OFFICIAL RECORDS
OF THE
WORLD HEALTH ORGANIZATION
No. 223

EXECUTIVE BOARD

FIFTY-FIFTH SESSION

GENEVA, 20-31 JANUARY 1975

PART I

RESOLUTIONS
ANNEXES

PART II

REPORT ON THE PROPOSED PROGRAMME BUDGET FOR 1976-1977 (FINANCIAL YEAR 1976)

WORLD HEALTH ORGANIZATION
GENEVA
1975

Appendix 2

CASE STUDIES ON PROGRAMME DEVELOPMENT

1. SMALLPOX ERADICATION

The World Health Assembly gave active attention to the worldwide eradication of smallpox as early as 1958, making it one of the major objectives of the Organization. Several countries subsequently initiated mass vaccination programmes, but most were handicapped by a number of factors, including insufficient supplies of potent and stable freeze-dried vaccine, inadequate transport, and a suitably detailed plan and strategy. Between 1958 and 1967, the few countries which succeeded in interrupting smallpox transmission experienced difficulties in maintaining this status because adjacent areas remained heavily infected. In 1966, the World Health Assembly decided to give the programme a new impetus and made available additional funds for this purpose. Thus, in 1967, the intensified global eradication programme began. Its development, and the lessons to be drawn from it, are discussed hereafter for the period 1967 to 1973 inclusive.

An evolving programme strategy

In 1967, as the first step in the development of the intensified programme, a " draft technical guide " on smallpox and smallpox eradication was prepared by WHO headquarters and distributed to WHO regional and field staff as well as to national health administrations. This guide outlined general principles, namely, the need for surveillance and for vaccination programmes employing good quality freeze-dried vaccine; but it was stated in its preface that " no manual could provide a satisfactory single blue-print which would be universally applicable, considering . . . the vast differences in present health structures, personnel and policies, population characteristics and attitudes, geography and climate ". Alternative methods and procedures for programme execution were described and WHO staff as well as national health administrations were actively encouraged to evolve others. The manual itself was termed a " draft " precisely to emphasize the need for each country to develop and to continue to evolve its own scheme or schemes appropriate to the particular conditions obtaining in the various parts of its territory.

With acceptance of the fact that a universal master plan laid down at the commencement of the programme would be both foolhardy and constraining, mechanisms were sought to provide opportunities for a continuing dialogue between WHO headquarters, regional and field staff and countries to permit each national programme to derive the maximum possible benefit from the experience of others.

A number of approaches have been used to achieve this objective. Financial provision has been made for the WHO regional advisers from the five regions principally concerned to meet with headquarters staff annually for concerted planning of the programme. Every opportunity is taken for WHO headquarters and regional staff to travel in the field, to gain first-hand acquaintance with local problems and attempts at their solution, so that successful approaches in one area be considered for application in another. All WHO staff, at all levels, are expected to be out of their duty station at least one-third of their time in order to maintain .this necessary contact with the realities of the programme.

Deliberate efforts are made for WHO headquarters and regional staff to have personal discussions, at least annually, with WHO country and field staff and/or national personnel in each country. Fellowships are granted to national personnel with this object in view. At least one intercountry meeting for senior national officers has been held each year (Asia, 1967; Eastern Africa, 1968; Western Africa, 1969). A large number of national seminars and training courses have been held at various levels in each of the countries concerned, with teaching material provided by WHO.

To facilitate the exchange of experiences, papers are actively solicited from WHO and national programme staff as well as from other sources and at least one such paper has been distributed monthly since the beginning of the programme to well over 500 persons. At three- to four-week intervals, summaries of progress in the smallpox eradication programme and reviews of related subjects have been published in the *WHO Weekly Epidemiological Record*, totalling 102 reports as of March 1973, and over 2000 offprints have been distributed to the national staff concerned in several countries. A number of national health administrations produce their own fortnightly or monthly surveillance reports (e.g., Bangladesh, Botswana, Brazil, Ethiopia, Pakistan, Zaire) which are distributed widely to national health staff of all categories. A regional surveillance report is published monthly by the WHO Regional Office for South-East Asia. Most of the material in these reports is based on local experience, but abstracts from *Weekly Epidemiological Records* are frequently included. Furthermore, since the advent of the intensified " Target Zero " campaign started in the autumn of 1972, WHO headquarters has been distributing to all WHO staff concerned, at three- to four-week intervals, a more comprehensive summary describing in greater detail successes and failures and analysing their causes. These summaries are based on weekly and monthly reports from projects and on analyses made at regional and headquarters levels.

In consequence, although surveillance and vaccination are common to all eradication programmes, no two programmes are identical and the differences between some of them are very great indeed (e.g., Afghanistan, Ethiopia, India and Zaire). For example, early in the global programme, the development of surveillance activities, if necessary at the expense of mass vaccination, was demonstrated to be the most effective approach in western Africa and Indonesia and this approach has since been adopted universally; a simplified scheme of vaccination assessment developed in Afghanistan was subsequently employed in most countries; the Indonesian programme assisted by the WHO Regional Office for South-East Asia originated the now universal Smallpox Recognition Card; the idea for and methodology of area-wide search now employed throughout the endemic zones

of Asia were initiated by a WHO country adviser and his Indian counterparts. Such examples are but a few of legion.

Another facet of the overall strategy was the coordination of assistance provided from various bilateral sources. Every effort had to be made towards full harmonization of WHO and bilateral contributions. The comprehensive bilateral assistance given to 20 countries of West and Central Africa, in close liaison with WHO, has been quite successful in this regard.

In brief, the programme strategy and pattern of execution have evolved as a result of closely coordinated interrelationships between WHO's various operational levels and the national health administrations and other assisting agencies and not as a result of a central master plan imposed by some authoritative central or regional hierarchy. This, it is felt, has been the key to success.

The execution of the programme: staffing and budgetary aspects

Following resolution WHA18.38 of the Eighteenth World Health Assembly, 1966, Member States concerned with the problem were expected to take the initiative of national smallpox eradication programmes. Many did so; a number of endemic countries, however, did not and wherever spontaneous government initiative was awaited considerable delay occurred at the beginning of the programme. It was only after a direct approach had been made to the governments concerned by the Organization, outlining the nature of the programme, its global character as well as its various requirements and the availability of external assistance, that these countries became involved.

As for WHO, in three out of the four regions where smallpox was endemic, full-time smallpox eradication staff, at regional and country levels, assumed responsibility for assistance to national programmes under WHO headquarters leadership; in these regions cooperation proved most effective. In the fourth region, where such responsibility remained divided among several staff with other functions as well, cooperation was much less satisfactory.

Regarding international field staff assigned to the programme, varying practices were adopted. In two regions, little or no consultation with WHO headquarters took place prior to the recruitment and posting of such staff; in the other two regions WHO headquarters was closely associated with the process. The latter approach was found of definite advantage as the broader range of contacts of WHO headquarters had permitted recruitment of the most capable epidemiologists and also of national personnel who had been actively involved in smallpox eradication at country level and became available when smallpox transmission had been interrupted. Similarly, staff who appeared less effective in a given country setting could be transferred to another with benefit for the programmes and the individuals concerned. The assignment of short-term consultants also greatly contributed to this coordinated approach. Moreover, WHO headquarters staff have spent a considerable proportion of their time in the regions, in support of the country programmes, and the interregional smallpox eradication team, originally intended for special epidemiological studies, the identification of specific operational problems and the independent assessment of individual programmes, was in fact directed to assist country programmes.

Particular attention was given throughout the programme to budgetary requirements. Programme costs were borne, essentially, by the countries concerned, but to varying extents. It was WHO's role to determine the amount of external support needed to bridge the gap between available national resources and what was required for each country programme to attain its objective within the set time limit.

For WHO's own contribution, the Director-General, in 1967, divided the overall budgetary provision approved by the Assembly into headquarters and regional allocations and this was maintained in subsequent years. While the formula initially fairly well reflected the balance of regional needs, it became less satisfactory as the programme proceeded; surpluses were available in some regions while others were experiencing continuing, and sometimes severe, financial constraints. Medium-term budgetary projections based on anticipated needs and expected progress, to be reviewed periodically in the light of actual requirements and of the results achieved, would probably have resulted in more rational apportionment of resources. This latter approach should be retained for application in comparable endeavours in the future. All in all, however, the essential requirements of the programme as a whole have been met, year after year, on an *ad hoc* basis and through the use of budgetary savings or of additional resources under the regular budget or the Voluntary Fund for Health Promotion.

Supply aspects: the provision of vaccine

Most supplies for national programmes are ordered by Member countries in consultation with the regions and processed according to usual WHO practices. For some items, such as bifurcated needles, posters, recognition cards and training aids, bulk purchase is effected by WHO headquarters, which represents considerable economy, and the supplies are sent either direct to the country or through the WHO regional office, whichever appears the most expedient.

Among supplies for the programme as a whole the provision of good quality freeze-dried vaccine, of course, comes first and foremost. The imperative need for 250 million doses of freeze-dried vaccine to be used in the programme was recognized at the outset. Considering the Organization's limited budgetary resources, vaccine had either to be produced locally or supplied through external assistance on a voluntary basis. In view of the fact that vaccine derived from a number of sources and because of the imbalance in supply and demand from region to region, WHO headquarters had to assume responsibility for the distribution of vaccine. Such responsibility devolved upon the Smallpox Eradication unit, acting in liaison with the central supply services. At the regional level, again, the problem was most effectively handled where similar responsiblity was assigned to specialized regional advisers.

With the help of a group of vaccine producers, WHO headquarters developed a production manual which was made widely available. Reference centres for testing were established in Canada (for the Americas) and in the Netherlands (for other regions). WHO regional advisers undertook to encourage regular submission of specimens to these centres from all laboratories contributing vaccine to the programme.

In one region, arrangements were made for one national laboratory to provide a comprehensive and continuing service to laboratories of all countries in the region for vaccine testing as well as for training and consultation purposes. This proved most valuable but remained an isolated instance, no laboratory in other regions being prepared to take on such a spectrum of functions. As an alternative approach, regular visits, every one to two years, by the same consultant, proved quite efficient in most cases. The consultants employed were selected jointly by WHO headquarters and the regional offices.

For vaccine donations, solicited by headquarters, arrangements were made for the testing and shipment of most vaccine to a central stock in Geneva, except for limited amounts of vaccine received from a few distant countries from where direct shipment to projects appeared less costly. WHO regional advisers, in consultation with Member countries, drew up each year projected needs and periodically provided revisions of these. It remained incumbent upon headquarters to find sufficient vaccine to meet these needs. Close contact has been maintained between headquarters and two principal bilateral donors to appraise them of the status of supply and to keep them informed of possible changes in distribution policy. Samples from vaccine supplied bilaterally have been checked periodically by the International Reference Centres with the knowledge of the donors. WHO has distributed each year between 35 and 45 million doses of vaccine. Bilateral contributions have gradually declined from 160 million doses to about 20 million doses. Production in the developing countries has increased to the point where two-thirds of all vaccine now used is produced locally.

Research

As with all other aspects of the programme, research needs and proposals have been regularly reviewed and discussed by headquarters staff with the regional advisers at their annual meetings. Most research projects have been entrusted to virus laboratories in various countries. Some research projects, however, have been conducted by regional and intercountry advisers (e.g., field studies on the use of the bifurcated needle, development of techniques in sampling for assessment) and by WHO advisers and national programme staff (e.g., monkeypox investigations in Africa, epidemiological patterns of smallpox). Research projects have also been based in two laboratories in endemic areas where laboratory staff work closely with national staff and WHO advisers. Results obtained in the research projects have been made regularly available in technical papers distributed to field staff. Research, in brief, has been regarded in the same manner as the rest of the programme, the work being done wherever most suitable by those felt to be best equipped for the job. More could have been done at country level had the services of the interregional team been available.

Relationship with other programmes

As a basic principle, smallpox eradication programmes have been encouraged to interrelate closely with other health programmes. In all countries, considerable efforts have been made to develop the morbidity reporting network on the basis of existing health units. Improved reporting of diseases other than smallpox has almost invariably followed. Existing health units have been encouraged by repeated visits of field teams to undertake vaccination to the maximum extent possible and, in some areas, smallpox staff have assisted in the supply and distribution of vaccine. Health staff have similarly been encouraged to participate in containment activities, in the course of which considerable formal and practical training has been conducted. In perhaps half the programmes, smallpox staff have been and are now administering BCG vaccine as well as other vaccines, especially in those countries in the maintenance phase, where the pressure of smallpox eradication work proper is somewhat less. The number of such vaccinations so far given is now well in excess of 50 million.

Unfortunately, time has not permitted WHO smallpox staff to undertake the necessary training activities dealing more broadly with surveillance and with the development of comprehensive immunization programmes, nor has time allowed adequate assistance to be given to countries, as they have so often requested, in the desired transition from smallpox programmes to broader communicable disease control through surveillance and immunization.