executive committee of the directing council

PAN AMERICAN HEALTH ORGANIZATION

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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^2, with an estimated population of 3,294,142 in 443 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."[1]

1/ "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."