executive committee of the directing council

PAN AMERICAN HEALTH ORGANIZATION

working party of the regional committee

WORLD HEALTH ORGANIZATION

56th Meeting
Washington, D. C.
April-May 1967

Provisional Agenda Item 15

CE56/14 (Eng.)
8 April 1967
ORIGINAL: ENGLISH-SPANISH

STATUS OF SMALLPOX ERADICATION IN THE AMERICAS

In a series of resolutions, fifteen in all, adopted in successive years, starting in 1949, the Directing Bodies of the Organization have expressed their concern about smallpox in the Americas, and their desire to see the disease eradicated in the Western Hemisphere.

In 1958, noting that "smallpox still remained a very widespread and dangerous infectious disease, and that in many regions of the world there existed endemic foci constituting a permanent threat of its propagation and menacing life and health", the Eleventh World Health Assembly requested the Director General to carry out an investigation of the means of ensuring world-wide eradication of the disease.

In accordance with the instructions of the Governing Bodies, the Organization has been actively engaged, since 1950, to the extent resources permit, in a hemisphere-wide program for the eradication of smallpox.

The Organization has continued to assist the Governments in the planning, implementation, and evaluation of smallpox eradication programs based on vaccination campaigns which can, in due course, be incorporated into the routine activities of the general public health services of the countries. This assistance has included technical advisory services, the training of local personnel, and the provision of equipment for the production of freeze-dried vaccine. In other cases, assistance was given in procuring vaccine ready for use, and fellowships were awarded for training local personnel in the organization of vaccination campaigns. The services of an accredited laboratory, where the purity and potency of smallpox vaccine prepared by the national laboratories can be tested, has also been made available to the Governments.

Substantial progress towards the eradication of the disease has been made since 1950. The progress varies greatly from country to country, so that, although an important group of countries has achieved the objective of eliminating the disease and others are close to the goal, there are still countries in which smallpox is present.

The remaining foci of smallpox in the Americas not only constitute a problem for the countries in which they occur, but are also a continuous threat and cause of concern to those already free of the disease, and they are forced to allot sizable funds to efforts to maintain the immunity of the population at a high level. The reintroduction or the threat of reintroduction of smallpox has already forced individual countries already free of the disease to repeat mass national vaccination campaigns.

Experience shows that intensified systematic vaccination programs using potent vaccines can rapidly eliminate the disease. No unsurmountable technical problems have occurred. The difficulties experienced in achieving eradication have been principally due to the lack of funds for personnel and supplies, deficiencies in the conduct of the vaccination campaigns, or failure to establish adequate surveillance or maintenance services.

In 1966 the countries and territories of the Americas reported to the Organization 1,412 cases of smallpox, distributed as follows: Argentina 21, Brazil 1,368, Colombia 8, Paraguay 5 and Peru 10.

The reduction in the incidence of smallpox in the Americas since 1955 (see Annex) is an indication of the progress made by the eradication programs in the countries. Of course, all these figures should be interpreted with caution owing to the incompleteness of reporting, but they give an idea of the trend of the disease. The efforts made by the countries to improve systems for the reporting, registration and diagnosis of smallpox are gradually leading to an improvement in our knowledge of the incidence of the disease.

With a view to determining the kind and amount of international assistance needed by the countries in order to eradicate smallpox from the Western Hemisphere, and in accordance with Resolution XXX of the XVI Directing Council, which met in Washinton, D.C., in 1965, the Organization made a detailed appraisal of the smallpox situation in the countries of the Region.

A report containing the findings of the survey was presented to the XVII Pan American Sanitary Conference (Addendum I to Document CSP17/20, Rev.1). The report indicated the type of international assistance the countries requested from PAHO/WHO for the study, organization, conduct, and evaluation of smallpox eradication programs, national smallpox vaccination programs, maintenance programs, and programs for the organization of epidemiological surveillance services.

Based on this appraisal a comprehensive four-year eradication plan was prepared and presented to the XVII Pan American Sanitary Conference. An outline of the plan is given in Document CSP17/20, Rev. 1.

According to the plan:

1. In countries where smallpox exists, the population should be vaccinated against smallpox. Argentina, Brazil, Colombia, Paraguay, and Peru

fall into this group. Bolivia has a vaccination program under way. Uruguay is also included in this group, firstly because cases of smallpox occurred there in 1964, and secondly because it lies between two countries where smallpox is endemic.

2. In countries in which smallpox has been eradicated as the result of well-conducted vaccination programs, but which border on others where the disease exists, maintenance programs and epidemiological surveillance programs should be initiated or continued, as the case may be. Chile, Ecuador and Venezuela fall into this group.

3. In countries in which smallpox does not exist, but which do not fall into the preceding group, the necessary safety measures should be adopted to prevent the introduction and spread of the disease in the event that the population becomes exposed to the risk of infection. This group of countries should make an effort to raise the level of immunity of the population against smallpox, preferably through the national health services, and as part of wider immunization programs.

As for the priority of international assistance, it should first be given to countries where smallpox still exists (the group indicated in paragraph 1 above), and then to countries indicated in paragraph 2 above.

Smallpox eradication programs should be carried out simultaneously over periods not exceeding four years, at the end of which the disease should have been eliminated and the maintenance and epidemiological surveillance programs fully developed and covering the entire territory of the countries concerned. It is of great importance that the execution of the programs in the different countries be synchronized.

The total cost of the smallpox eradication program in the Americas was estimated to be US$16,081,121, of which 84.65% (US$13,610,841) would be contributed by the countries, while international contributions would amount to 15.35% (US$2,470,284). This US$2,470,284 would be spread over a four-year period as follows: first year US$1,556,280; second year, US$446,940; third year US$310,940; and fourth year, US$156,124. Details of these estimates are shown in Annexes 3, 4, 5, 6 and 7 of Document CSP17/20, Rev. 1, submitted to the XVII Pan American Sanitary Conference.

The Conference took note of the Document CSP17/20, Rev. 1, Addendum 1, on the status of smallpox eradication in the Americas and estimated requirements and urged the Director of the Pan American Sanitary Bureau to provide countries with material assistance, in accordance with the budgetary resources available, and that it be furnished to the Governments as the progress of the program requires it and according to the needs of each stage of the program.

Recognizing the need for additional resources and the importance of a coordinated attack on the problem, the Nineteenth World Health Assembly (Resolution WHA 19.16, Off. Rc. Wld. Hlth. Org. 151, 8-9) decided that the

"participation of the Organization in the Smallpox eradication programme should be financed from the regular budget" and "urged countries which plan to strengthen or initiate smallpox eradication programmes to take the necessary steps to begin the work as soon as possible". A total of $2,674,000 has been allocated in the WHO regular budget for the 1967 program and $2,820,000 is proposed for continuing and intensifying the program in 1968. From the total of $2,674,000 the Region was allotted $670,000 for 1967 and $695,000 is proposed for 1968.

In compliance with the resolution, detailed program planning and other preparatory work have been initiated in consultation with the Governments concerned so that the Organization may utilize the funds approved in the best possible manner.

A smallpox regional adviser was appointed in March 1967 to supervise the eradication program in the Americas. Three medical officers and a statistician have also been appointed to assist the Brazilian Health authorities in the national eradication campaign. A medical officer and a statistician, who will be stationed in Zones IV and VI, are being recruited.

A third course on the laboratory diagnosis of smallpox will be held in São Paulo, Brazil, in October, to help strengthen the supporting laboratory services. Two similar courses were held from 16 to 29 October 1966, under the auspices of the Organization and with the collaboration of the Communicable Diseases Center (USPHS) and the Adolfo Lutz Institute (Ministry of Health and Welfare of São Paulo). Fifteen experts from Argentina (3), Brazil (4), Chile (1), Colombia (1), Costa Rica (1), Cuba (1), Ecuador (1), Mexico (1), Peru (1), and Venezuela (1) attended the course.

Agreements are being negotiated with the Governments of Argentina, Colombia, Paraguay and Uruguay for smallpox eradication programs.

The Government of Chile signed an agreement with the Organization for a program for the maintenance and epidemiological surveillance of smallpox.

An adequate supply of high quality, fully stable freeze-dried smallpox vaccine is one of the most important aspects of the eradication program. The development of vaccine production facilities in several countries has been actively promoted by the Organization in recent years. With the assistance of the Organization (consultant services, fellowship training for those concerned with vaccine manufactures, and supplies and equipment) several countries are now producing enough vaccine not only to satisfy their needs, but also to supply the non-producing countries. The countries, in general, are not making adequate use of the facilities offered for the testing of the vaccine produced by their laboratories, and a few are experiencing difficulties in the preparation of vaccine, since some lots do not meet the minimum standards of potency, safety, and stability set by WHO. It will be necessary to have the vaccines tested routinely if their high quality is to be maintained. The Organization is ready to cooperate to ensure the effective

functioning of smallpox vaccine production laboratories and, for this purpose, it has arranged, through the University of Toronto, for the Connaught Medical Research Laboratories to provide advice and assistance in the production and testing of smallpox vaccine, including the training of national medical and para-medical personnel. Experts of the Connaught Medical Research Laboratories will make periodical visits to the smallpox vaccine producing laboratories to evaluate existing facilities and personnel of this Region, and to recommend such changes as are necessary. The first visit will be made in April to the four laboratories in Brazil producing smallpox vaccine. Later in the year, another visit will be made to Argentina, Chile and Peru.

The Organization translated into Spanish and Portuguese a manual prepared by the National Communicable Disease Center (USPHS) on the use and repair of the jet injectors which will be used in the eradication programs. The Portuguese edition has been already distributed to the field personnel of the smallpox eradication campaign in Brazil.

The following is a summary of the progress made in smallpox campaigns in several countries of the Hemisphere.

In 1966 Argentina reported 21 cases of smallpox. An emergency vaccination program was initiated in 1965 because of an epidemic outbreak in the Province of Corrientes, and in that year 4,007,797 persons were vaccinated. In the following year, 825,927 persons were vaccinated.

The National Institute of Microbiology in Buenos Aires was provided with new lyophilization equipment for the production of a sufficient amount of dried vaccine to immunize 80% of the total population of the country in not more than four years. By the end of the year the first batch of vaccine had been prepared, and it is expected that by the beginning of 1967, the Institute will be producing not only all the vaccine the country needs but also sufficient to supply other countries. In 1966 Argentina produced 13,890,000 doses of glycerinated vaccine.

No cases of smallpox were reported in Bolivia in 1966, in which year 933,194 persons were vaccinated. From the time the program was initiated in 1963 up to October 1966, the number of persons vaccinated was 2,176,679. A further 1,268,697 persons needs to be vaccinated if 80% of the population are to be innumized.

Assistance in carrying out the vaccination program was received from the Armed Forces, and in evaluating that program, from the National Malaria Eradication Service.

Three short training courses were organized for 24 vaccinators and 3 team leaders.

Arrangements were made to maintain the level of immunity of the population but for financial reasons the rural areas were not covered. The organization of a permanent epidemiological vigilance service is still under consideration.

In 1966 Brazil reported 1,368 cases of smallpox. The Government of Brazil donated larger amounts of dried vaccine to several countries in the Hemisphere. Up to 30 October the number of vaccinations given was 2,073,232 and the number of doses of dried vaccine and glycerinated vaccine produced up to 24 November was 9,566,580 and 180,380 respectively.

Financial assistance provided by PAHO was used to purchase 40 vehicles for the transportation of the eradication personnel, and 80 foot-pump operated jet injectors.

A short-term consultant helped to prepare the plan of operations for the smallpox eradication campaign in the State of São Paulo, and in seven states in the north-eastern part of the country.

Colombia reported 8 cases of smallpox in 1966. The production of freeze-dried vaccine amounted to 2,535,000 doses but no glycerinated vaccine was prepared.

In Cuba 59,216 persons were vaccinated, and 348,750 doses of glycerinated vaccine were prepared.

In 1966 no cases of smallpox were reported in Chile. Smallpox vaccination was part of the routine activities of the National Health Service, and 1,039,683 persons were vaccinated. The Bacteriological Institute produced 4,000,000 doses of glycerinated vaccine, and 36,500 doses of dried vaccine.

No cases of smallpox were reported in Ecuador in 1966. The maintenance program and epidemiological vigilance operations were continued. The Leopoldo Izquieta Perez Institute produced 2,019,800 doses of dried vaccine, and 715,743 persons were vaccinated.

In Haiti 262,854 persons were vaccinated. The 1966 target was 600,000 vaccinations. Since the initiation of the program (1962) 1,584,691 persons were vaccinated or 45.7% of the final target (3,500,000 vaccinations).

The smallpox vaccination program is being conducted in conjunction with the yaws eradication program. Financial, administrative, and other difficulties hampered the campaign.

Dried vaccine supplied by the Governments of Venezuela and Brazil is being used in Haiti.

Peru notified 10 cases of smallpox in 1966, and 209,858 persons were vaccinated. The National Institute of Public Health of Lima produced 1,033,100 doses of dried vaccine and 479,612 doses of glycerinated vaccine.

In Uruguay 184,430 persons were vaccinated.

Annex

SMALLPOX CASES REPORTED IN THE AMERICAS, 1955 - 1966

COUNTRY	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	a) 1965	1966
ARGENTINA	55	86	335	27	36	65	6	b) 2	-	c) 13	b) 15	21
BOLIVIA	372	499	1310	183	7	1	-	-	-	5	-	-
BRAZIL	d) 2580	d) 2385	d) 1411	d) 1544	d) 2958	d) 3010	8473	9450	6211	e) 2673	f) 1333	1368
CANADA	-	-	-	-	-	-	-	b) 1	-	-	-	-
CHILE	-	-	-	-	1	-	-	-	-	-	-	-
COLOMBIA	3404	2572	2145	2009	950	209	16	41	g) 4	g) 21	149	8
ECUADOR	1831	669	913	863	1140	2185	496	204	45	h) 42	-	-
UNITED STATES	i) 2	-	i) 1	-	-	-	-	-	-	-	-	-
PANAMA	-	-	-	j) 8	-	-	-	-	-	-	-	-
PARAGUAY	57	132	103	21	-	35	-	-	-	7	32	5
PERU	-	-	-	-	-	-	-	-	865	454	18	10
URUGUAY	45	42	2	-	-	k) 19	g) 1	k) 10	b) 1	b) 3	-	-
VENEZUELA	2	l) 4	-	-	-	-	-	11	-	-	-	-
TOTAL	8348	6389	6220	4655	5092	5524	8992	9719	7126	3218	1547	1412

a) Information based on data received up to 20 June 1966.
b) Includes 1 imported case
c) Includes 10 imported cases
d) Incomplete data: Guanabara State and capitals of other States, 1954-1960 (and Rio Grande do Sul State, 1958-1960)
e) Data for all States
f) Data for 12 States and Capitals of 2 other States
g) Confirmed cases only
h) Hospital data, cases not confirmed
i) Cases did not present all symptoms required for smallpox diagnosis
j) Includes 4 imported cases
k) Includes 2 imported cases
l) Clinical diagnosis not supported by epidemiological evidence