

*executive committee of  
the directing council*



# PAN AMERICAN HEALTH ORGANIZATION

*working party of  
the regional committee*

# WORLD HEALTH ORGANIZATION



43rd Meeting  
Washington, D. C.  
May 1961

CE43/14 (Eng.)  
18 April 1961  
ORIGINAL: ENGLISH

## Topic 11: REGISTER OF AREAS WHERE MALARIA IS ERADICATED

At the 40th Meeting of the Executive Committee held in Washington in April 1960, the Director had the honor to submit, in compliance with Resolution XXXII of the XI Meeting of the Directing Council, his first report on the possibility of establishing a "Register of Areas Where Malaria is Eradicated," "as well as on the conditions that Member Governments should fulfill in order to request that a given area be included."

The report presented a detailed analysis of the problem and the Director concluded that before it was possible to establish a "Register of Areas where Malaria is Eradicated" some important points required clarification.

In the light of the available information the Executive Committee at its 40th meeting decided in Resolution VII to take note of the report and to request the Director to provide information on the progress of the study and to present concrete recommendations for consideration at its next meeting.

In continuing the above-mentioned study, the Director sent the recommendations of the III Meeting of the Bureau's Advisory Committee on Malaria Eradication<sup>1/</sup> to the Director General of WHO, with the request that the problem be submitted to the consideration of the Expert Committee on Malaria at its Eighth Session.

It is with pleasure that the Director reports:

1. The WHO Expert Committee agreed to consider the question and in fact revised the criteria for malaria eradication and established new criteria which appear in the Chapter 4 of the Eighth Report;<sup>2/</sup> and

<sup>1/</sup>Report of the III Meeting of the Advisory Committee on Malaria Eradication, held in March 14-16, 1960. Washington, D. C.

<sup>2/</sup>World Health Organization Technical Report Series, 1960, 205, 32.

2. The report of registration of an "area in Venezuela where Malaria is eradicated" is in its final stage of preparation.

The Expert Committee on Malaria of the WHO at its 8th session<sup>1/</sup> recommended that any claim of malaria eradication be based in the following evidence:

- 1) Proof of the adequacy of the surveillance mechanism.
- 2) Evidence that in a period of three years no indigenous cases originating within that time have been discovered, and
- 3) The evidence of a register of all malaria infections discovered during that time, it being established beyond reasonable doubt that each case was either: imported; a relapse of pre-existing infection; induced; or directly secondary to a known imported case (introduced).

The Committee also established the methodology for the confirmation of malaria eradication, which, in broad lines, is as follows:<sup>2/</sup>

1. The minimum size of an area for which registration of achieved eradication can be granted is 50,000 Km<sup>2</sup>, with the following exceptions and qualifications:
  - a) When the 50,000 Km<sup>2</sup> exceed the total area of the country or island;
  - b) The area, being of the size described above, should be continuous, and should not contain or surround any area of continued endemicity of malaria;
  - c) The boundaries of the area should correspond with those of recognized administrative divisions, such as states, provinces or counties.
2. The registration can be made only after inspection and certification by a WHO Evaluation team.

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<sup>1/</sup>World Health Organization Technical Report Series, 1960, 205, 32.

<sup>2/</sup>Ibid, page 34.

3. The criteria for achievement of malaria eradication presuppose efficient surveillance operations for the last three years or other equivalent processes which would have detected any malaria cases over such a period. Such surveillance operations or other processes should already have furnished the national authorities with the cumulative data necessary to judge the status of eradication; therefore, the work of an evaluation team will have to consist largely in the analysis of such data which will have to be closely scrutinized to determine their adequacy. During its visit, the team should not confine its activities to the examination of data in the central office, but should also inspect and check the quality of the evaluation and surveillance operations at zone or sector levels in a sample of such peripheral units.

These were the criteria followed by the evaluation team which visited Venezuela during the last four months of 1959 with a view to certifying the achievement of malaria eradication in a very large area of the country. The preliminary report has been completed and is now being analyzed by our consultants and the Government authorities to scrutinize every aspect of the work so ably performed by Venezuela's experts.

Finally the Committee considered the problem of the reappearance of "small foci" of malaria transmission after registration of an area in the eradication register, stating that:

- a) Once the criteria have been met no area should be classified as malarious unless an endemic state is established or appears likely to be established, and
- b) malaria eradication may be related to smaller areas than the whole country.

Through the report of the Committee all Member Governments have been informed about these new criteria and the consultants of the Organization have been instructed with respect to proper interpretation of the recommendations and the proper preparation for the consolidation phase, prior to the submittal of a request for registration.

One of the most important recommendations of the Committee is related to the maintenance phase.

As is well known, a malaria eradication program is divided into three main phases: attack, consolidation, and maintenance.

The attack and consolidation phases are considered to be the direct responsibility of the malaria eradication organization; the maintenance phase, which is of permanent character, is a primary responsibility of the regular health services. Once the malaria specialists have achieved their mission and have freed an area or country from malaria, it will be the responsibility of the Health Department to maintain adequate surveillance to discover any introduction of cases until malaria has been erased from the world.

As malaria is primarily a rural disease, it will be important to develop rural health services that are capable of maintaining the surveillance machinery built up by the Malaria Program

It is believed that this problem should be met by the Health Authorities at the latest by the time an area enters the consolidation phase.

During the attack and consolidation phases the Malaria Eradication Organizations will have built up a very significant system of case-finding, in which the medical, para-medical, and a large number of lay people will have been stimulated towards working for "better health of the people." Some kind of procedures need to be developed to channel these people into other health activities.

In the light of the above information the Director believes that the Organization is in a position to assume the responsibility assigned by Resolution XXXII of the XI Meeting of the Directing Council, for the establishment in the Pan American Sanitary Bureau of a Register of Areas where Malaria is Eradicated following the general guidelines of the 8th Report of the World Health Organization, with such specific implementation as the experience of the Malaria Eradication Program of the Americas will indicate.

In view of the foregoing the Executive Committee may wish to approve a resolution along the following lines:

#### Proposed Resolution

The Executive Committee,

Having examined in detail the document presented by the Director on the Register of Areas Where Malaria is Eradicated (Document CE43/14), in which the conclusion was reached that the Pan American Sanitary Bureau is in the position to assume the responsibility assigned by Resolution XXXII of the XI Meeting of the Directing Council,

#### RESOLVES:

1. To approve the report presented by the Director
2. To request the Director to transmit this report to the Directing Council at its XIII Meeting.

Annexes: I  
II

Document CE40/8: REGISTER OF AREAS WHERE MALARIA IS ERADICATED

(Presented to the 40th Meeting of the Executive  
Committee, Washington, D.C., April 1960)

*executive committee of  
the directing council*



# PAN AMERICAN HEALTH ORGANIZATION

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# WORLD HEALTH ORGANIZATION



40th Meeting  
Washington, D. C.  
April 1960

CEHJ/8 (Eng.)  
25 March 1960  
ORIGINAL: SPANISH

## Topic 10: REGISTER OF AREAS WHERE MALARIA IS ERADICATED

The XI Meeting of the Directing Council, in Resolution XXXII, requested that the Director "study the possibility of establishing in the Pan American Sanitary Bureau a 'Register of Areas where Malaria is eradicated,' as well as the conditions that Member Governments should fulfill to request that a given area be included in the aforesaid Register, and that he report the results of his study to the 40th Meeting of the Executive Committee." The criteria for determining that malaria has been eradicated, as set forth in the Seventh Report of the WHO Expert Committee on Malaria, appear in Annex I to this document.

The experience acquired by the Bureau justifies the advisability of reviewing those criteria for the purpose of adapting them to the present status of the malaria problem. Since the eradication program is world-wide in scope, it appears necessary to fix standards that are applicable to all countries, taking into account national and regional characteristics. With this in view, and in compliance with the aforesaid resolution, the Director has the honor to present the following report.

The Bureau has had this problem under study for some time. In effect, the proposed program and budget for 1958 (Official Document No. 21), presented to the X Meeting of the Directing Council, included project AMRO-121 "Malaria Eradication Evaluation Team" for the purpose of conducting evaluation surveys to determine the effectiveness and efficiency with which the hemisphere-wide campaign is being carried out, as basis for the certification that an individual national program has been successful in eradicating malaria. The activities were started in March 1958, when a Field Team was organized, composed of a chief epidemiologist, a parasitologist, and a sanitary inspector.

With the objective of establishing work methods applicable to all the countries, it was decided that the Team would visit certain limited areas where it was suspected that malaria transmission was apparently interrupted or was about to be interrupted, with the dual purpose of verifying whether the disease had been eradicated and, if that were the case, evaluating the possibility of discontinuing spraying operations.

After consultation with the competent authorities, the Team began its work on the islands of Grenada, Carriacou, and Dominica; it found that, although the spraying operations were apparently satisfactory, the epidemiological evaluation left much to be desired, since the methods used in the search for malaria cases during the attack phase had not been sufficiently extensive or deep.

Considering that the medical services were covering the population adequately, the health authorities used those services exclusively to detect cases as the patients appeared. Consequently, the search for cases was incomplete, having been made only in that portion of the inhabitants that came to the medical services, where blood specimens were taken from "suspect cases," or those whom the professionals suspected of having malaria. This is another instance in which hospital statistics do not reflect entirely a process that is occurring in the community as a whole.

In view of this situation, and to obtain the best possible information, the Team collected blood specimens from approximately 10 per cent of the total population of each of the islands. This work required considerable time, and an even longer time was required for the examination of the slides, which was done by the Team members themselves, with the valuable collaboration of the central laboratory of the National Malaria Eradication Service of Trinidad.

As a result of that survey, among approximately 6,000 slides taken, three cases were found in Grenada, in individuals with no history of fever, and none were found in Carriacou. In Dominica, the health authorities stated that the last cases reported were among the inhabitants of the Portsmouth parish, where the Team found 18 cases of P. falciparum, almost all in afebrile individuals.

The Team then went to British Honduras, where it confirmed that the search for cases also was not satisfactory. Following the same procedure, the Team took blood specimens in various localities, among them Benque Viejo, which showed no positivity. However, at that same time a nurse in the hospital in that same locality took a slide from an individual with a fever history and the result was positive.

Later, at the request of the Government of Guatemala, the Team surveyed the situation in the Department of Huehuetenango and confirmed the existence of cases, precisely at the same locations where the network of voluntary collaborators -- despite its insufficiency -- had already reported the presence of the disease.

The experience acquired in the work in the afore-mentioned areas led to the conclusion that it was not satisfactory that the Team continue to spend its time taking blood specimens directly, but that it would be more logical for it to study the surveillance system used by the national service, which, in general, is based on the search for cases among individuals with a history "of fever." The epidemiological characteristics of the disease

support this conclusion. In effect, the detection of cases in afebrile individuals is very difficult, since it would imply the taking of blood specimens indiscriminately from the entire population at short intervals, inasmuch as it is not possible to foresee when the parasite will be present in the circulating blood. If an eradication program succeeds in interrupting transmission, the number of non-immune individuals will increase in time, partly because of the loss of immunity acquired from previous infections. This being so, the very discontinuation of the attack measures will make it possible for a good surveillance system to readily detect cases that appear and are present in the "febrile" group.

In any event, the question of malaria positivity in afebrile persons requires even further study. For example, the duration of infectivity of an individual with parasitemia is still not known. These details, however, do not appear to have any great influence in the Americas, if the criterion is adopted of obtaining blood specimens from among individuals with a history of "fever" within the past 30 days, as was recommended at the Seminar on Epidemiological Evaluation (Quintandinha, Rio de Janeiro, Brazil, November-December 1959).

After completion of the above-mentioned work, and with the new evaluation method established for it, the Team went to Venezuela in mid-1959, in response to a request from the health authorities, for the purpose of having the Bureau confirm the eradication of malaria in an extensive area of the country. As of 1 January 1959, that eradication area measured 400,414 Km<sup>2</sup>, with an estimated population of 3,294,142 in 143 municipalities (primary political subdivision equivalent to a county), in which at least during the last three years no indigenous cases of the disease had been identified.

The Team remained in Venezuela for four months; the data collected are being analyzed with a view to presenting the report to the Government. In the course of its work, the Team found certain conditions of importance for establishing criteria for the eradication of malaria, such as the following:

- a) One of the insecticides recommended for malaria eradication was being used by the country on a much more intensive scale to combat another disease transmitted by insects (Chagas' disease), because that disease represents a serious public health problem in the area under reference.
- b) As a preventive measure, the country decided that its spraying service of the attack phase should be maintained, through application of residual insecticides against anophelines in municipalities where malaria had been eradicated but which were likely to have malaria cases coming from neighboring municipalities or countries that continued to be infected.



- c) Migrant workers were entering the country from known malarious areas, in an appreciable number and in a manner which made it impossible to maintain control by the usual measures. The country therefore decided to continue the sprayings in the municipalities in the interior, where such migration was more evident.

These problems had not been analyzed in detail when the WHO Expert Committee on Malaria discussed the criteria for eradication of the disease. The pertinent paragraphs from the Committee's Seventh Report appear as Annex I to this document.

The III Meeting of the Bureau's Advisory Committee on Malaria Eradication was held from 14 to 16 March 1960, as convoked by the Director, to consider a number of matters, among them those relating to Resolution XXXII of the Directing Council. In this connection, the Advisory Committee studied the recommendations of the WHO Expert Committee and suggested that the Bureau make a request to the Director-General of WHO to the effect that the Expert Committee, at its next meeting (July 1960), reconsider its recommendations in the light of the new problems encountered.

The Advisory Committee also recommended that, when the registry of malaria eradication areas is established, the countries transmit periodically to the Pan American Sanitary Bureau information on what is occurring in those areas, particularly with reference to the discovery of cases, their epidemiological investigation, and the measures taken to prevent their spread, as well as the results of those measures.

In some countries the eradication of one anopheline species in certain areas has been announced, but it is not known whether there are others that are capable of maintaining transmission. Nor has this eradication been demonstrated, as was done in Brazil and in Egypt with the A. gambiae, for the available information merely reveals that for a relatively long period of time no adult specimens have been captured. If the eradication of the sole vector in a given area is really demonstrated, it appears logical that it would not be necessary to wait for the number of years recommended by the WHO Expert Committee.

Another problem that should be considered is that of reinfection of an area that previously had been declared one where malaria was eradicated. It is necessary to clarify what types of prerequisites must be complied with and what periods of time are required before such an area can again be considered an area where malaria is eradicated.

The Director has reached the conclusion that it is useful and possible for the Bureau to establish a "Register of Areas Where Malaria is Eradicated", but that it is still necessary to clarify some important points, which it is expected will be done during the next meeting of the WHO Expert Committee.

In presenting this report, the Director suggests that the Bureau continue to study the matter, in the light of the Expert Committee's recommendations and the experience acquired in the future work of the Evaluation Team. It is hoped that the Bureau will be in a position to present concrete recommendations at the meeting of the Executive Committee in the spring of 1961.

Annex I

SEVENTH REPORT OF THE WHO EXPERT COMMITTEE ON MALARIA  
(Technical Report Series No. 162, 1959, p.5)

"2.3 Criteria for determining that malaria has been eradicated

There are three criteria of malaria eradication in a given area:

(a) no evidence of transmission is demonstrable; (b) no evidence of residual endemicity has been found; and (c) adequate surveillance has established these points for a period of three consecutive years, in at least the last two of which no specific general measures of anopheline control and no routine chemotherapeutic cover have been applied. Thus, malaria eradication means not only the ending of malaria transmission, but also the elimination of the reservoir of infection, both results proved by intensive surveillance.<sup>1/</sup>

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<sup>1/</sup>"The Committee thus confirms the criteria of malaria eradication given in the sixth report (Wld. Hlth. Org. Tech. Rep. Ser., 1957, 123, 17), with the exception that it notes that chemotherapeutic cover as well as specific general measures of anopheline control should not be applied during at least the last two years of the surveillance that determines the eradication of malaria. The Committee emphasizes the statement in the sixth report that 'any claim based on a lesser period of post-operational surveillance would need to be supported by proof of a surveillance mechanism above the usual quality.' This would apply especially when continued insecticiding is required for the control of other diseases."

40th Meeting of the Executive Committee  
Washington, D. C.  
April 1960

RESOLUTION VII

REGISTER OF AREAS WHERE MALARIA IS ERADICATED

The Executive Committee,

Having examined in detail the document presented by the Director on the Register of Areas Where Malaria is Eradicated (Document CE40/8), in which the conclusion was reached that it is useful and possible to establish such a register, but that it is still necessary to clarify some important points,

RESOLVES:

1. To take note of the report presented by the Director and to recommend that he continue to study this matter in the light of the recommendations of the WHO Expert Committee and the experience acquired by the malaria services within individual countries and through the work of the Evaluation Team.
2. To request the Director to inform the Executive Committee on the progress of the study and to present concrete recommendations at its meeting in the spring of 1961.