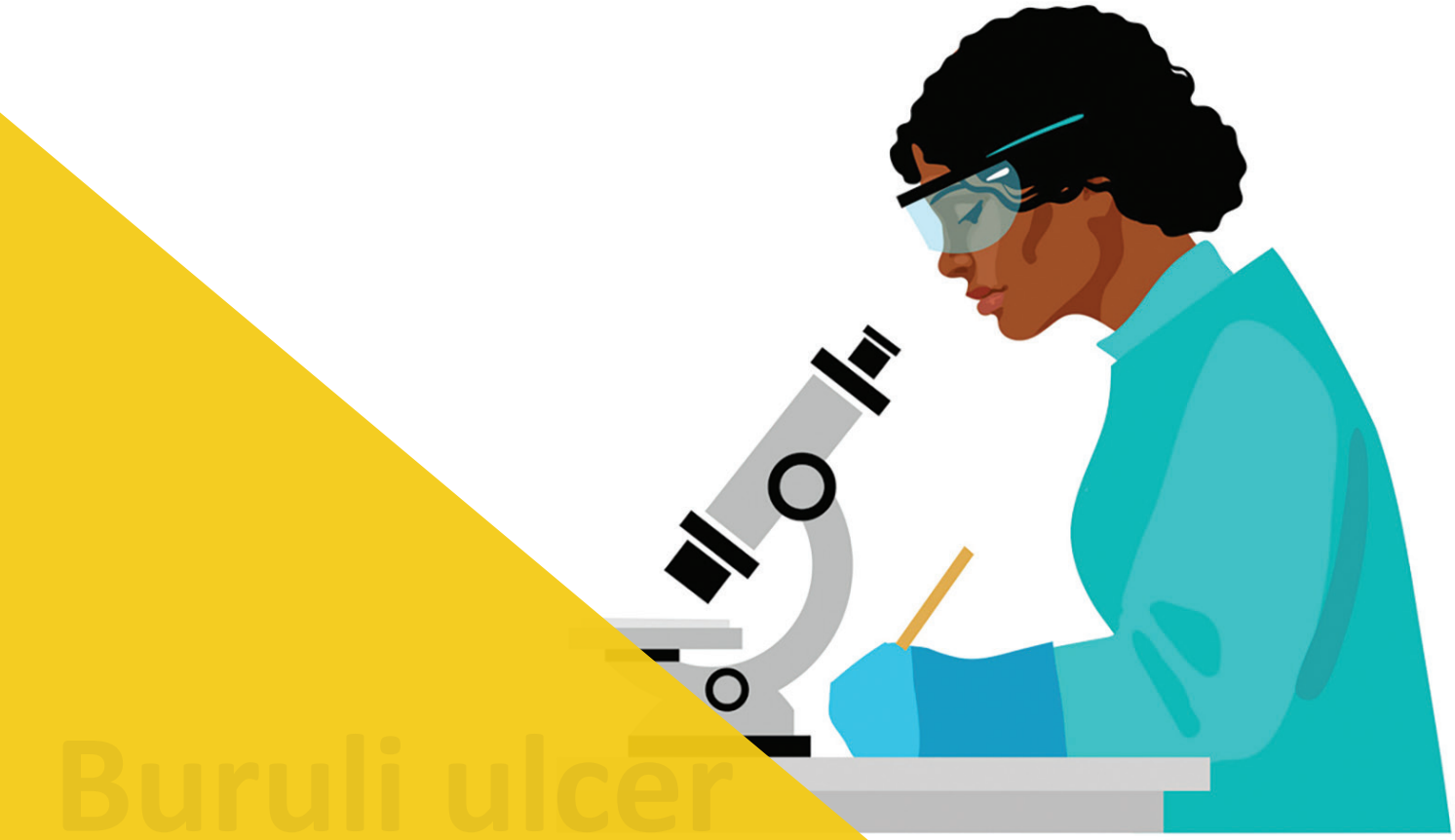
First meeting of the network on Buruli ulcer PCR laboratories in the WHO African Region



Centre Pasteur du Cameroon,
Yaoundé, 21–24 October 2019

World Health Organization

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Contents

Abbreviations and acronyms

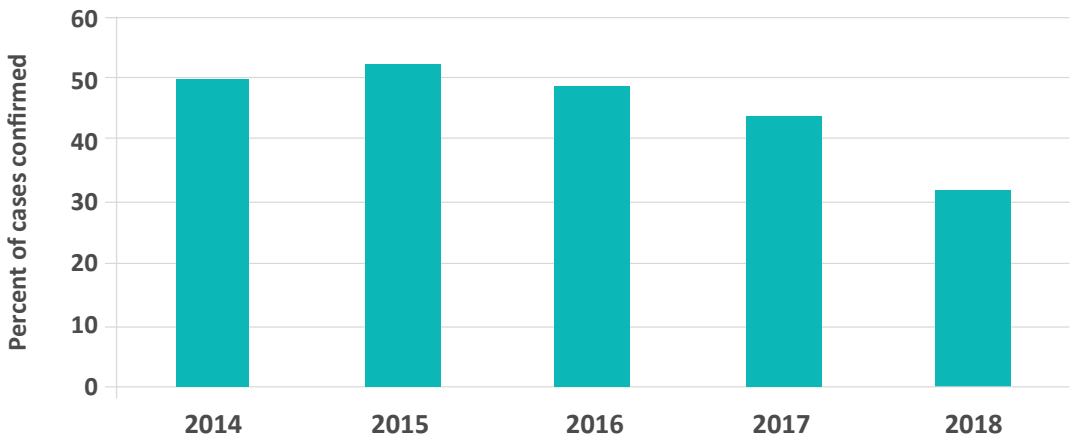
CPC	Pasteur Center of Cameroon
EQA	external quality assessment
ITM	Institute of Tropical Medicine
NTD	neglected tropical disease
PCR	polymerase chain reaction
SOP	standard operating procedure
WHO	World Health Organization

1. Background

Buruli ulcer is caused by infection with *Mycobacterium ulcerans*. The disease is reported in more than 33 countries worldwide, but only about half of these countries regularly report data to WHO; most cases are reported from subregions of West and Central Africa. The mode of transmission is not known. About half of those affected are children aged under 15 years; there is no gender difference. Diagnosis is based mainly on clinical and epidemiological characteristics. Of the four methods used for laboratory confirmation (microscopy, polymerase chain reaction (PCR), histopathology and culture), PCR is the most rapid and widely used. Other rapid methods for detection of mycolactone in lesions from suspected cases, such as fluorescent thin-layer chromatography, are under evaluation in four countries in Africa. Research to develop point-of-care tests is in progress. Treatment of Buruli ulcer comprises 8 weeks of combined antibiotics (rifampicin and clarithromycin). Complementary therapies such as wound care, skin graft and prevention of disability are needed in some cases to ensure full recovery.

The target set by the World Health Organization (WHO) for control of Buruli ulcer is for countries to achieve a rate of case confirmation by PCR of at least 70%. All endemic countries have at least one PCR facility to support confirmation of cases. However, most countries in the WHO African Region have not been able to reach the target, and the rate of case confirmation has been declining (see Fig. 1).

Fig. 1 Average percentage of suspected Buruli ulcer cases confirmed in the WHO African Region, 2014–2018



During the 12th meeting of the WHO Technical Advisory Group on Buruli ulcer (Geneva, 27 March 2019), the Institute of Tropical Medicine (ITM) announced that it was discontinuing the external quality assurance (EQA) programme. In response, the Group recommended that EQA be assumed by an African country in which Buruli ulcer is endemic, for sustainability purposes.

At its previous meeting (Geneva, 21 March 2017), the Group identified a number of problems with laboratory confirmation of cases, namely: (i) the low rate of PCR confirmation in a number of endemic countries; (ii) the long delays in receiving results from the laboratories; (iii) the low rate of participation in the EQA programme by national reference laboratories; and (iv) the lack of funding to sustain the EQA programme.

As ITM has discontinued the external evaluation process, it is imperative that a new model of EQA is rapidly proposed that will improve the performance of laboratories involved in the molecular diagnosis of Buruli ulcer in endemic countries in Africa to ensure that patients receive correct diagnostic results and that the data recorded by WHO are accurate, reliable and comparable with those of other continents such as Australia.

Based on the Group's recommendation, WHO intends to transfer the programme to a volunteer laboratory in an endemic country in Africa that demonstrated good performance during the previous rounds of EQA. The Mycobacteriology service of the Centre Pasteur du Cameroun (CPC) was judged to be one of the best performing laboratories and was asked to propose a new model to improve the performance of laboratories involved in the molecular diagnosis of Buruli ulcer in the endemic countries in Africa.

In response, WHO sent two consultants to visit CPC on 23–25 April 2019 in order to:

- assess the capacity and needs of CPC for potential designation as the reference laboratory for Buruli ulcer in Africa and to conduct the EQA programme; and
- plan a meeting of all the laboratories involved in confirmation of cases of Buruli ulcer during the second half of 2019.

From the laboratory visit and the discussions about the laboratory network, the consultants recommended that, given the experience and technical expertise of the Mycobacteriology unit of CPC, the CPC should be designated as the Coordinating Centre for the new EQA programme.

The first meeting of the Buruli ulcer laboratory network (BU-LABNET) ulcer was held at CPC in Yaoundé, Cameroon, on 21–24 October 2019. The agenda is given in Annex 1. The meeting was attended by representatives from 11 laboratories from nine endemic countries and external experts (see Annex 2 for the list of participants), with simultaneous interpretation in English and French.