

Certification of elimination of human onchocerciasis

criteria and procedures

Following a WHO meeting on
"Criteria for certification of interruption of transmission / elimination
of human onchocerciasis"
Geneva, 28-29 September 2000
(document WHO/CDS/CPE/CEE/2001.18a)

GUIDELINES

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EXECUTIVE SUMMARY

Onchocerciasis is still endemic in 34 countries, 26 in WHO's African Region, six in the Region of the Americas, and two in the Eastern Mediterranean Region. The epidemiology of onchocerciasis is that of a vector-borne disease, of which human beings are the only vertebrate host, showing coincidence between the degree of human infection and the intensity of exposure to infected vectors. However, the epidemiology of onchocerciasis is not uniform throughout its distribution because different disease patterns are associated with different variants or strains of the parasite, with differences in the vector competence and feeding characteristics of local blackfly populations, with the abundance of the vector, and with differences in the human host responses to the parasite. These factors, together with those related to environment, population, and control measures, determine the distribution and intensity of the disease.

INTRODUCTION

Onchocerciasis has long been recognized as disease of public health importance. In 1974, the first regional onchocerciasis control programme (OCP) was launched in west Africa, based on a vector control strategy and sponsored by the FAO, UNDP, World Bank and WHO as the executing agency. With the development of a safe drug for use in public health programmes, two other large programmes were launched subsequently in the Americas

After more than 25 years of onchocerciasis control in West Africa, WHO

Year	Revenue	Expenses	Profit
2000	100	80	20
2001	120	90	30
2002	150	100	50
2003	180	110	70
2004	200	120	80
2005	220	130	90
2006	250	140	110
2007	280	150	130
2008	300	160	140
2009	320	170	150
2010	350	180	170
2011	380	190	190
2012	400	200	200
2013	420	210	210
2014	450	220	230
2015	480	230	250
2016	500	240	260
2017	520	250	270
2018	550	260	290
2019	580	270	310
2020	600	280	320

from other endemic foci. It was agreed that efforts towards elimination of the disease should be directed towards the control of the disease in the endemic foci.

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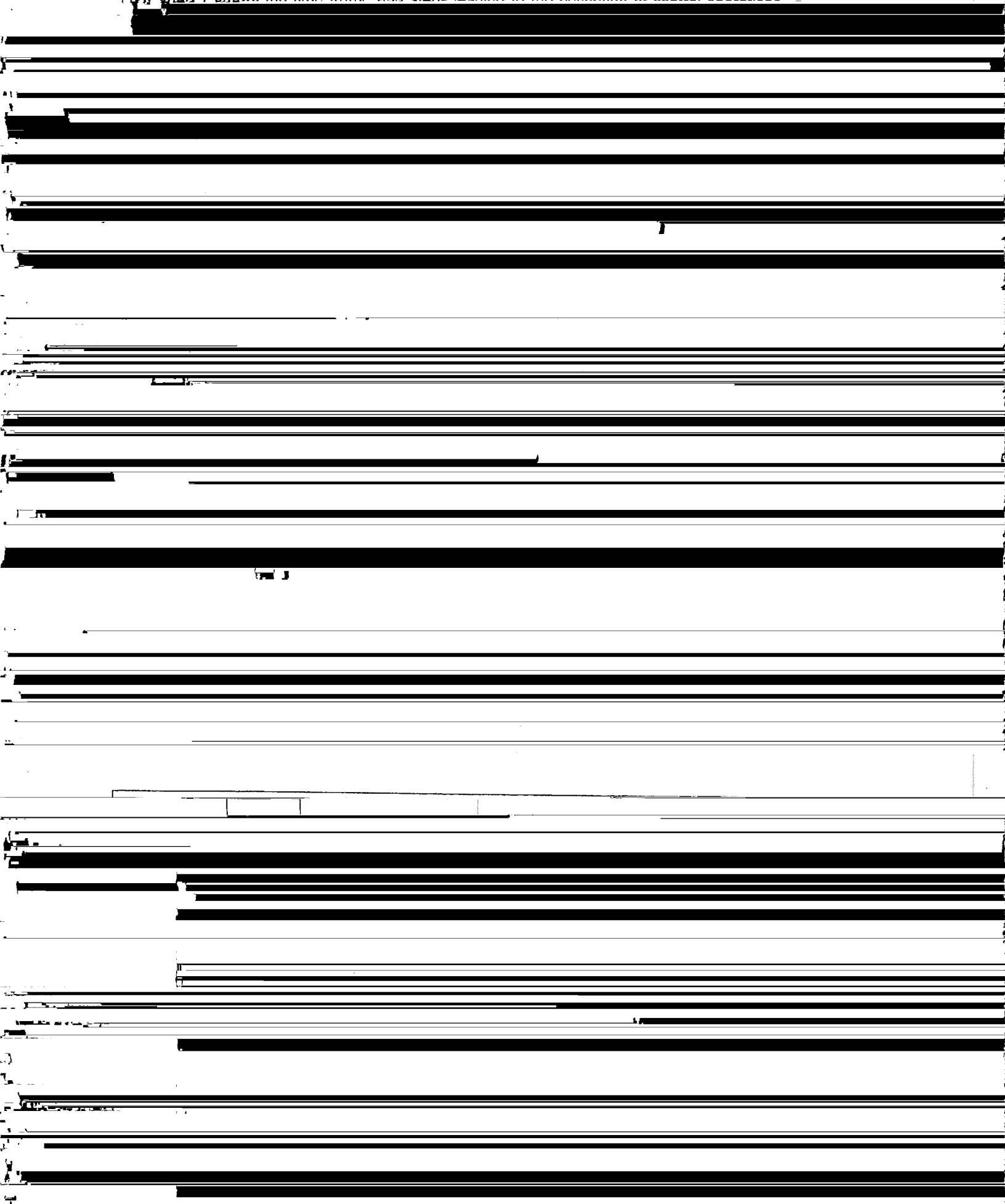
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established, and morbidity will again develop in the human population. Thus, the minimum time required to terminate new morbidity, infection and parasite transmission is 14-18 years, based on the observed longevity of adult worms in other control programmes (Duke, 1988).

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Flow chart 1 shows the time frame and steps leading to the cessation of central operations



6.1.4. Conclusions of the ICT

At the end of the verification surveys, the ICT will be asked to reach one of two possible conclusions: either (1) they are satisfied that elimination has been achieved and recommend

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33. WHO. 1999a. Annual onchocerciasis report from the 1997 Interamerican conference on onchocerciasis in Cali, Colombia. *Weekly Epi Record* **74**:12-15.

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DEFINITIONS RELEVANT TO ONCHOCERCIASIS ELIMINATION

Incidence is the rate at which new cases arise in a population within a defined interval of time.

Prevalence is the proportion of the host population infected at a particular point in time.

Morbidity is defined as the presence of disease manifestations caused by onchocerciasis

Basic reproductive ratio (Ro) is a measure of the reproductive success of the parasite population. It encapsulates all the process rates that determine the flow of the parasite through its life cycle, and defines a theoretical threshold between extinction (R_0 continuously less than 1) and persistence of infection (R_0 continuously equal to or greater than 1)

40-50% are included, then the two groups will account for nearly all the blindness due to onchocerciasis. Therefore the treatment strategy is as follows: large-scale treatment

GUIDELINES FOR THE PREPARATION OF A COUNTRY REPORT

To initiate the certification process, each country will submit a comprehensive written report to WHO. The length and detail of this report will vary widely from a brief document for those countries that have few foci, to highly detailed documents with supporting data needed from those countries applying with many foci and a large population at risk. The report will be examined by the ICT for records to substantiate the extent and depth of coverage obtained over the life of the elimination programme. Extent of coverage means that all endemic communities have been discovered and treated; depth of coverage means that at least 85% of the population eligible to take ivermectin and living in these communities were treated at each round of treatment. In addition, methods and results of in-depth epidemiological and entomological surveys should be given. Countries are encouraged to set up a National

**SUMMARY OF GUIDELINES FOR IN-DEPTH EPIDEMIOLOGICAL
EVALUATIONS**

1. Inventory of communities

- A. Identification of all permanent communities located within or in close proximity to the known endemic foci.
- B. This identification and an inventory of communities is entered in a database using geographic information system (GIS) technology to map communities.

C. Basic epidemiological information on each community is entered in a database.

**IMPACT OF COMMUNITY-WIDE IVERMECTIN DISTRIBUTION ON
ONCHOCERCIASIS TRANSMISSION**

1. General remarks

2.7. Hourly collection schedule. Each hour of collection for each team is divided into 50 minutes of collecting followed by 10 minutes of rest, during which time the collection can be labelled and stored. Each 50-minute collection unit must be maintained separately and labelled with the date, community, collection site, time of collection (e.g. 08:00-08:50, etc.), and collector team. Each 50-minute collection must be preserved in 100% isopropanol for PCR testing. This is most conveniently done in the evening after the daily catch is made.

2.8. Determination of the Biting Rate. Data analysis requires a biting rate as well as an infection rate. The biting rate is calculated as the geometric mean number of flies per 50-minute collection period, with 95% confidence intervals. These data can be used to estimate the biting rate per hour, per day, or per transmission season. The infection rate when applied to the biting rate yields the number of infective stage larvae potentially transmitted per unit