

directing council



PAN AMERICAN
HEALTH
ORGANIZATION
XI Meeting

regional committee

WORLD
HEALTH
ORGANIZATION
XI Meeting



Washington, D.C.
September, 1959

CD11/14 (Eng.)
25 August 1959
ORIGINAL: SPANISH

Topic 28: STATUS OF SMALLPOX ERADICATION IN THE AMERICAS

1. Introduction

The XV Pan American Sanitary Conference (San Juan, Puerto Rico, 1958), after a detailed study of the problem of smallpox in the Western Hemisphere, declared, in Resolution VI, that smallpox eradication is a problem that urgently requires the attention of all countries; urged that nation-wide eradication plans be carried out where the disease still exists; requested the cooperation of the Member Governments in supplying smallpox vaccine and technical advice; recommended that the Bureau take all measures necessary to attain the goal of continent-wide eradication; and requested the Bureau to undertake the necessary studies to establish a definition of eradication suitable for uniform application in the different countries.

The Twelfth World Health Assembly (Geneva, 1959) adopted Resolution WHA12.54, which the Director-General wishes to bring to the attention of all regional committees of the WHO. The complete text of this resolution is therefore presented in Annex I of this document.

In view of the interest shown by the governing bodies of the Organization, and because of the recently-observed increase in the incidence of smallpox, which has reached epidemic proportions in some countries, the Director deemed it necessary to present the problem to the XI Meeting of the Directing Council for consideration.

2. Definition of "Smallpox Eradication"

In compliance with the mandate given by the XV Pan American Sanitary Conference, the Bureau has initiated the studies and consultations necessary to establish a definition of "smallpox eradication."

As indicated in the resolution of the Conference, such a definition should be suitable for universal application, so that there may be a single criterion for judging when the countries have reached the ultimate goal in the fight against this disease. To this end, the Bureau is

maintainning close contact with WHO, which is also attaching much importance to the problem.

The establishment of an adequate definition of eradication requires a certain amount of time, for it is necessary to carry out consultations with authorized persons in the various countries, as well as an exchange of opinions and views between PASB and WHO. It is expected that this work will be completed during the forthcoming months, in order that concrete information may be presented to the next meeting of the Directing Council.

The preliminary studies and consultations lead to the assumption that, for practical purposes only, in countries where smallpox had been persistently present the disease may be considered to have been eradicated when no indigenous cases occur for two to three consecutive years after immunization of not less than 80 per cent of the population, provided that the level of immunity in such countries is kept constantly at that rate.

3. Extent of the Problem

Smallpox continues to be a serious public health problem in the Continent, as is indicated by its presence in a number of countries, some of which show high rates of incidence. According to available data, in the ten-year period 1949-1958, 15 countries and other areas reported a total of 103,491 cases, with at least 16,000 deaths. In the same period, no cases were reported by 7 countries (Canada, Costa Rica, Dominican Republic, El Salvador, Haiti, Honduras, and Nicaragua) or by 15 other areas (Bahamas, Barbados, Bermuda, British Honduras, Falkland Islands, French Guiana, Guadeloupe, Jamaica, Leeward Islands, Panama Canal Zone, Puerto Rico, Saint Pierre and Miquelon, Surinam, Virgin Islands, and Windward Island).

Table A shows the geographic distribution of smallpox cases reported to the Bureau in the period 1949-1958, by years. The table indicates that up to 1958 some of the countries, such as Chile, Mexico, Perú, and Venezuela, which formerly had a high incidence, have reported no cases of the disease in recent years, a fact undoubtedly due to the eradication campaigns conducted in those countries. The number of reported cases is decreasing in other countries, such as Bolivia, Paraguay, and Colombia, also as the result of such campaigns. As can be seen, no cases have occurred in the past five years in Central America and the Caribbean area, with the exception of Panama, which in 1958 had an outbreak of 8 cases in a town bordering on Colombia. However, since in many of these countries and areas the number of vaccinations applied is relatively small, an important proportion of the population is susceptible to the disease.

In the first half of 1959, 6 cases were reported in Argentina, 38 in Brazil, 535 in Colombia, and 366 in Ecuador. In the succeeding months of 1959 reports have been received of important outbreaks in Brazil and Ecuador. Chile, where no cases had been present since 1954, reported the

occurrence of 3 imported cases, followed by 1 secondary indigenous case.

4. Present Status of the Program

The Organization has continued to promote and to cooperate with the Member Governments in the planning of smallpox eradication programs through vaccination campaigns that will eventually be incorporated in the general structure of national public health services.

To assist the governments in organizing and developing the vaccination campaigns, the Bureau has provided technical advice in the production of smallpox vaccine, furnishing equipment for the preparation of dried vaccine to a number of countries, and has also assisted several countries in obtaining prepared vaccine ready for use. It has provided the services of consultants specialized in the organization and operation of vaccination campaigns, as well as fellowships for the training of national personnel. In addition, the Bureau has made available the services of an accredited laboratory to test the purity and potency of the vaccines produced by the national laboratories.

Table B shows the most recent data received by the Bureau on vaccinations carried out in 1958 and the first half of 1959; and Table C contains the data on vaccine production during 1957, 1958, and the first half of 1959.

A summary of the status of activities in the various Member Countries is given below.

In the Lesser Antilles several cases were reported in 1958, one in Saint Vincent and two in Anguilla, which were later diagnosed as chickenpox. This report gave rise to an intensive vaccination campaign, which revealed the low level of immunity in the population. The vaccine used on that occasion was provided, free of charge, by Venezuela.

In Argentina the Ministry of Public Health, with the collaboration of the Bureau, organized meetings in the Provinces of Salta, Jujuy, and San Juan in order to discuss with the health personnel of those provinces their smallpox eradication campaigns, as a basis for planning the program on a nation-wide scale. For this purpose, negotiations have been undertaken to extend the agreement between the Government and the PASB. The present production of glycerinated vaccine is sufficient (10,000,000 doses in 1958) to meet the country's requirements. Dried smallpox vaccine production is still low (155,000 doses in 1958).

In Bolivia several outbreaks occurred in 1957 in Cochabamba and in La Paz Department, as a result of which emergency vaccination campaigns were carried out, with dried vaccine obtained from Chile and Peru. Later, a nation-wide program was undertaken with the aim of covering

a minimum of 80 per cent of the country's population. The vaccine was provided by the Institut de Vaccine of Paris and by the National Institute of Health of Peru. The house-to-house method was employed and, where appropriate, vaccination of persons not vaccinated in the home was carried out in temporary centers. All inhabitants were given the vaccination, with the exception of infants under 4 weeks old and persons severely ill or suffering from skin diseases. By the end of 1958, a total of 2,432,186 vaccinations had been reached. The program is now being consolidated by extending the vaccination to certain sparsely populated areas and to areas that have not yet been covered. To maintain a high level of immunity, services are being established in urban vaccination centers and rural mobile units. The International Cooperation Administration of the United States is actively collaborating in this program. The dried vaccine production laboratory, for which equipment was provided by the Organization, entered the production stage and has turned out 363,000 doses of vaccine during the first half of 1959.

The Government of Brazil has approved a national plan for smallpox eradication and has started activities in the States of Maranhão, Alagoas, Rio de Janeiro, Paraná, Rio Grande do Sul, and Goiás. The Organization has sent equipment for the dried vaccine production laboratories in the States of Rio Grande do Sul and Pernambuco. An offer was made also of additional equipment to expand the laboratory at the Oswaldo Cruz Institute. A fellowship was awarded to a professional for visits to scientific centers that produce dried vaccines. A total of 4,139,872 persons were vaccinated in 1958, and 2,129,232 during the first half of 1959. The production of glycerinated vaccine during the same periods was 8,196,555 and 6,219,622 doses, respectively.

In Chile the regular vaccination program is the responsibility of the local public health services, which work to maintain the protection level of the population, particularly in rural areas, where smallpox vaccination is applied jointly with BCG immunization. As a consequence of the smallpox cases mentioned previously (3 imported and 1 indigenous), the authorities have undertaken an intensive vaccination program. Measures are also being taken to increase the national production of dried smallpox vaccine, and the Organization provided additional equipment in 1958 for that purpose. In 1958 production totalled 862,500 doses of glycerinated vaccine and 600,000 of dried vaccine; for the first half of 1959, it reached 600,000 doses of glycerinated vaccine and 510,000 of dried vaccine.

In Colombia the national campaign was started in October 1955 with the aim of vaccinating 80 per cent of the population, estimated at 9,600,000 inhabitants, over a period of five years. Another object of the program is to incorporate smallpox vaccination in the activities of the local public health services, on a systematic basis, in order to maintain permanently the immunity level of the population. The Organization has been providing the services of a consultant to cooperate with the national authorities in the development of the program. It also furnished the services of a consultant specialized in dried vaccine production, as well

as fellowships to three professionals for the study abroad of vaccine production and the organization and operation of vaccination campaigns. UNICEF provided equipment for the production of dried vaccine. A systematic house-to-house vaccination campaign was carried out in the Departments of Santander del Norte, Santander, Boyacá, Tolima, and Cundinamarca (including the Federal Department of Bogotá), Caldas, Valle, and Antioquia. As of 31 March 1959, 5,645,851 vaccinations had been administered, 39.7 per cent of which were primary. The Samper Martínez Institute began producing dried vaccine in 1958, in sufficient quantities to meet the needs of the campaign, manufacturing 2,125,800 doses of glycerinated vaccine and 4,087,980 of dried vaccine. In the first six months of 1959 the Institute produced 3,199,550 doses of lyophilized vaccine.

Cuba is producing sufficient glycerinated vaccine to meet the country's needs, as well as small amounts of dried vaccine. The Organization has provided the necessary equipment for larger-scale production of this type of vaccine, and a consultant is scheduled to visit the country soon to cooperate with the national authorities in achieving this goal. The Government has offered 500,000 doses of glycerinated vaccine to the regional program and has announced another contribution of 2,000,000 doses to the world-wide program sponsored by WHO.

In Ecuador the program was started with the goal of vaccinating at least 80 per cent of the country's population over a period of five years. A total of 301,112 vaccinations were applied in 1958, and 160,845 were given in the first half of 1959. The Organization provided the services of a consultant for a three-month period during 1958, and in 1959 designated a permanent consultant to collaborate with the Government in this program. The National Institute of Health produced 161,830 doses of glycerinated vaccine and 337,900 of dried vaccine in 1958, and 540,010 doses of dried vaccine in the first half of 1959.

In Haiti the Government took advantage of the surveillance phase of the yaws eradication campaign to implement a smallpox vaccination program, which started in 1957 in the principal cities of the country. Unfortunately, for administrative reasons, it has not been possible to continue vaccinations in the rural areas. The Ministry of Public Health expects to carry out this work, with the cooperation of the Organization and of UNICEF, as a first phase of an expanded rural health program. The number of vaccinations in 1958 was 443,119 and the vaccine utilized was supplied free of charge by Cuba, Mexico, and Venezuela.

In Mexico, as the result of a campaign that covered the entire national territory, no cases of smallpox have occurred since 1952. Adequate levels of immunity are maintained through regular vaccinations carried out by the local public health services. In 1958, 5,000,000 persons were vaccinated. The Organization has provided equipment for the preparation of dried vaccine, as well as the services of a consultant

specialized in the large-scale production of this type of vaccine. Mexico has large amounts of glycerinated vaccine (12,000,000 doses produced in 1958). Five million doses were placed at the disposal of the Organization for the regional program.

In Paraguay the vaccination campaign was started in September 1957, with the cooperation of the Organization, and as of 30 June 1959 a total of 976,617 persons, or about 60 per cent of the country's population, had been vaccinated. By the end of the year it is expected that 80 per cent of the population will have been immunized. Glycerinated vaccine produced in Uruguay has been utilized during the entire campaign.

In Peru the smallpox eradication campaign was launched in October 1950, with the cooperation of the Organization. A total of 7,672,892 persons, or 87 per cent of the country's population, have been vaccinated. The results of this well-organized campaign are evidenced by the fact that no cases have occurred in the country since December 1954. Persons vaccinated totalled 1,273,017 in 1958 and 441,445 in the first half of 1959. The National Institute of Health produced 3,896,255 doses of dried vaccine and 932,100 of glycerinated vaccine in 1958, and in the first half of 1959, 459,585 doses of glycerinated vaccine.

In Uruguay a vaccination campaign was organized in the area bordering on Brazil, and plans are being made to extend the campaign to the entire country. The agreement covering this program could not be signed owing to certain legal implications related to the signing of the Basic Agreement with the Organization. The laboratory of the Municipality of Montevideo produced 2,100,000 doses of glycerinated vaccine. Equipment for the production of dried vaccine was provided by the Organization. In 1958, 102,054 persons were vaccinated, and in the first half of 1959, 34,553 persons.

In Venezuela the campaign was successfully completed throughout the national territory, and no cases of smallpox have occurred since 1957. To consolidate the results achieved, it is planned, among other measures, to increase the production of dried vaccine (the Organization has provided the necessary equipment) and to integrate smallpox vaccination as a routine activity in the local health services. In 1958, 862,585 persons were vaccinated, and in the first half of 1959, 344,300 persons. Vaccine production in 1958 was 6,000,000 doses of glycerinated vaccine and 200,000 of dried vaccine, and in the first half of 1959, 3,000,000 doses of glycerinated vaccine and 300,000 of dried vaccine.

5. Final Considerations

The smallpox eradication campaign in the Americas is progressing at a slower pace than was expected. Achievement of the objective of eradication throughout the Hemisphere will require the concerted efforts of all interested

countries both to protect their own inhabitants and to safeguard other countries that have already taken the necessary steps to eradicate the disease. It is known that, in many countries, the delay has been due to financial and administrative difficulties, among which are lags in the acquisition of supplies and equipment, shortage of well-disciplined and adequately remunerated workers, lack of adequate transportation facilities, and deficient systems for payment of travel expenses of field workers.

The expenditures required for completion of the hemisphere-wide campaign to eradicate smallpox are relatively small when compared with the enormous costs of campaigns to eradicate other major diseases. It is to be hoped that the governments will be in a position to ensure the necessary provision in their national budgets for the prosecution of the smallpox eradication activities.

For more than 150 years we have had available, to combat this disease, an effective vaccine which, when properly and systematically applied, will ensure complete protection of the population. There is no doubt that the eradication of smallpox can be, and should be, achieved in the Americas.

It is, therefore, essential to insist on the need for the countries to exert all efforts necessary to surmount the administrative or financial difficulties that may have delayed the activities in the fight against smallpox, and to accord the smallpox eradication program the importance and priority it deserves, from the viewpoint of both national and international health.

The governing bodies of the Organization have repeatedly stated the need for eliminating smallpox, once and for all, from the Western Hemisphere. The Bureau has been collaborating in this aim and is prepared to continue serving the Member Governments, with every means at its command, in order that this ultimate goal may be attained within the shortest time possible.

TABLE A

REPORTED CASES OF SMALLPOX IN THE AMERICAS, BY COUNTRY, 1949 - 1958

Area	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Total	18,352	20,815	9,221	9,301	8,957	11,979	8,348	6,371	5,836	4,311
Argentina	1,609	4,788	1,404	982	336	256	55	86	335	27
Bolivia	805	594	728	432	429	624	372	481	1,310	183
Brazil (a)	670	706	1,190	1,668	923	1,035	2,580	2,385	1,017	1,200
Chile	4	2,744	47	15	9	-	-	-	-	-
Colombia	3,040	4,818	3,844	3,235	5,526	7,203	3,404	2,572	2,145	2,009
Cuba	3	-	-	-	-	-	-	-	-	-
Ecuador	664	251	174	665	708	2,516	1,831	669	923	863
Guatemala	4	10	3	1	1	-	-	-	-	-
Mexico	1,060	762	27	-	-	-	-	-	-	-
Panama	-	-	-	-	-	-	-	-	-	b) 8
Paraguay	179	304	282	797	770	207	57	132	103	21
Peru	6,305	3,612	1,218	1,360	172	115	-	-	-	-
United States	49	39	11	21	4	c) 9	c) 2	-	c) 1	-
Uruguay	9	3	-	16	7	1	45	42	2	-
Venezuela	3,951	2,181	280	109	72	13	2	d) 4	-	-
British Guiana	-	-	11	-	-	-	-	-	-	-
Martinique	-	-	1	-	-	-	-	-	-	-
Netherlands Antilles	-	3	1	-	-	-	-	-	-	-

(a) Data for the Federal District and state capitals, excluding: Salvador 1953 and 1954; Niteroi 1955.

(b) Including 4 imported cases.

(c) These cases do not fulfill the generally accepted criteria for a diagnosis of smallpox.

(d) Clinical diagnosis not supported by epidemiological evidence.

TABLE B
Smallpox Vaccinations in the Americas
Year 1958 and first half of 1959

C o u n t r y	1 9 5 8	1 9 5 9 (first half)
Argentina	714,393	107,630
Bolivia	2,432,186	226,099 (1)
Brazil	4,139,772	2,129,232
Chile	-----	- - - -
Colombia	2,557,615	1,371,881
Costa Rica	25,395	10,200
Cuba	7,996	6,668
Dominican Republic	4,511	1,340
Ecuador	301,112	160,845
El Salvador	43,620	17,235
Guatemala	99,200	32,212
Haiti	443,119	- - - -
Honduras	32,328	10,637
Mexico	5,000,000	3,000,000
Nicaragua	10,108	5,415
Panama	48,610	21,105
Paraguay	594,003	184,005
Peru	1,273,017	441,445
Uruguay	102,054	34,553
Venezuela	862,585	344,300
British Guiana	2,720	4,248

(1) As of May 1959

TABLE C

Production of Smallpox Vaccine in 20 Countries in the Americas
in 1957, 1958, and first half of 1959
(Number of doses)

Country	1957		1958		1959 (first half)	
	Glycerinated Vaccine	Dried Vaccine	Glycerinated Vaccine	Dried Vaccine	Glycerinated Vaccine	Dried Vaccine
Argentina	20,000,000	110,000	6,500,000	83,000	3,000,000	60,000
Bolivia	- - - -	- - - -	- - - -	37,000	- - - -	363,000
Brazil	12,000,000	- - - -	8,196,555	- - - -	6,219,622	- - - -
Chile	2,500,000	500,000	862,500	885,000	600,000	510,000
Colombia	6,688,300	550,600	2,125,800	4,087,980	- - - -	3,199,550
Costa Rica	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Cuba	190,000	- - - -	180,000	- - - -	150,000	50,000
Dominican Republic	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Ecuador	- - - -	942,425	161,830	337,900	- - - -	540,010
El Salvador	221,500	- - - -	210,000	- - - -	91,340	- - - -
Guatemala	143,000	- - - -	92,345	- - - -	90,230	- - - -
Haiti	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Honduras	31,200	- - - -	31,100	- - - -	8,330	- - - -
Mexico	9,482,820	9,500	8,819,023	- - - -	10,059,171	50,000
Nicaragua	25,870	- - - -	35,880	- - - -	12,350	- - - -
Panama	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Paraguay	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Peru	865,365	2,101,200	932,100	3,896,255	459,585	2,279,710
Uruguay	1,500,000	110,000	2,100,000	- - - -	500,000	- - - -
Venezuela	- - - -	- - - -	6,000,000	200,000	3,000,000	300,000

RESOLUTION WHA12.54

SMALLPOX ERADICATION

The Twelfth World Health Assembly,

Having considered the report of the Director-General on smallpox eradication,¹

Noting:

- (1) that although great progress has been made in the eradication of the disease in some areas of the world, important endemic foci of smallpox still remain in other areas, especially in South-East Asia and Africa, from which the disease can be exported to countries already free of it;
- (2) that eradication of smallpox from an endemic area can be accomplished by successfully vaccinating or revaccinating 80% of the population within a period of four to five years, as has been demonstrated in several countries;
- (3) that sufficient scientific and technical information is available on the production of a suitable smallpox vaccine; and
- (4) that although an eradication programme may require, for four or five years, an increase in the national efforts and financial obligations for the intensified campaign against smallpox, the heavy annual burden of continuing expenditure incurred for this purpose may be considerably lightened by increasing the interval between vaccinations once eradication may be considered to have been accomplished,

¹ Document A12/P&B/9

1. EMPHASIZES the urgency of achieving world-wide eradication;
2. RECOMMENDS to the health administrations of those countries where the disease is still present that they organize and conduct, as soon as possible, eradication programmes, making provision for the availability of a potent stable vaccine;
3. REQUESTS the Director-General:
 - (1) to urge health administrations of those countries where the disease is still present to develop eradication programmes and to offer them any necessary technical guidance and advice;
 - (2) to provide for the necessary activities to further smallpox eradication programmes and for the assistance requested by national health administrations for this purpose, in his programme and budget for future years; and
 - (3) to collect from the countries concerned information on the organization and progress of their respective eradication programmes and to report further to the Thirteenth World Health Assembly.