International Work in Endemic Treponematoses and Venereal Infections

1948-1963

WORLD HEALTH ORGANIZATION
GENEVA
1965

The World Health Organization (WHO) is one of the specialized agencies of the United Nations. Through this organization, which came into being in 1948, the public health and medical professions of more than 100 countries exchange their knowledge and experience, and collaborate in an effort to achieve the highest possible level of health throughout the world. WHO is not concerned with problems which individual countries or territories can solve with their own resources. It deals, rather, with problems which can only be satisfactorily solved through the co-operation of all, or certain groups of, countries—the eradication of diseases such as malaria, the control of diseases that affect or are a potential danger to many, for example, most of the infectious and parasitic diseases, some cardiovascular diseases, and cancer. Progress towards better health throughout the world also demands international co-operation in many other activities : for example, setting up standards for biological substances, for insecticides and insecticide spraying equipment ; compiling an international pharmacopoeia ; drawing up and administering international sanitary regulations ; revising the international lists of diseases and causes of death ; assembling and disseminating epidemiological information ; recommending non-proprietary names for drugs ; and promoting the exchange of scientific knowledge. In many parts of the world, there is need for improvement in maternal and child health, nutrition, nursing, mental health, dental health, social and occupational health, environmental health, public health administration, professional education and training, and health education of the public. Thus a large share of the Organization's resources is devoted to giving assistance and advice in these fields and to making available—often through publications—the latest information on these subjects. Since 1958 an extensive international programme of collaborative research and research co-ordination has added substantially to the knowledge in many fields of medicine and public health. This programme is constantly developing and its many facets are reflected in WHO publications.

International Work in Endemic Treponematoses and Venereal Infections

1948-1963

WORLD HEALTH ORGANIZATION
GENEVA
1965

This publication is a reprint from
WHO Chronicle, 1964, **18**, 403-417, 451-462; 1965, **19**, 7-18.

PRINTED IN SWITZERLAND

Introduction

At the thirty-first session of the WHO Executive Board (January 1963), it was suggested that it would be of value if a regular and comprehensive review of one of the Organization's activities were to be undertaken at each future session of the Board. In May 1964, in accordance with this suggestion, the Director-General of WHO submitted the following report on the Organization's programme in endemic treponematoses and venereal infections.

The report was very favourably received by the Board, though concern was expressed about the rising incidence of venereal diseases reported in many parts of the world. The widespread improvement in tropical health as a result of the mass penicillin campaigns undertaken by the Organization in 45 countries, particularly against yaws, was noted, and the need for continued surveillance by strengthened rural health services was emphasized. The necessity for continued and augmented research and further WHO assistance in this respect was stressed by the Board, in view of the very small number of laboratories in the world concerned with these diseases. The Board urged Member States " to exert a determined effort to maintain adequate and effective measures to reduce the incidence of the endemic treponematoses, particularly those of childhood, and the venereal diseases, and, where indicated, to increase their efforts to combat, at the national level, the recrudescence of these infections ".

Endemic treponematoses of childhood*

In the programme against venereal infections proposed by the Interim Commission of WHO and adopted by the first World Health Assembly in 1948, priority was given to the control of early syphilis. This programme was subsequently extended to include the non-venereal endemic treponematoses of childhood (tropical yaws, endemic syphilis, and pinta), in view of their microbiological, immunological, and other relationships, and their uniform response to penicillin. It was decided to give attention to gonococcal infections and "minor" venereal diseases only when special problems arose.

The WHO programme on the endemic treponematoses of childhood and the venereal diseases is guided by the views of the relevant expert committees, sub-committees, and special groups, which make recommendations on technical policies and procedures to the Director-General, the Organization, and health administrations, and by the views of symposia, international or inter-country meetings, etc. convened by WHO to facilitate the coordination and exchange of information and the application of these policies and procedures.

The approximate world distribution of the endemic treponematoses of childhood some 15-20 years ago is shown in Fig. 1. It has been estimated [1] that some 200 million people were then living in rural areas where treponematoses were endemic and that about 50 million actually suffered from these infections.

Yaws was endemic throughout large parts of the tropics and was by far the most important endemic treponematosis; active clinical prevalences ranged from 5.6% (Cameroon) to 30% (Liberia) in Africa, from 2.5% (Brazil) to 50% (Haiti) in the Americas, from 3.1% (Thailand) to 17.2% (Indonesia) in South-East Asia, and from 3.6% (Laos) to 40% (New Hebrides) in the Western Pacific Region. In many areas there were more than three times as many latent cases as active cases, and seroreactivity to lipoidal antigens was encountered in up to 60%-70% of rural populations.

The proliferating, disseminated, relapsing crops of long-lasting, infectious framboesides, the multiple periods of latency, and the plantar, palmar, and bony lesions of yaws cause extensive suffering in children, adolescents, and adults, with permanent, destructive, and disabling sequelae in some 10% of those infected. The economic loss due to this infection is well illustrated by the case of Haiti where, following the mass penicillin campaign, the return to work of previously incapacitated labourers represented an estimated increase of $5 million in annual national productivity.[2]

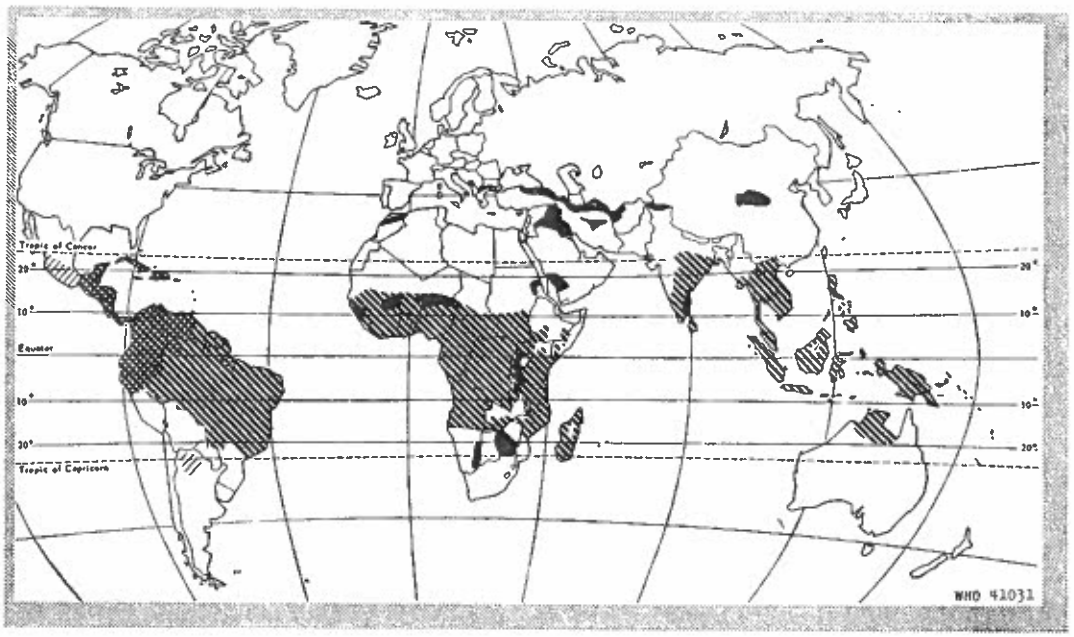
Endemic syphilis occurred not only in the tropics, but in scattered communities outside them, with rates of 3%-5% for early infectious lesions and seroreactivity rates of up to 50%, e.g., in Yugoslavia and Bechuanaland. Oral lesions, secondary syphilides, tertiary and other late incapacitating lesions have serious human, social, and economic consequences, and so do the psoriasiform plaques, secondary multiple pintides, and keratotic lesions of limbs and body provoked by pinta. The last-mentioned treponematosis is confined to parts of tropical America, with prevalence rates of

* A detailed report on international work in the treponematoses from 1948 to 1953, by Dr T. Guthe, Chief, Venereal Disease and Treponematoses Section, WHO, and Dr R. R. Willcox, WHO Treponematoses Consultant, appeared in the February-March 1954 issue of the *Chronicle of the World Health Organization*. This report was reprinted in booklet form under the title *Treponematoses : a world problem*.

[1] *J. trop. Med. Hyg.*, 1957, 60, 27, 62.

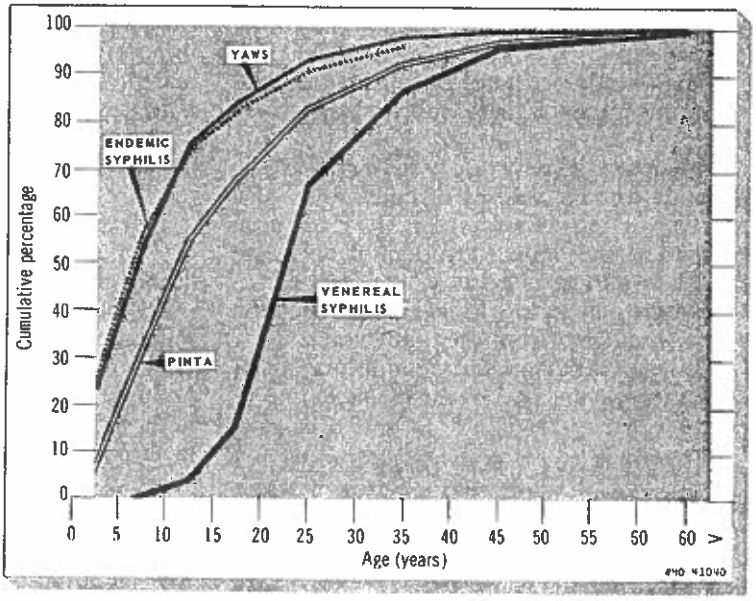
[2] United States Department of State (1950) *Point four: cooperative program for aid in the development of economically underdeveloped areas*, Washington, D.C. (*Economic Cooperation Series*, No. 24).

FIG. 1. GEOGRAPHICAL DISTRIBUTION OF THE NON-VENEREAL TREPONEMATOSES BEFORE WHO-ASSISTED CAMPAIGNS



Yaws Pinta Endemic syphilis and similar conditions

FIG. 2.
ONSET OF EARLIEST CLINICAL MANIFESTATIONS IN TREPONEMATOSES BY AGE *



* Based on 1547 cases of early pinta (Mexico), 1556 cases of early yaws (Haiti, Malaya, Jamaica, Thailand), 1087 cases of early endemic syphilis (Bosnia, Syria, Bechuanaland), 4145 cases of early venereal syphilis (USA).

2%-5% for primary cases and seroreactivity rates of 50%-60% in rural populations, e.g., in Mexico and Venezuela.

The patchy distribution of the endemic treponematoses in some countries reflects such factors as isolation and low socio-economic and hygienic standards. Seasonal and other variations in prevalence are possibly due to physiographical and nutritional factors. Yaws, endemic syphilis, and pinta have the pattern of herd infections, and transmission is characteristically by direct person-to-person contact (though sometimes by indirect contact), the main reservoir of infection being in children, as has been confirmed in WHO-assisted projects (Fig. 2).

Rapid regression of prevalence by mass treatment

The introduction of long-acting penicillins, which remain at treponemicidal levels in the blood and tissues for many weeks following a single injection, profoundly changed the public health approach to the endemic treponematoses of childhood. By contrast with the earlier toxic metal therapy, often used only in individual clinical cases seen at rural dispensaries and hospitals and having at best a palliative effect from the public health standpoint, the long-acting penicillins permitted systematic large-scale treatment surveys covering entire populations and carried out by mobile teams in the course of selective, multi-purpose, or integrated projects.

The use of mass treatment techniques for yaws eradication was first attempted in Haiti, with assistance from WHO and the Pan American Health Organization (which acts as the regional organization for WHO in the Americas). This trial, which was preceded by evaluation studies of the efficacy of long-acting penicillin in yaws, was undertaken following proposals by the United Nations Technical Assistance Mission in Haiti [3] and on the recommendation of a WHO Expert Committee on Venereal Infections. [4] A me-

[3] United Nations (1949) *Mission to Haiti. Report of the United Nations Mission of Technical Assistance to the Republic of Haiti*, New York (Publication II.B.2).

[4] *Wld Hlth Org. techn. Rep. Ser.*, 1950, 13, 16.

thodology was gradually develope
on the basis of experience not on
but in other countries with diff
prevalence rates (Indonesia, the I
Thailand).

At the same time the successful
paign against endemic syphilis in
had shown to what extent the tre
contacts is necessary to ensure
results, and the technical policies
penicillin campaigns formulated
quent expert committees owed m
findings. These committees kept th
ing endemic treponematoses p
under continuous review, while man
health administrations in developing
joined the proposed co-ordinated p
aimed at eliminating these infect
health problem. This programme v
the first to lend itself particularly t
tional aid by WHO and UNICEF
had a considerable impact on healt
oping countries is illustrated by the
specific results and by the reductio
valence obtained in selected areas w
ent initial prevalences and with small,
sized, or large populations:

(1) In Western Samoa the prev
active yaws in a population of 108
11.3% in 1955, with 3.3% infectio
Following a systematic treatment su
resurvey campaign, covering 96%-10
population, less than 0.001% total
found in 1958. Only isolated infecti
have been found since in the rura
programme that developed from the c

(2) In Bosnia, Yugoslavia, mass se
campaigns were held between 1948 a
to detect the prevalence of endemic
in the rural populations affected. T
ered about one million people and
rates varying from 2.5% to 60.1%, wi
13.7% active cases and 2.5% in
lesions. No new case of infectious e
syphilis has been reported in Bosnia fo
years, although continuous follow-up
have been undertaken throughout the
part of multi-purpose screening (*inter*
mycosis of the scalp) carried out in co