OFFICIAL RECORDS
OF THE
WORLD HEALTH ORGANIZATION
No. 212

PROPOSED PROGRAMME AND BUDGET ESTIMATES

FOR THE
FINANCIAL YEAR
1 JANUARY - 31 DECEMBER

1975

WORLD HEALTH ORGANIZATION
GENEVA
1973

5.1.4 SMALLPOX ERADICATION

Objective

To interrupt transmission of smallpox throughout the world.

Approach

For the eradication of smallpox, two principal approaches are simultaneously employed:

- Surveillance/containment activities to interrupt transmission of the disease, detect residual foci (if any) in apparently smallpox-free areas, and contain imported outbreaks should they occur. This requires the development of a reporting network and the establishment of specially trained surveillance teams at national, state/provincial and sometimes lower levels to investigate all suspect cases, to contain outbreaks, and to conduct repeated systematic active search operations to detect unsuspected foci.

- Systematic vaccination to raise population immunity levels in order to retard transmission of the disease, thus facilitating the work of the surveillance teams.

In areas which have become free from smallpox, the vaccination teams frequently extend the scope of their activities to administer other antigens of public health importance, such as BCG, polio, DPT, yellow fever and measles. The surveillance network for smallpox case-reporting is employed for the reporting of other diseases of public health importance.

Review

The intensified global programme of smallpox eradication was begun in 1967, at which time smallpox was endemic in 30 countries, including most of those in sub-Saharan Africa, Brazil and 5 countries of Asia. Importations of smallpox occurred in 12 additional countries. During that year 131 000 cases were reported, a figure estimated to represent not more than 1 in 20 of all cases that actually occurred.

Between 1967 and 1972, WHO-assisted programmes have been conducted in 50 countries, including both those in which smallpox was endemic and those at risk of importation. The 250 million doses of vaccine required each year have been increasingly supplied by laboratories in the endemic areas, which have been provided with technical assistance, supplies and equipment by WHO and UNICEF. Supplementary vaccine requirements have been met by donations from more than 20 countries, the principal donors being the USSR and the United States of America. The quality of all vaccine used in the programme has been monitored by routine testing of batches of vaccine produced. In 1972, the WHO reference centres for smallpox vaccine (National Institute of Public Health, Netherlands, and Connaught Medical Research Laboratories, Canada) tested 340 batches of vaccine.

Virtually all vaccine is now administered by the multiple puncture technique using the bifurcated needle, the development of this method having been fostered by WHO in 1967-68. For vaccination of large groups, jet injectors, first introduced for field use in smallpox vaccination in 1967, are sometimes employed.

Year by year more emphasis has been given to the development of the surveillance component of the programme, as this has been found to accelerate markedly the interruption of transmission even in areas where the vaccination immunity in the population is comparatively low. In support of these activities many seminars have been conducted and training aids and illustrative materials have been developed and distributed. WHO reference centres (the Research Institute of Virus Preparations, Moscow, and the Center for Disease Control, Atlanta, Ga.) regularly receive and process specimens from areas where transmission is believed to have been interrupted or is at a very low level, and where national diagnostic laboratories are not established or are in doubt about the diagnosis. In 1972, 400 specimens were processed by these laboratories. Surveillance activities are now operative in all endemic areas.

Both the extent of smallpox endemic areas and the estimated smallpox incidence have declined steadily. In 1972, only 19 countries reported cases (as against 42 countries in 1967). A total of 65 000 cases were recorded but, because of more complete notification, this is estimated to represent a third or more of the true incidence. Thus, less than 200 000 cases are estimated to have occurred in 1972, compared with at least 2 500 000 cases in 1967. By March 1973, only 4 countries were still considered to be endemic - Bangladesh, Ethiopia, India, and Pakistan. The progress of programmes was such as to suggest

that transmission in Ethiopia and Pakistan could be interrupted within 9 to 12 months. In Bangladesh and India, however, major epidemics persisted and, while many additional measures have been instituted to bring them rapidly under control, the time necessary to interrupt transmission is less certain.

Research programmes have emphasized the study of poxviruses closely related to variola to determine if any mammalian reservoir of smallpox might exist. There is, to date, no evidence of such a reservoir. Support has also been given to research for improving existing smallpox vaccines and to special epidemiological studies.

For smallpox-free countries, vaccination programmes have been extended to incorporate the administration of antigens other than vaccinia and the surveillance of other diseases of national public health importance. In the 20 countries of West and Central Africa, for example, more than 100 million doses of other antigens have been given by vaccination teams.

Proposals for 1975

Smallpox transmission in 1975 is expected to be confined to not more than one or two countries, and increased assistance by headquarters, interregional and regional staff will be provided to accelerate the progress of their programmes. For those countries recently freed of smallpox, or in endemic regions, continued support in the form of technical consultation, seminars, teaching aids and vaccines will be required to assist in the detection of unrecognized foci and importations. Assistance in the further development and evaluation of vaccination programmes designed to provide other antigens in addition to vaccinia will be provided.

Special assessment teams will be required throughout Africa to confirm, 2 years after the last recorded case on the continent, that transmission has been interrupted.

The work of the 2 WHO reference centres for smallpox vaccine will continue as before, to ensure the quality of vaccine used in the programme. An additional WHO regional reference centre for laboratory diagnosis will be established in Calcutta to complement the work of the 2 existing reference centres in Moscow and Atlanta. With the interruption of smallpox transmission over ever larger areas, the work of these reference centres is expected to increase steadily.

Research studies will focus primarily on the identification and further characterization of the variola-related monkeypox and whitepox virus strains, their behaviour on repeated passage in animals, and their epidemiological behaviour in the field. In areas where smallpox persists, appropriate epidemiological studies will be organized to elucidate the special factors concerned, so that transmission may be more rapidly terminated.

Training aids will continue to be provided to the various programmes. Documentary material, both written and on film, will be developed to portray the history and progress of the global programme.

Estimated obligations

5.1.4 Smallpox eradication

		Number of posts			Estimated obligations		
		Regular budget	Other sources	Total	Regular budget	Other sources	Total
					US $	US $	US $
1973	Headquarters.....	10		10	228 380		228 380
	Regions:						
	Africa.....	9		9	376 558	70 200	446 758
	Americas.....	6		6	172 493		172 493
	South-East Asia.....	16		16	823 584	78 200	901 784
	Europe.....						
	Eastern Mediterranean.	17		17	610 389	166 400	776 789
	Western Pacific.....						
		48		48	1 983 024	314 800	2 297 824
	Interregional activities	4		4	224 111		224 111
	Total	62		62	2 435 515	314 800	2 750 315

		Number of posts			Estimated obligations		
		Regular budget	Other sources	Total	Regular budget	Other sources	Total
					US $	US $	US $
1974	Headquarters.....	10		10	259 267		259 267
	Regions:						
	Africa.....	6		6	284 775		284 775
	Americas.....	4		4	139 131		139 131
	South-East Asia.....	17		17	673 457	40 000	713 457
	Europe.....						
	Eastern Mediterranean.	17		17	624 361	384 600	1 008 961
	Western Pacific.....						
		44		44	1 721 724	424 600	2 146 324
	Interregional activities	4		4	241 619		241 619
	Total	58		58	2 222 610	424 600	2 647 210
1975	Headquarters.....	10		10	268 506		268 506
	Regions:						
	Africa.....	6		6	299 285	45 600	344 885
	Americas.....	4		4	130 288		130 288
	South-East Asia.....	14		14	596 835	40 000	636 835
	Europe.....						
	Eastern Mediterranean.	12		12	542 184	362 400	904 584
	Western Pacific.....						
		36		36	1 568 592	448 000	2 016 592
	Interregional activities	4		4	208 585		208 585
	Total	50		50	2 045 683	448 000	2 493 683

Details of projects included in above schedule

AFRICA

Country projects in: Central African Republic, Chad, Dahomey, Guinea, Kenya and Zaire.

Estimated obligations:	1973	1974	1975
Regular budget	342 558	244 775	259 285
Other sources	44 800	-	45 600

Intercountry projects

Estimated obligations:			
Regular budget	34 000	40 000	40 000
Other sources	25 400	-	-

THE AMERICAS

Country projects in: Argentina, Bolivia, Brazil, Colombia, Paraguay, Peru, and Uruguay.

		1973	1974	1975
Estimated obligations:				
	Regular budget	76 506	43 829	32 343
	Other sources	-	-	-

Intercountry projects

Estimated obligations:				
	Regular budget	95 987	95 302	97 945
	Other sources	-	-	-

SOUTH-EAST ASIA

Country projects in: Bangladesh, India, Indonesia, and Nepal

		1973	1974	1975
Estimated obligations:				
	Regular budget	766 933	608 524	530 342
	Other sources	76 800	40 000	40 000

Intercountry projects

Estimated obligations:				
	Regular budget	56 651	64 933	66 493
	Other sources	1 400	-	-

EASTERN MEDITERRANEAN

Country projects in: Afghanistan, Democratic Yemen, Ethiopia, Lebanon, Pakistan, Saudi Arabia, Somalia, Sudan, and Yemen.

		1973	1974	1975
Estimated obligations:				
	Regular budget	571 959	587 833	523 975
	Other sources	161 600	178 600	172 400

Intercountry projects

Estimated obligations:				
	Regular budget	38 430	36 528	18 209
	Other sources	4 800	206 000	190 000

INTERREGIONAL PROJECTS	SME	Number of posts 1973	1974	1975	Estimated obligations 1973 US $	1974 US $	1975 US $
Regular budget							
Seminars and training of smallpox eradication personnel in active detection and execution of multiple-antigen immunization programmes	01				20 000	20 000	20 000
Meeting of regional smallpox advisers	02				8 000	8 000	
Surveillance and assessment teams	03	4	4	4	153 111	170 619	156 335
		4	4	4	181 111	198 619	176 335
ASSISTANCE TO RESEARCH							
Regular budget							
Collaborative research on epidemiological and laboratory characteristics of human and animal poxviruses and on vaccine administration	04				30 000	30 000	24 750
Variations of strains of poxviruses	05				3 000	3 000	
International and regional reference centres	06				10 000	10 000	7 500
					43 000	43 000	32 250