



Obuasi malaria control programme: a model for Africa

The integrated malaria control programme developed by AngloGold Ashanti, and implemented at Obuasi mine in Ghana, and its associated community in 2006, is proving successful in the fight against malaria, the most significant public health threat to AngloGold's operations in West Africa. (See case study, *Campaign at Obuasi halves malaria incidence* – www.aga-reports.com/06/malaria-Obuasi.htm). The model is now being rolled out to AngloGold Ashanti's other operations in West and East Africa.

The programme's initial stated objective was to achieve a 50% reduction in the incidence of malaria in two years. As at September 2007, reported malaria cases had declined by 73% since January 2005, with an average reduction of 4,550 cases per month. Project costs were \$ 1.7 million for the first year, with an annual budget of \$1.3m thereafter.

Malaria: number of reported cases and incidence rate per 1,000* employees 2005-2007

	2005	2006	2007
Case of malaria reported at the Edwin Cade Hospital	79,237	53,070	20,976
Malaria incidence rate	238	164	69

“An important factor in the success of the project was the care we took to ensure it was based on sound scientific principles, and following World Health Organization (WHO) guidelines,” says Steve Knowles, AngloGold Ashanti’s Manager: Malaria Control. Recognised authorities in the field (Prof Maureen Coetzee of the South African National Institute for Communicable Diseases and Prof Richard Hunt, a specialist entomologist) were retained to consult on the development of the project and to conduct the initial baseline research. Previous studies and surveys conducted by the Ghanaian Health Services and the University of Ghana Malaria Unit were also used. Prior to the implementation of the programme, a baseline Community Parasite Prevalence study was conducted by the University of Ghana Noguchi Institute.

“Ongoing surveillance, monitoring and research remain key,” says Knowles. “Another critical success factor is that the programme should be approached as a partnership with the relevant authorities in the country of operation and with local communities.” The local community in Obuasi has been involved in the project from the outset. “This is in any event desirable in principle,” says Knowles “but was particularly relevant at Obuasi: the mine’s various shafts are over a mile apart, with the town interspersed between them, making the mine and community an integrated entity.”

The project intervention area, which covers the complete Obuasi Municipal Assembly area, comprises some 35,000 dwellings. This is particularly relevant to the Indoor Residual Spraying (IRS) programme, an essential component of any malaria control programme (see box), and the one intervention which has been shown to have the greatest effect on malaria vector populations and malaria incidence reduction.

“IRS had been in use for some years when we developed the project, but its effectiveness had declined over the years for a number of reasons, including the inappropriate use of insecticide, a lack of infrastructure and a shortage of trained personnel,” says Knowles.

Obuasi malaria control programme: a model for Africa continued

An insecticide resistance survey was conducted, as a result of which the use of organophosphate for two rounds, followed by a pyrethroid-based insecticide, was recommended. The smell associated with the organophosphate was a perceived negative factor in the community, and the supplying company was requested to attenuate this without reducing the product's effectiveness.

"The information, education and information programme specifically focused on this factor," says Knowles. "Trust was established, and the communities were forewarned of the smell: in the event, acceptance was excellent. This is attributable to the good relationship we had established, the perceived positive results of the first round of spraying, and the additional bonus that other household pests (such as ants and cockroaches) were also eliminated." As at the end of 2007, 98% of the targeted area of intervention had been sprayed. Larviciding of water bodies to reduce mosquito breeding is also ongoing.

Job creation is another benefit of the programme. Knowles explains: "We calculated that 116 spray operators would be needed to cover the intervention site in five months, the residual efficacy time of the insecticide. This labour was recruited through the Ghana labour offices, with all recruits being required to undergo an appropriate fitness test given the physical requirements of the spraying job. Those who passed this went through a further process of interviews and tests for literacy and numeracy. The final recruit was thus fit, healthy, articulate and able to complete the required paperwork." The other requirements of the spraying programme included: 18,560kg of insecticide per spray round, 60 pumps, eight vehicles and nine trailers with associated equipment.

On a wider front, community interaction continues through regular committee meetings, social gatherings, media articles, a weekly slot on the local radio programme and one-on-one interaction with community leaders to obtain feedback. The Obuasi Community Volunteer Advocate corps, formed during 2007, provides a vital community link. Volunteers receive regular training in the causes and prevention of malaria, as well as updates on new developments, from the AngloGold Ashanti Malaria Control Programme staff, and are paid a quarterly allowance.

The success of the model has ensured its footprint extends beyond Ghana's borders.

The Obuasi Malaria Control Centre (dedicated at its opening in April 2006 to 'Ghana and West Africa') serves primarily as the headquarters for the Obuasi programme, but also functions as a training centre for malaria control interventions at other AngloGold Ashanti operations, as well as a satellite research centre for use by academic and government agencies.

A programme based on the Obuasi model has been developed at Geita Mine in Tanzania, with the spraying programme scheduled to begin in March 2008. Roll-out to Siguiri Mine in Guinea is also planned for 2008. Spray personnel have been trained at the Control Centre on behalf of Newmont and plans for the coming year include a malaria control joint venture with the Ghana Chamber of Mines, with participation from AngloGold Ashanti (Iduapriem), Gold Fields, Gold Star and Ghana Manganese, using the Tarkwa area as a pilot site.

The Obuasi model was used as the basis of the Ghana Government's proposal to the Global Fund for funding (\$75 million over five years) to implement an IRS-based malaria control programme in 50 districts throughout Ghana, although this was unfortunately unsuccessful. The programme has received international recognition, including a commendation from the Global Business Coalition on HIV/AIDS, Tuberculosis and Malaria as an example of global excellence, and in conjunction with AngloGold Ashanti's work on HIV/AIDS and Tuberculosis won three awards at the ABSA Healthcare Initiative Awards in association with the Pan African Healthcare Congress.

Elements of an integrated malaria control programme

- Surveillance, monitoring and research
- Community interaction: information, education, communication
- Prevention:
 - Kill adult mosquitoes (indoor residual spraying)
 - Prevent mosquitoes from breeding (nets, screening, repellants)
 - Control mosquito breeding (larvicide, environmental management)
- Treatment (early, effective diagnosis and treatment; anti-malarial drugs)