shops, but are unable to access these drugs due to their relatively high retail price (\$8-10). As a result, millions of patients continue to rely on ineffective or inappropriate therapies sold at a fraction of the price (\$0.30-0.40).

CHAI is working with countries with the highest burdens of malaria to expand ACT access through both the private and public sectors. CHAI initiated this work in Tanzania where more than half of the 18 million people who contract malaria every year seek treatment from private shops. Together with the Tanzanian Government and Population Services International, CHAI is piloting a subsidy to make high quality ACTs available to rural poor patients in the private sector. In this project, CHAI purchases ACTs from the manufacturer, and sells them at a 95 percent reduced price to a private wholesaler. This wholesaler then

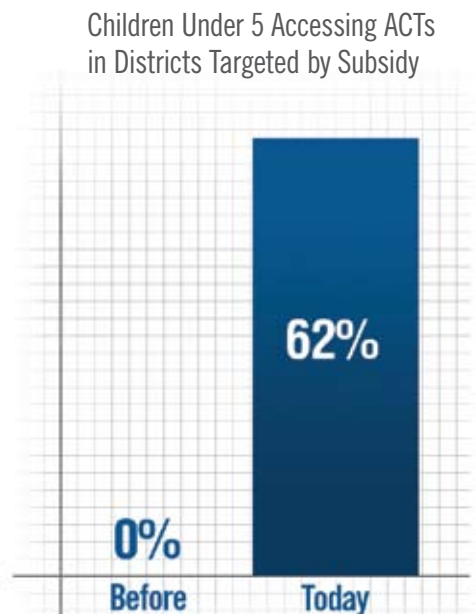
CHAI's ACT subsidy pilot in Tanzania combined price reductions with better marketing and training to dramatically increase access.



Supporting Interventions



Improved packaging, including pictures and instructions in the native Kiswahili language, has enabled mothers in the pilot study area to administer these medicines to their children.



distributes the drugs to rural drug shops in two districts through normal channels alongside efforts by CHAI's partners to educate patients and shopkeepers about the importance of ACTs. In order to help patients take the drugs correctly, the pills are placed in redesigned packaging with simplified instructions in the local language before distribution. The initial findings of the pilot program show impact in only a short amount of time, with the price of ACTs to patients dropping from \$10 to \$0.50 and the number of patients accessing these drugs increasing from less than one percent to 45 percent.

The Tanzania pilot project is already having a broad impact. The Tanzanian government plans to scale up the approach across the entire country in late 2008 with support from the Global Fund to Fight AIDS, Tuberculosis, and Malaria, drawing on the lessons learned from the pilot and with additional support from CHAI. CHAI continues to apply the findings of the pilot to guide the design of similar efforts in other countries, including Uganda and Zambia. Additionally, CHAI is supporting the technical design for a proposed global subsidy for ACTs, known as the Affordable Medicines Facility – malaria, which would reach countries and patients around the world.



CHAI's simplified ACT packaging on display at a rural drug shop.

Expanding Availability of High-Quality, Low-Price Therapies

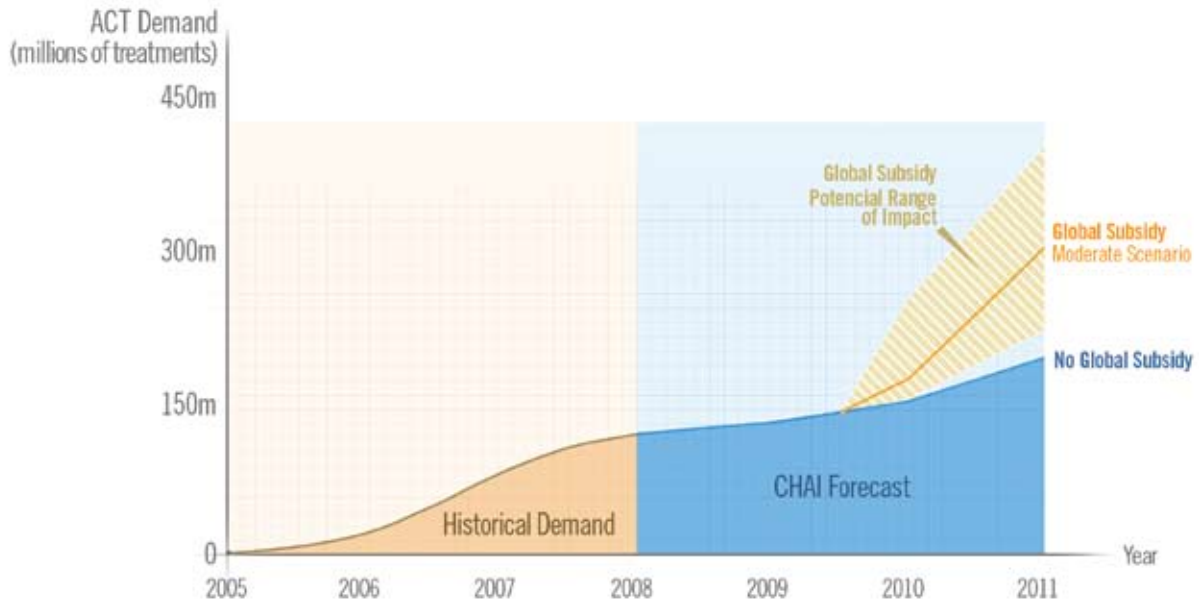
Building on its success working with pharmaceutical companies to ensure affordable treatment for HIV-positive patients in the developing world, CHAI has been actively working with drug manufacturers to increase the number of suppliers of high-quality ACTs, reduce prices to countries and patients, and ensure sustainable supply of these essential drugs to meet growing demand.

Production of ACTs presents unique challenges compared to other medicines. The key ingredient artemisinin is an extract from a plant which must be planted and cultivated, a process which can take 12-20 months. As a result, it is difficult for farmers and producers to respond to sudden changes in the market, resulting in wide swings in production in pricing. For example, between 2004 and 2007, rapid increases in demand and inaccurate forecasting caused prices of artemisinin to vary by over 700 percent (from a low of \$150 per kilo to a high of \$1,100 per kilo). This dramatic volatility threatens to drive suppliers out of the market and undermine the sustainable production of ACTs and, therefore, treatment access for malaria patients.

CHAI's work to address these issues has begun to show results, including:

- **Increasing predictability** - CHAI recently released the first-ever robust forecast of demand, enabling manufacturers to plan production more accurately, thereby preventing the price fluctuations and excess stocks that have plagued the industry in recent years.
- **Diversifying supply** - By working closely with manufacturers, technical experts, countries and regulators, CHAI is accelerating the rate at which ACT manufacturers are achieving international quality standards.
- **Reducing volatility** - Building on its demand forecast, CHAI recently completed agreements with manufacturers at all levels of the ACT supply chain – from the extractors to the manufacturers of the active pharmaceutical ingredients and final drug products. Taken together, these agreements are structured to reduce the volatility of artemisinin prices, thereby reducing financial risks for all manufacturers within the supply chain and creating a more sustainable environment for the supply of these life saving drugs. By reducing volatility, CHAI is enabling manufacturers who recognize the moral imperative to support universal access to malaria drugs to commit to lower prices, starting with a 30 percent reduction in the price of a key ACT called artesunate-amodiaquine.

ACT demand will at least double over the coming four years and could grow as much as 327 percent if a global ACT subsidy is launched.



The CHAI price ceiling keeps artemisinin and ACT prices low. Without the ceiling, artemisinin price spikes could drive up ACT prices more than 250%.



Saving Lives Through Appropriate Diagnosis

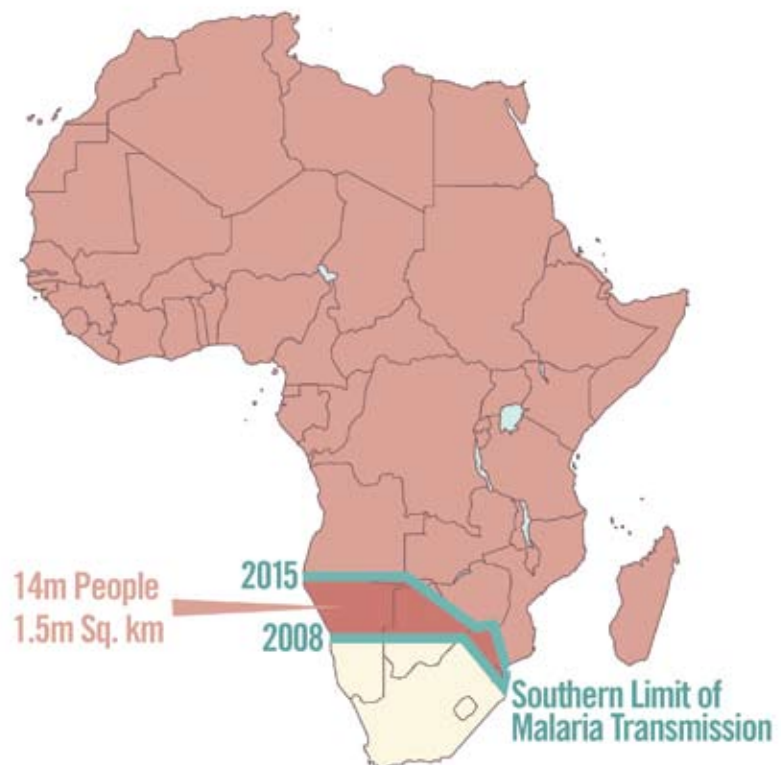
Studies have shown that 40-95 percent of the patients that are diagnosed with malaria are not actually infected with the disease, but rather suffering from some other illness. This misdiagnosis not only wastes resources as expensive drugs are dispensed unnecessarily, but many patients end up dying from the ailments that went untreated. Effective tools to accurately diagnosis malaria, including rapid diagnostic tests (RDTs), are available, but are often of poor quality, misused by health care workers, or, as is the case in many health facilities, not used at all.

Based off its successes with improving HIV/AIDS diagnostics, CHAI is working to increase access to accurate diagnostics for countries and patients through a two-pronged approach: working with manufacturers and key partner organizations to understand and improve the quality of RDTs and enable rapid scale-up of production. At the same time, CHAI is identifying where the biggest challenges to effective diagnosis begin at a country level and supporting governments and health workers to quickly overcome them.

Freeing Populations from Malaria

Appropriately so, reducing the burden of malaria in the hardest hit countries, most dramatically in African countries near the equator, is one of the top priorities of the global health community. At the same time, however, a growing number of countries at the edges of the malaria zone are seeking to completely eliminate malaria. In Africa, the leaders of the Southern Africa Development Community have set a target of eliminating malaria from four countries – Botswana, Namibia, South Africa, and Swaziland – by 2015. If these countries achieve this goal, they will free more than 14 million people and 1.5 million square kilometers of territory from the threat of malaria, saving thousands of lives and invigorating the local economy. Importantly, their success will also drive the border of the malaria zone further north, enabling other countries to begin their own efforts to eliminate the disease in the near future.

Meeting this ambitious target presents many challenges and requires careful planning, innovation, and years of dedication. Recognizing this reality, CHAI, in partnership with the Global Health Group of the University of California, San Francisco, is providing management support to these countries to rapidly and effectively plan, resource, and execute elimination programs. In order to ensure that malaria does not return once it has been eliminated, CHAI is also helping countries plan and launch cross-border collaborations to dramatically reduce the disease in neighboring high-burden countries. Based on this experience, CHAI is developing a set of guidelines and tools to assist other countries around the world that are exploring or targeting malaria elimination.



Targeted Impact of Southern Africa Malaria Elimination Initiative