WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ

EB51/WP/7

17 January 1973

INDEXED

EXECUTIVE BOARD

Fifty-first Session

Agenda item 3.4

REVIEW OF THE PROPOSED PROGRAMME AND BUDGET ESTIMATES FOR 1974

SMALLPOX ERADICATION PROGRAMME

The status of the smallpox eradication programme as of 10 January 1973 is shown in the summary report published on 12 January 1973 in the Weekly Epidemiological Record (attached).[1]

During 1972, smallpox incidence increased for the second successive year. About 65 000 cases are expected to have been recorded when all reports are received. This is 23% more cases than in 1971 and 95% more than were reported in 1970, the lowest year on record. The increase is attributed primarily to better surveillance programmes which, in 1972, for the first time extended into all endemic areas. The discovery of many additional cases which would previously have been unreported has permitted additional outbreaks to be contained before spreading further. The anticipated effect of these efforts is now becoming evident as smallpox incidence during the last four months of the year actually declined by 22% over that observed the year before.

While surveillance programmes in many areas are not yet sufficiently developed to permit the interruption of transmission, progress in the development of surveillance activities has been notable in most parts of the world. The objective now is to accelerate the reduction in smallpox incidence by a specially intensified and coordinated surveillance effort. In seminars held in Addis Ababa (September), New Delhi (October) and Karachi (November), this strategy was discussed and elaborated with smallpox staff from all the endemic countries; additional staff to provide technical assistance have been assigned in a number of endemic areas.

The present status and progress of the programme in most endemic regions is encouraging. In the Americas, no cases of smallpox have been discovered during a period of 20 months of active search. In Africa during the past year, only seven countries have reported cases, in four of which, cases followed importations from endemic areas. These outbreaks have all been thoroughly investigated and properly contained. In the three African countries which were endemic at the beginning of the year (Botswana, Ethiopia and Sudan), excellent progress has been made. In Botswana, no cases have now been detected since October and there is cause to believe that transmission has been interrupted. In Sudan, endemic foci now appear to be limited in extent and confined to two southern provinces. An intensified programme is in progress and the interruption of transmission is foreseen within the next few months. In Ethiopia, smallpox incidence has declined sharply since March and, at present, eight of the 14 provinces appear to be virtually smallpox-free.

---

[1] Weekly Epidemiological Record, No. 2, 12 January 1973

In Asia, programmes in Afghanistan, Indonesia and Nepal are progressing well. In Indonesia, no cases have been detected for almost 12 months and all cases in Afghanistan since February and in Nepal since June have been traced to known importations from endemic areas of Pakistan and India, respectively. In Bangladesh, India and Pakistan, eradication programmes have been intensified during the past year but much remains to be done. Epidemics in Bangladesh which developed with the return of refugees from India have been confined to the western and south-western districts of the country but large numbers of cases are still occurring despite concerted efforts by the health staff, assistance from WHO and a substantial mobilization of resources. In Pakistan, two of the four provinces appear now to have virtually interrupted transmission, but in Sind Province comparatively little has been done until recent months and major epidemics are present throughout most of the Province resulting in frequent introductions into smallpox-free areas. In India, transmission has been essentially interrupted in the southern states and in several western states. Major outbreaks, however, are occurring in five northern states; surveillance activities in most of these states are not yet well-coordinated at state level, and steps to improve the reporting network, still the weakest link in the programme, have only recently been taken. While it is in these three countries that the future of the eradication effort is most uncertain, it should also be noted that in comparison with most other countries which have been endemic for smallpox during the past six years, the resources to conduct a successful programme are far more abundant. The basic health services in these countries are better developed, many more and better trained staff are employed in the programme, better transportation and communication services are available and the populations are generally more receptive to vaccination. With adequate supervision and a firm commitment to accomplish the task, the interruption of transmission could occur more rapidly in these than in other areas.

During the past six years, considerable research has been conducted by WHO and its collaborating laboratories in regard to those poxviruses which are closely related to variola virus in order to test further the hypothesis that there is no animal reservoir of variola virus which could serve to threaten the programme. Most persuasive is the evidence that all outbreaks of smallpox which have occurred in smallpox-free areas of Asia, Africa and South America have been able to be traced to a specific importation from known endemic areas. However, 13 cases of a disease clinically resembling smallpox have been identified in widely scattered areas of Africa. Virus strains isolated from these cases have uniformly been characterized as monkeypox virus, a virus which in the laboratory is related to but which has distinctively different characteristics than variola virus. In no instance has the disease been transmitted from man to man despite close household contact between the patient and unvaccinated susceptibles. While the reservoir of this virus is still uncertain, the illness in man appears to be a chance infection with limited or no capacity to be transmitted from person to person. Studies are continuing.

As this advanced phase of the programme proceeds, three subject areas deserve particular emphasis: (1) immediate notification and complete international coordination in the event of an introduction of smallpox; (2) maintenance of surveillance and appropriate vaccination programmes as well as international support to the programme by countries throughout the world; and (3) implementation of special programmes and techniques to assure that transmission has been interrupted in areas where the reporting network records no cases.

With the continuing decrease in the number of countries with smallpox, each case in a country presumed to be non-endemic assumes increasing importance to the global programme as a whole. The source of infection and pattern of spread need to be carefully investigated by experienced epidemiologists to assure that the outbreak has resulted from an introduction from a known endemic area and not from unknown residual foci; prompt and effective containment measures need to be applied to prevent re-establishment of infection. Without such measures, the success of the global programme as a whole is jeopardized. To facilitate the necessary international coordination of effort, the Organization is prepared to provide immediately on request, smallpox experts as well as vaccine and bifurcated needles.

In all countries, especially those in endemic regions, surveillance activities under close direction and supervision at a national level will need to be actively maintained for many years to come; continuing vaccination programmes, especially in the developing countries, will be necessary to sustain immunity. A premature relaxation of efforts when smallpox transmission appears to be interrupted or is nearing this point could readily result in spread of disease from unrecognized foci or the re-importation of disease into smallpox-free areas and the re-establishment of endemic foci. It is far less costly and much easier to deal with small foci which may occur following importation of the disease than to re-institute a full-scale eradication programme which may be necessary if an outbreak is not dealt with early and expeditiously. Continuing support to the programme both nationally and internationally is thus especially important during the next few years, particularly in the form of donations of acceptable quality freeze-dried vaccine.

Lastly, a problem of increasing significance has been to determine that transmission has been interrupted in areas or countries where the routine surveillance programmes detect no cases. It has been increasingly apparent that even when reasonable cooperation in reporting is obtained from existing health facilities and civil authorities, unreported foci may persist. To discover these requires an active search for cases by specially trained surveillance teams for which budgetary and other provisions should be made. Experience has shown that teams using the "WHO Smallpox Recognition Card" can reasonably accurately assess the situation over a wide area through query of personnel at the existing health facilities, all school children in the area and enquiry in the major markets. While the number of teams required in a country or province depends on the terrain and density of population, the number need not be large. They must, however, be well trained and supervised and should continue their activities for at least two years after an endemic area has become free of smallpox.

In many countries which have become free of smallpox, the programme itself has been broadened in scope to include administration of other antigens and surveillance of other diseases of national importance. Such an approach is logical in the scheme of development of the health services and serves to strengthen the structure necessary for a country to maintain a smallpox-free status.

The eradication programme is now fully operative in all endemic countries; surveillance activities are steadily improving and smallpox incidence again appears to be declining. With sustained national and international support, it seems reasonable to anticipate that eradication could be achieved within the next two years.