

African Programme for Onchocerciasis Control 1995—2015: Model-estimated health impact and cost

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A relatively inexpensive program set up to combat river blindness, an infectious disease, has resulted in major health improvements in Africa, shows a study conducted by Erasmus University Medical Center researchers. The study, due to be published January 31 in *PLoS Neglected Tropical Diseases*, shows that US\$250 million helped cure or prevent blindness, skin disease, severe itching, and other symptoms in millions of people. In collaboration with the Management of the African Programme for Onchocerciasis Control (APOC), the researchers calculated the health impact of APOC.

Onchocerciasis, also known as river blindness, is an infectious [parasitic disease](#) transmitted by flies that live near fast-[flowing rivers](#). The worm that causes the disease lives in subcutaneous nodules. The bite of the fly passes the worm's larvae from human to human. During their lifetime, people in endemic regions often contract several infections, which accumulate and can lead to blindness. Infected people may suffer from severe itching, leading to insomnia and inability to concentrate. This makes working or going to school difficult. 'This means people are less able to provide for themselves, especially in developing countries,' says Erasmus MC researcher Luc Coffeng. 'It is for a reason that in images of river blindness you often see a [blind person](#) moving around holding the end of a stick accompanied by a child holding the other end.'

In 1995, the WHO launched the African Programme for Onchocerciasis Control (APOC) to combat river blindness. APOC has geographically mapped the disease, and has started annual mass treatment with the drug ivermectin in sixteen African countries. Ivermectin kills the larvae in the human and thus prevents transmission of the infection and development of irreversible

symptoms, such as blindness. Manufacturer Merck helps by providing [ivermectin](#) for as long as needed, free of charge. APOC distributes the drug in an efficient and inexpensive manner through a community-directed approach. Specially trained volunteers operate at the local level; they find out which people are eligible for treatment, and ensure that these people get the drug. This saves time for health professionals, and makes it easier to continue mass treatment in situations of political instability.

In fifteen years' time, APOC has had a major [health impact](#) at relatively low cost, according to the researchers. The percentage of people infected with the parasite decreased from 45 to 31 percent among a population of 104 million people. 'Blindness and visual impairment now occur much less frequently in the APOC countries. And the percentage of people suffering from severe itching decreased from 14 to 6 percent,' said Coffeng. The researchers express the impact of the programme in terms of years of healthy life gained: 'This metric expresses our preference for people to live their life in good health rather than in disease. For instance, for every year lived in blindness, we consider 0.6 years of healthy life lost.' The program has already saved a total of eight million healthy years of life, at a cost of about US\$250 million. 'Peanuts compared to what we in the Western world are spending on healthcare,' commented Coffeng. 'APOC costs 30 dollars for every year of healthy life gained, while in the Western world we are willing to spend tens of thousands of dollars to achieve this.'

The fight against river blindness is not yet over. The percentage of people carrying infection is expected to decline further, to about 18% in 2015. 'APOC has made tremendous efforts to implement mass treatment in all countries in need. The last countries joined the program only in 2010. Treatment must

continue for many years, because the drugs only kill the [larvae](#) and not the adult worms, which can live inside humans for over 10 years,' observes Coffeng. In other words: it is very important that APOC continues its activities, which requires continued support from drug-donating pharmaceutical companies and donor countries, and continued commitment from national governments of the African countries in question and local volunteers. 'The eventual goal of APOC is to completely eradicate [river blindness](#), and this seems to be possible if all stakeholders commit to that goal.'

More information: Coffeng LE, Stolk WA, Zoure´ HGM, Veerman JL, Agblewonus KB, et al. (2013) African Programme for Onchocerciasis Control 1995: Model-Estimated Health Impact and Cost. PLoS Negl Trop Dis 7(1): e2032.
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