Eradicating yaws in Africa: challenges and progress

Yaws, a neglected tropical disease (NTD) of the skin caused by the bacterium *Treponema pallidum* subspecies *pertenue*, is targeted in the latest WHO NTD Roadmap for eradication by 2030. In January, 2022, WHO published a manual that outlines the key activities that Ministries of Health in endemic countries should undertake to achieve this goal. The aim of the manual is to provide guidance on surveillance and evaluation of yaws as programmes progress towards eradication. However, yaws eradication in Africa faces several challenges.

First, national programme reporting of yaws from endemic countries to WHO is usually solely based on clinical diagnosis. In west African countries, such as Ghana, the prevalence of yaws based on clinical diagnosis is between 3% and 10%, but this method of diagnosis is often unreliable and not uniformly reported. The lack of active surveillance probably contributed to programmes missing the ambitious 2020 target of eradication that was proposed by the WHO in 2012. The latest WHO manual highlights diagnostics as key for monitoring yaws prevalence and recommends programme managers use treponemal rapid diagnostic tests (RDTs); however, these RDTs do not distinguish between past and present infections. New diagnostic tools are necessary to improve the reliability of national data and guide treatment programmes, an example of progress in this area is the LAMP4Yaws project. Introduced in 2020, the project aims to support reference laboratories in Africa and provide a platform for the evaluation of new molecular tests such as loop-mediated isothermal amplification in Cameroon, Côte d'Ivoire, and Ghana.

A second challenge to yaws eradication is that cases are particularly prevalent in some nomadic populations—eg, Pygmy people in the Central African Republic, Cameroon, Republic of the Congo, and the Democratic Republic of the Congo—making case finding, diagnosis, and treatment difficult. Third, the mobility of these populations combined with inter-community migration in central Africa limits the coverage and effectiveness of mass drug administration (MDA), which can result in the emergence of new cases. Finally, follow-up after MDA, which is vital for detection of antimicrobial resistance, is also difficult. "Resistance has so far only been described in Papua New Guinea, but it is highly likely that it will also emerge in Africa as yaws programmes scale up and use of azithromycin is expanded", Michael Marks (London School of Hygiene & Tropical Medicine, London, UK) told *The Lancet Microbe*.

Despite these challenges, progress is being made in sub-Saharan African countries. The health districts of Bankim and Lomié in Cameroon where only one case of yaws was reported in 2021 through the LAMP4YAWS project, compared with 12 cases in 2017. Funding by the Organization for the Coordination of the Fight Against Endemic Diseases in Central Africa (OCEAC) has also allowed FAIRMED (a non-governmental organisation supporting NTD projects) to implement a large-scale yaws eradication effort in Cameroon, Republic of the Congo, and Central African Republic. Alongside the support from OCEAC, these activities are supported by a donation of azithromycin from the pharmaceutical company EMS. Both the OCEAC and LAMP4Yaws projects have provided key training for programmes in the use of point-of-care and molecular tests to strengthen surveillance data across yaws-endemic countries, and the WHO manual for monitoring and evaluation provides further guidance on how to effectively record and report these data.

A key component of the WHO strategy to eradicate yaws is promoting an integrated approach for the surveillance of yaws and the other NTDs of the skin including Buruli ulcer, cutaneous leishmaniasis, post-kala-azar dermal leishmaniasis, Hansen's disease, mycetoma, and scabies. Many health districts within Africa have created communities-of-practice—ie, a group of clinical health workers, community health workers, traditional healers, and local people—using mobile applications that allow for rapid review of suspected cases of yaws and other skin NTDs in remote areas to reduce delays in treatment for difficult-to-reach populations. In Cameroon, this approach led to 98 suspected cases of Buruli ulcer being detected by health-care workers (no suspected cases were reported in 2009–10). In Côte d'Ivoire, Ghana, Togo and Benin, integrated programmes on controlling Buruli ulcer, yaws, lymphatic filariasis, and Hansen's disease are being supported by Anesvad. This integrated and culturally aware approach makes it possible to optimise public health activities and overcome the limited resources available for yaws control.

There have been important advances in building capacity in integrated surveillance, clinical and laboratory diagnosis, availability of drugs, and scale-up of MDA campaigns in sub-Saharan Africa. However, eradicating any disease is a major challenge. Previous interventions conducted worldwide in the 1950s reduced the prevalence of yaws by as much as 95%, but poor post-intervention monitoring resulted in the re-emergence of yaws in the 1970s and 1980s. The latest WHO manual on yaws surveillance will provide programme managers and Ministries of Health with much needed guidance on how they can plan for and monitor eradication as countries reduce cases and prevent re-emergence of yaws.

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For the **WHO manual for yaws eradication** see https://www.who.int/publications/i/item/9789240026506

For **yaws epidemiology** see **Articles** *Lancet Global Health* 2015; **3:** e324–31

For the **WHO 2030 roadmap for neglected tropical diseases** see https://www.who.int/publications/i/item/9789240010352

For **LAMP4Yaws** see https://www.lshtm.ac.uk/research/centres-projects-groups/lamp4yaws