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TWENTY-FIFTH WORLD HEALTH ASSEMBLY

Provisional agenda item 2.5

SMALLPOX ERADICATION

Report of the Director-General

1. As requested by the Twenty-fourth World Health Assembly, the Director-General has the honour to present the following report regarding the programme of smallpox eradication.

2. The current status of the programme as of 2 May 1972 is summarized in the Weekly Epidemiological Record[1] published on 5 May (attached).

Following a decline in smallpox incidence from 131 000 cases (1967) to 33 000 cases (1970) during the first three years of the eradication programme, the number of cases rose to 52 000 in 1971 and more cases have been reported so far this year than in the comparable period in 1971. The increase in reported cases in 1971 is accounted for by far more complete notification in Ethiopia which in the first year of a rapidly developing programme recorded 25 976 cases compared to only 722 cases during the year before. In 1972, however, increased numbers of cases are being reported by six of the seven known endemic countries. Better surveillance and more complete notifications of cases of smallpox are believed to account for much of this increase.

From 1967 through 1971, the number of countries experiencing cases of smallpox also declined, from 42 in 1967 to only 16 in 1971. This year, however, cases have already been reported by 18 countries as smallpox has been introduced into 10 countries otherwise considered to be smallpox-free. Included are introductions into Yugoslavia and the Federal Republic of Germany, the first smallpox importations into Europe in two years. In seven of the countries, including those in Europe, the outbreaks have been effectively contained; in one, Bangladesh, extensive outbreaks have occurred and although intensive emergency measures are being taken to contain the spread, effective control has not yet been achieved. From the remaining two countries, Iran and Iraq, little information is yet available regarding the source of infection, pattern of spread or the nature of containment activities which have been undertaken. Both countries, employing vaccine and bifurcated needles provided by WHO, are conducting mass vaccination programmes.

The large number of introductions of smallpox this year clearly demonstrates that the disease is far from being under satisfactory control, let alone nearing the point of eradication. Much remains to be done in the endemic countries and in those which are smallpox-free, greater vigilance must be exercised to prevent the reimportation of smallpox and its re-establishment as an endemic disease.

On the positive side, several large countries which were endemic for smallpox only a year ago, now appear to have interrupted transmission. No cases have been detected in Brazil or elsewhere in South America for more than a year. An active search for unknown endemic foci is, however, continuing. The last known cases occurred in Zaïre over eight months ago and in Indonesia, more than four months have passed during which no cases have been found. Both countries are continuing their active surveillance programmes in a search for cases.

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[1] Weekly Epidemiological Record, 1972, 47, 18.

In Africa, only three countries are known to be endemic at this time - Botswana, Ethiopia and Sudan. In Botswana, after four years without detected cases, smallpox reappeared in January 1971. Cases have continued to occur until the present. Recently, special measures have been taken to strengthen surveillance and reporting and a national systematic vaccination programme will soon begin. In Ethiopia, an effective eradication programme which began in January 1971, in four provinces, has been extended throughout the country. During 1971, 26 000 cases were identified and over 9000 cases thus far in 1972. Over four million persons have been vaccinated. Ethiopian authorities expect to interrupt transmission in eight of the 14 provinces by the end of 1972. In Sudan, over 80 per cent. of the cases are now occurring in the southern provinces with most outbreaks elsewhere being traced to introductions from these provinces or Ethiopia. This year, surveillance activities have been materially strengthened throughout the country and vaccination activities are being intensified in the southern provinces.

In Asia, the principal endemic countries of India, Pakistan and Nepal have all recorded an increase in cases this year coincident with the development of improved surveillance programmes. Further improvements, however, are yet required in all three before the interruption of transmission can be expected. A significant setback to the programme was the reintroduction and extensive spread of smallpox in Bangladesh after 16 months during which no cases could be found. National health staff, WHO and other international agencies are working intensively to bring the outbreaks under control. Lastly, Afghanistan, in the fourth year of a well-executed programme, has recorded an 80 per cent. decrease in incidence and foresees the interruption of transmission within a few months.

Two problems of practical concern have become increasingly apparent, the first of which pertains to the occurrence of smallpox in non-endemic countries. 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 must be carefully investigated by experienced epidemiologists to assure that the outbreak has resulted from introduction from known endemic areas and not from unknown residual foci; prompt and effective containment measures must be applied to prevent re-establishment of infection. Without such measures, the success of the global programme as a whole is jeopardized.

A second problem of increasing significance has been that of determining that transmission has been interrupted in areas or countries where the routine surveillance programmes are detecting no cases. Several studies in Asia and South America were conducted during 1971 in which a newly developed "Smallpox Recognition Card" was employed. Schoolchildren, health and civil authorities throughout suspect or remote areas were shown the card and queried about possible smallpox cases which were then investigated. Further experience with this technique is required but, to date, this approach has proved highly effective in facilitating the search for unknown foci over extensive areas with limited numbers of personnel.

Eradication programmes are now operative in all endemic countries and the Organization is providing substantial support in terms of technical aid and consultants, supplies and equipment, teaching materials, courses and seminars. Substantial international assistance is also being provided on a bilateral basis by the USSR and the United States of America and 32 countries have made special contributions to the WHO Special Account for Smallpox Eradication. In the first quarter of 1972, more than 19 million doses of vaccine have been distributed from this account, a quantity greater than that distributed in any other three-month period since the inception of the intensified programme. Thus, continuing and, in fact, increased contributions will be required as efforts are made to intensify the programmes in the difficult remaining endemic areas.

Future activities

An Expert Committee on Smallpox Eradication met in Geneva from 22 to 30 November 1971. The Committee reviewed in detail the status of the programme and advised in regard to the strategy and methodology to be employed during the coming years. The Committee cautioned that although most cases of smallpox were then being reported by four countries, the persistence of transmission in these areas, while most of the world has become smallpox-free, necessarily implies special problems. It pointed out that an effort equivalent to that of the past five years may be required to interrupt transmission in these areas. The Committee concluded, however, that with such a special commitment, there is every reason to believe that the goal of global eradication could be achieved within a period of a few years.

A number of recommendations were made regarding future activities:

1. There is a need to strengthen reporting everywhere and to assure that every suspected case is investigated promptly, its source of infection traced and containment measures promptly instituted.

2. Because of the global nature of the eradication programme, all cases which occur in non-endemic countries are of international concern and should appropriately be investigated and contained by national staff assisted by experienced WHO smallpox staff, so as to facilitate tracing of sources of infection between countries and to assure, to the extent possible, that transmission does not become re-established in smallpox-free areas.

3. Countries sharing common borders with endemic areas should maintain special surveillance programmes which incorporate an active search for possible outbreaks as well as continuing intensive vaccination programmes.

4. Special programmes to uncover possible residual foci of smallpox should be conducted, particularly in recently endemic countries.

5. Except for a few countries at low risk and with highly developed health services and surveillance, routine vaccination programmes should be continued throughout the world.

6. Continuing research in a number of areas was considered vital. Although there is no evidence at present that there is a mammalian reservoir of smallpox other than man, further studies in the field and in the laboratory should be pursued. Other areas considered to be important for study include the development of simplified and improved methods for laboratory diagnosis; elucidation of the mechanisms of immunity in pox virus infections; and the development of improved methods for applying smallpox vaccine in association with other vaccines.

7. As countries become free of smallpox the programme itself might appropriately be broadened in scope to include administration of other antigens and surveillance of other diseases of national importance. It was noted that such an approach would be both logical in the scheme of development of health services and would serve to strengthen the structure necessary for a country to maintain a smallpox-free status.