

no.

Successive  
Smallpox  
SME/MTP/83.1  
Prevention - PTC  
Laboratory infection - PTC  
KMA-P...-ATP



WORLD HEALTH ORGANIZATION  
ORGANISATION MONDIALE DE LA SANTÉ

SEVENTH GENERAL PROGRAMME OF WORK  
COVERING THE PERIOD 1984-1989

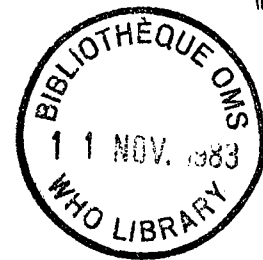
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Global Medium-Term Programme

Programme 13.1

SMALLPOX ERADICATION SURVEILLANCE



In accordance with resolution WHA33.4 on 'Global Smallpox Eradication', the smallpox post eradication surveillance programme will continue with emphasis being placed on the investigation of suspected cases of smallpox, control of variola virus in laboratories, maintenance of the WHO smallpox vaccine reserve and surveillance and research on human monkeypox and other orthopoxvirus infections.

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## 1. INTRODUCTION AND POLICY BASIS

The post smallpox eradication surveillance policy has been established in accordance with the World Health Assembly's resolution WHA33.4<sup>1</sup> which declared in 1980 the eradication of smallpox and endorsed the recommendations of the Global Commission for the Certification of Smallpox Eradication. The purpose of these recommendations is to maintain the status of smallpox eradication through adequate and effective surveillance.

To date, all these recommendations have been satisfactorily implemented by Member States and the WHO Secretariat and it was established that a) routine vaccination programmes have been abandoned throughout the world except for in a few countries; b) continuing surveillance has not discovered any smallpox cases and c) surveillance and research on poxvirus infections indicates that the recently recognized monkeypox problem requires intensive surveillance to analyse whether or not monkeypox poses a threat to the achievement of smallpox eradication.

## 2. SITUATION ANALYSIS

### 2.1 Vaccination policy (recommendations 1 and 2)

As of 1 September 1983, all countries (161 WHO member states and 1 associate member) except for 2 (Albania and France<sup>2</sup>) have officially discontinued routine vaccination. No country in the world requires a vaccination certificate from international travellers.

### 2.2 Reserve stocks of vaccine (recommendations 3, 4, 5 and 6)

A quantity of vaccine sufficient to vaccinate 200 million persons, in case of an unexpected emergency, is being kept in Geneva and New Delhi, using an effective monitoring system of its potency. Seed lots of vaccinia-virus are safely kept in laboratories in Atlanta, Paris, Tokyo and Utrecht. National laboratories still keep about 100 million doses of vaccine.

### 2.3 Investigation of suspected smallpox cases (recommendations 7 and 8)

All smallpox rumours, 31 in 1980, 30 in 1981, 10 in 1982, and 14 up to 1 September 1983, have been satisfactorily investigated by WHO and/or Governments. They have all been negative for smallpox, thus building up public confidence that the eradication of smallpox is permanent.

### 2.4 Laboratories retaining variola virus stocks (recommendations 9 and 10)

Only 3 laboratories are keeping variola virus stocks in high security laboratories, one in Atlanta (USA), one in Moscow (USSR) and one in Sandringham (South Africa). The first two are WHO Collaborating Centres but the third is not and has no justification to retain the virus and negotiations are in progress for the destruction or transfer of the virus. The laboratories are inspected periodically by WHO.

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<sup>1</sup> WHA33/1980/REC/1

<sup>2</sup> As of 1 September 1983, WHO has been informed that France is preparing to discontinue their revaccination programmes having already discontinued primary vaccination programmes

## 2.5 Human monkeypox (recommendation 11)

Continuing surveillance has discovered an unusually high incidence of 34 cases of human monkeypox in 1982 and 27 cases in 1983 (up to 1 September 1983). All cases occurred in Zaire. One third of these cases were caused by person-to-person transmission including cases of tertiary transmission. The transmission rate among household contacts without vaccination scar was estimated to be 15%. These epidemiological findings have been observed in areas where the smallpox vaccination level is still as high as 70%.

This vaccination level has not changed during the last five years. Such a high level will, however, rapidly decline due to discontinuation of routine smallpox vaccination and the resulting accumulation of susceptibles might cause an increased incidence of this disease.

A serological survey was conducted in West and Central Africa in 1982 and it revealed that a number of unvaccinated children had specific monkeypox antibodies in three of the four countries where the survey was carried out, namely Ivory Coast, Sierra Leone and Zaire. In these countries, human monkeypox cases have occurred in the past and this serological survey suggests that unreported cases have been occurring in these areas. In summary, monkeypox infection is a zoonosis and our previous experience has been that the disease does not sustain itself in human populations, hence it is not a public health problem. However, the findings in 1982 and 1983 have warned us of the need to keep a close watch on the monkeypox problem.

The Committee on Orthopoxvirus Infections met in Geneva from 15-17 March 1983 and recommended that "... the monkeypox situation will continue to be thoroughly assessed in 1984 and 1985", that "... provision should be made by WHO to continue to support surveillance on the same scale as at present, at least until the end of 1987" and that "...provision for laboratory support would also be required through this period".

## 2.6 Laboratory investigations (recommendations 12, 13, 14 and 15)

Progress has been made in pending research as follows: DNA maps to identify variola, monkeypox and other orthopoxviruses and fragmental DNA of variola cloned in suitable vectors are available; preparation of monoclonal antibody for monkeypox is underway.

## 2.7 Documentation of the Smallpox Eradication Programme (recommendations 16 and 17)

A book of about 1 000 pages, entitled "Smallpox and its eradication" is under preparation and is half way towards completion. The book is scheduled to be published by WHO towards the end of 1985.

## 2.8 WHO Headquarters staff (recommendations 18 and 19)

An inter-regional team is maintained as recommended in resolution WHA 33.4 and a Committee on Orthopoxvirus Infections meets regularly.

## 3. OBJECTIVES

To prevent and control major communicable and noncommunicable diseases; specifically to maintain the status of smallpox eradication.

## 4. TARGETS

Maintenance of smallpox eradication through continuing surveillance, universal discontinuation of smallpox vaccination in 1984, evaluation of the entire progress in 1985 and periodical assessment of the monkeypox problem.

## 5. APPROACHES

Maintenance of smallpox eradication will be achieved by implementing the 19 recommendations for the post-smallpox eradication policy formulated by the Global Commission for the Certification of Smallpox Eradication and endorsed by the Thirty-third World Health Assembly.

To ascertain that smallpox has effectively ceased to exist as a disease, WHO will continue the investigation of suspected cases of smallpox as well as the control of variola virus stocks in laboratories. It will ensure that reserve stocks of good quality vaccine are maintained.

Universal discontinuation of smallpox vaccination will be maintained, except for investigators at risk. Research on, and surveillance of, human monkeypox and other orthopoxvirus infections will be continued.

A monograph on smallpox and its eradication will be published to preserve the unique historical experience of eradication and thereby contribute to the development of other health programmes.

## 6. ACTIVITIES

The post-smallpox eradication activities could have been reduced to a minimum beyond 1986, involving only investigation of smallpox rumours, maintaining quality of vaccine stocks and inspection of laboratories retaining variola virus. However, the unexpected recent increase in incidence of human monkeypox as well as of person-to-person transmission of that disease in Zaire necessitates an extension of human monkeypox surveillance supported by laboratory investigation beyond 1985. Hence, the intensified surveillance and research should continue to identify the problems bearing in mind that a substantial number of susceptibles will increase in the future.

Accordingly, the nine main activities to be carried out are listed in the following table.

Activities	1984 - 1985	1986 - 1987	1988 - 1989	Linkages <sup>1</sup>
(a) Universal discontinuation of smallpox vaccination	<u>HQ, All Regional Offices, countries</u>			HST/LEG
(b) Maintenance of WHO emergency smallpox vaccine reserve and monitoring of its potency		<u>HQ, SEARO</u>		BLG
(c) Investigation of suspected cases of smallpox		<u>HQ, All Regional Offices, countries</u>		VIR
(d) Inspection of laboratories retaining variola virus	<u>USA/USSR/South Africa HQ, AFRO, AMRO EURO</u>		<u>USA/USSR HQ, AMRO, EURO</u>	SMM
(e) Special surveillance of human monkeypox Epidemiological investigation and data analysis of monkeypox infection		<u>Countries in West and Central Africa, HQ, AFRO, EMRO</u>		VPH
- Support to and maintenance of special surveillance teams and health institution based surveillance in Zaire		<u>HQ, AFRO, Zaire</u>		VPH
- Laboratory support to investigate monkeypox specimens		<u>HQ</u>		LAB/SMM
- Training on monkeypox surveillance in West and Central Africa (combined with viral haemorrhagic fever surveillance)		<u>Countries, HQ AFRO, EMRO, WPRO</u>		VIR/SMM
(f) Maintenance of WHO Collaborating Centres for Smallpox and relevant poxvirus infections		<u>HQ</u>		VPH
(g) Research on DNA of orthopoxviruses and developing of laboratory technology to identify monkeypox and relevant poxvirus antibody or antigen		<u>HQ</u>		IMM
(h) Meeting of Committee on Orthopoxvirus Infections	<u>HQ, AFRO, EMRO</u>	<u>HQ, AFRO EMRO</u>	<u>HQ, AFRO EMRO</u>	VIR/SMM/IMM
(i) Publication of WHO Monograph "Smallpox and its eradication"	<u>HQ</u>			PUB

<sup>1</sup> When joint activities are undertaken costs will be covered by SME

#### 7. PROGRAMME MANAGEMENT AND RESOURCES

The programme will be implemented as inter-regional activities being coordinated by HQ. The main geographical areas or institutions involved in these programme activities are all countries where suspected smallpox cases might be reported, the countries in West and Central Africa where special surveys and/or surveillance on human monkeypox cases are continuing and institutions where research on orthopoxvirus infections continue. The Regular Budget and extra-budgetary resources of an amount similar to that provided under the Regular Budget will cover the programme costs.

#### 8. MONITORING, EVALUATION AND INDICATORS

The results of the programme activities will be assessed in general by the Executive Board as well as the World Health Assembly and more specifically by the Committee on Orthopoxvirus Infections, the members of which were designated by the Director-General. Basic indicators include the nil incidence of smallpox, number of smallpox rumours, incidence of human monkeypox cases, number of laboratories retaining variola viruses, titres of vaccine in reserve, etc. The quality of individual activities producing these indicators will also be evaluated.

#### 9. LINKAGES

Please refer to Table under 6. Activities

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