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THE INDONESIAN TREPONEMATOSES CONTROL PROJECT

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SYNOPSIS

Yaws control in Indonesia is based on use of the trained polyclinic nurse and his assistant, the " djuru-patek "; the polyclinics existed before the control began and each serves one subdistrict with a population of about 30 000. The campaign is thus part of the established health services from the start and consolidation presents few difficulties of integration. Surveys and resurveys are held by calling together the village population for examination and later for treatment. The maximum dose (1.2 million units of PAM) is given to active cases only. At resurveys most active cases are found in those who had latent or incubating yaws when seen earlier.

It is pointed out that prevalence ratios of active cases to seroreactors of 1 : 3-4 are probably due to previous treatment having been given; in previously untreated areas, a ratio of 1 : 2 is more usual.

In the consolidation stage, surveillance is maintained in polyclinics, villages and schools and the fullest co-operation of the population is sought, as it is at all stages of the campaign.

The methods used in the Indonesian yaws campaign were reported at the First International Symposium on Yaws Control, held in Bangkok in March 1952,[a] and in former publications.[b] Efforts to improve campaign

[a] Soetopo, M. & Wasito, R. (1953) *Experience with yaws control in Indonesia : preliminary results with a simplified approach.* In : World Health Organization, *First International Symposium on Yaws Control*, Geneva, p. 273 (*World Health Organization : Monograph Series*, No. 15)

[b] See, for instance : World Health Organization, Expert Committee on Venereal Infections and Treponematoses (1953) *Wld Hlth Org. techn. Rep. Ser.*, **63**

techniques are being constantly made by field trials directed to that end in the campaign itself.

At first the campaign, based on clinical inspection, was carried out by treponematoses control programme (TCP) teams of qualified nurses (known as " mantris "), or more recently as " djuru-rawats ". It soon became apparent that the programme could not readily develop into a nation-wide campaign if this method only was used.

A simplified control method was introduced, based on the same principles, but simplified as regards personnel, supply requirements, finance and administration. This was given the name of Treponematoses-Control Project, Simplified (TCPS). In this simplified method the field work is carried out by one qualified nurse in charge of an existing polyclinic in a subdistrict and a relatively junior member of the health service, a " djuru-patek ", serving as an assistant to the nurse. The polyclinic is a rural health unit, and a subdistrict has a population of about 30 000.

The TCPS method has made it possible to expand the campaign since 1953. By the end of August 1955 the total number of TCPS teams in Indonesia was 636. From the results achieved, the following conclusions may be drawn:

(1) The TCPS method is effective for combating yaws. It is economical, simple, flexible, efficient and adapted to the local circumstances of rural areas in Indonesia.

(2) It is carried out by moderately readily available auxiliary personnel, requiring only short and simple training.

(3) The use of the " djuru-patek " as a junior health worker has made it possible to carry out a widespread and massive control programme.

(4) The speed of the work of the " djuru-patek " is satisfactory and his errors in diagnosis are negligible.

(5) Results of the TCPS are satisfactory and comparable with those of TCP teams.

It is not, however, expected that yaws will be eliminated by an initial mass treatment survey alone, and resurveys are an important part of the programme.

A number of factors affecting the results of the campaign have especially been studied and are dealt with in the following pages.

Coverage

The coverage (the percentage of the population examined) is a very important factor in a mass campaign, regardless of the method used, and it may be decisive. The better the coverage, the better the results (see Tables I and II). The ideal coverage of 100% can only rarely be reached.

TABLE I. PREVALENCE OF YAWS IN DJAWA TIMUR PROVINCE, EAST JAVA

Subdistrict	Nguling	Cumbang	Tongas	Drijoredjo	Gondang
Initial treatment survey					
Total population	23 414	12 555	27 935	19 091	35 887
Population examined	23 108	12 279	22 732	16 630	33 704
Percentage examined	*98.7*	*97.8*	*81.4*	*87*	*94*
Cases of yaws diagnosed	1 924	2 581	3 067	1 694	7 801
Percentage of yaws	*8.3*	*21*	*13.5*	*10.2*	*23.1*
First resurvey					
Total population	23 670	12 818	28 838	19 016	34 092
Population examined	18 570	12 127	22 300	16 983	31 107
Percentage examined	*79*	*94.6*	*77.3*	*89.3*	*90.2*
Cases of yaws diagnosed	757	722	1 096	577	1 466
Percentage of yaws	*4.1*	*5.9*	*4.9*	*3.4*	*4.7*
Second resurvey					
Total population	23 953	12 933	29 695	19 285	34 971
Population examined	15 864	10 577	21 513	17 538	33 289
Percentage examined	*66.2*	*81.8*	*72.4*	*91.4*	*95.2*
Cases of yaws diagnosed	210	180	207	110	416
Percentage of yaws	*1.3*	*1.7*	*0.9*	*0.6*	*1.2*
Third resurvey					
Total population	24 236			19 791	35 766
Population examined	8 447			18 386	33 393
Percentage examined	*34.8*			*92.9*	*93.4*
Cases of yaws diagnosed	63			68	353
Percentage of yaws	*0.7*			*0.4*	*1*

Experience in the regular vaccination campaign against smallpox has led to a level of 80% being accepted as practical. In the yaws campaign the average coverage for the whole of Indonesia is 70%, but there are places where the attendance has been less than 50%, and others where it has been nearly 100%.

Good attendance depends on several factors. There must be unwearying activity in the campaign as a whole and by the field workers themselves in particular. Moreover, without the full co-operation of the people and their leaders there will be no success. To obtain this, the campaign must be adapted to the social life and customs of the people. At the same time, the

TABLE II. PREVALENCE OF YAWS IN THREE SUCCESSIVE SURVEYS IN HIGHLY INFECTED AREAS OF DJAWA BARAT PROVINCE, EAST JAVA

Subdistrict	Mauk	Tangger-ang	Batut-jeper	Sepatan	Taluk Naga
Initial treatment survey					
Total population	44 892	62 954	40 976	48 429	45 892
Population examined	17 920	20 868	17 606	23 369	18 172
Percentage examined	*40*	*33*	*42*	*48*	*40*
Cases of yaws diagnosed	2 758	2 270	2 057	2 447	2 763
Percentage of yaws	*15*	*11*	*12*	*10*	*15*
First resurvey					
Total population	40 218	50 351	43 480	47 262	43 547
Population examined	16 918	10 847	10 078	10 390	12 188
Percentage examined	*42*	*21*	*23*	*22*	*26*
Cases of yaws diagnosed	2 079	768	640	994	697
Percentage of yaws	*12*	*7*	*6.4*	*9*	*5.6*
Second resurvey					
Total population	49 648	58 956	46 436	44 794	25 719
Population examined	26 215	26 735	11 166	12 057	9 511
Percentage examined	*52*	*45*	*24*	*26*	*37*
Cases of yaws diagnosed	1 692	1 530	591	1 041	746
Percentage of yaws	*6.5*	*5.7*	*5.3*	*8.4*	*7.8*

methods of the yaws campaign workers must be co-ordinated with the work of the smallpox vaccination service, the agriculture information service, etc.

Survey techniques

The techniques for surveys used in Indonesia may be:

(1) the convocation method;

(2) house-to-house visits; or

(3) a combination of the above.

Convocation. The calling together of village people is a procedure which existed in Indonesia long before the yaws campaign began and is a common social event in Indonesian village life greatly enjoyed by the people. It is a custom which has been made use of in the campaign with very satisfactory results. Before the campaign proper gets under way, the " djuru-patek ", in co-operation with the local administrative officials, informs the population of the purpose and meaning of the fight against yaws. Later, when the

campaign itself begins, a signal beaten on the village's wooden drum gathers the people at the house of the headman or of one of the other village officials, where they are examined. In thinly populated areas, the people are gathered in small numbers in more numerous places.

The census list is the administrative basis for the examinations. These lists are essential. They have to be prepared beforehand, and must be as up-to-date as possible. During examinations people are called forward, according to these lists, by a village official who knows the people well. In the census list individuals are given a serial number, a house number and a family number. Sex and age are recorded. Usually the head of the family is entered as " family member No. 1 ", the mother " family member No. 2 ", the eldest child " family member No. 3 ", and so on. Recording the serial number, the house number and the family member number is necessary since in Indonesia many people bear the same name. Each family head is given a family card bearing the names of the family members. This card is to be shown at examinations. The village is divided into blocks, with a central examination place so that the villagers will not have to walk farther than one and a half kilometres.

House-to-house visits. Under this system, the " djuru-patek " or " yaws-scout ", carrying his administrative equipment and accompanied by one of the village officials, visits the village dwellings one by one and performs his examinations on the spot, the inhabitants of the village or of a certain block of the village having previously been asked to remain at home on the appointed day. This method is particularly used in hilly areas, but it has its difficulties.

The " djuru-patek " will have heavier duties than he has during convocations; for various reasons he may not do his duties accurately, and supervision is difficult in these circumstances. The villagers themselves or their officials may also raise objections.

Treatment

In Indonesia, under the TCPS, the following methods are used:

The first four days are used by the " djuru-patek " in co-operation with the administrative officers to convoke and examine about 200 to 300 people daily, individually, recording his findings on the population census list. Those infected are noted and told to return on the next injection day. The patient is also given a card on which are written the details concerning him and the dose of penicillin to be given.

On the fifth day, the polyclinic nurse checks the diagnoses and gives injections to those whom he regards as infected. The maximum dose now given is 1.2 million units of PAM.

The sixth day is used by the " djuru-patek " for administrative purposes.

Under certain circumstances, for instance in remote and inaccessible areas and hamlets, the gathering, examination and treatment are done on the same day.

In Indonesia injections are not usually given on the day of examination because the " djuru-patek " is not allowed to give them and the qualified nurse (chief of the polyclinic who works part-time in the TCPS) cannot come every day to do so, but nevertheless fewer than 1 % of patients fail to attend on the treatment day.

The Missed Potential Sources of Infection

The yaws campaign in Indonesia is based on clinical inspection and the treatment of all patients with clinically active yaws. Preventive treatment is limited to mother-and-child contacts.

In a paper presented at the first international symposium on yaws control held in Bangkok,[a] it was stated that with TCP and TCPS it is impossible to detect infected persons in whom the disease is incubating or is in a state of latency.

" Many of [these] persons free from active yaws at the initial survey had developed infectious lesions by the time the second survey was carried out. This suggests that a wider group of persons must be treated. Data collected during the resurvey show that infectious cases, developing after the initial survey, originated mostly from latent cases which were free from symptoms during the initial examination. "

In Table III it will be seen that of a total examined of 4822, the prevalence of active yaws was 38 %, and of seroreactors, 55.5 %; among 2789 persons with no clinical signs of yaws, 33.5 % were seroreactors.

The large group of latent cases requires close attention. The question is how to solve the problem in a simple and practical way, since the discovery of latent cases is not easy.

It has been said that it is not necessary to worry about the latent cases because they will be discovered during the resurvey. However, these latent cases may become active again and each may give rise to several new infections; in fact, the number of new infections will increase in proportion to the time which elapses between the initial treatment survey and the resurvey.

Resurveys

Resurveys are defined as re-examinations of the population at definite intervals of time. One of the characteristics of yaws seen in resurveys is relapses after latent periods of several years.

[a] Soetopo, M. & Wasito, R. (1953) *Experience with yaws control in Indonesia : preliminary results with a simplified approach.* In: World Health Organization, *First International Symposium on Yaws Control, Geneva,* p. 273 (*World Health Organization : Monograph Series,* No. 15)

TABLE III. CLINICAL AND SEROLOGICAL (VDRL) SURVEYS IN 4 VILLAGES ON GILIRADJA ISLAND, MADURA

	Population				Persons examined		Active yaws		No yaws	
	total (A)	earning living outside villages (B)	in villages (C)	not examined (D)	total (E)	seroreactors (F)	total (G)	seroreactors (H)	total (I)	seroreactors (J)
Number	6560	1285	5275	453	4822	2676	1833	1669	2789	1002
Percentage		19.6 % of column A	80.4 % of column A	8.6 % of column C	91.4 % of column C	55.5 % of column E	38 % of column E	91 % of column G	61.9 % of column E	33.5 % of column I

Since the Indonesian yaws campaign is based on clinical inspection for detection of yaws cases, all symptomless cases in the incubating and latent stages are missed as well as a few cases (less than 5%) on account of diagnostic errors. Some patients among the people who are not seen at surveys are also missed. The purpose of resurveys is to correct these defects.

Frequency

The resurvey begins as soon as the last village in the initial treatment survey is completed. So the time interval between initial survey and resurvey will vary from about six to eight months in the different subdistricts, which have an average population of about 30 000.

The main effort is to get the area as quickly as possible into the consolidation phase, which is reached when the prevalence of active yaws is less than 2% and of infectious cases less than 0.5%, based on attendance at the last resurvey of at least 80% of the population.

The number of resurveys depends on the initial prevalence of yaws, the extent of population coverage and the results of treatment.

In areas where high coverage (80% or more) was obtained, the consolidation phase was reached in three surveys, while in areas with low coverage (60% or less) more surveys were required.

Technique

Using the census as an administrative basis, the steps at the initial treatment survey and at resurvey are essentially the same. But the census will have changed between the initial treatment survey and the resurveys through deaths, births and changes of residence. Therefore, it must first be brought up to date before a resurvey commences.

A few days before the resurvey, the village headman is informed and through him the day and place of examination are set. He and his assistants distribute house-cards on which are recorded the house number, family number, name, sex and age of every member of the house.