

Preliminary notes on epidemiological surveillance in
smallpox eradication programme in endemic countries

Notes have been prepared to provide an outline on epidemiological surveillance activities in the smallpox eradication programme and also as to how it should be developed and implemented under field conditions in endemic countries. The outline presented in these notes is a preliminary one and subject to constant review and improvement in accordance with experience gained during the eradication programme. Details of surveillance activities will be prepared in the near future.

1. Purpose

Epidemiological surveillance is one of the important components of the smallpox eradication programme. The surveillance activities serve to achieve the smallpox eradication in terms of:-

- (i) obtaining information on the overall picture of smallpox in the areas concerned through collection of data on incidence and follow-up of all conditions which may contribute to the spreading of the disease;
- (ii) evaluating the progress of the eradication programme and effectiveness of attack phase using the data mentioned in (i);
- (iii) accelerating interruption of smallpox transmission by undertaking immediate containment measures against a case or outbreaks in endemic areas;
- (iv) preventing reintroduction of endemicity by undertaking immediate control measures against imported cases in the areas where smallpox endemic foci have been eliminated;
- (v) strengthening epidemiological surveillance in general in the framework of basic health services.

SE/56.3

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2. Co-ordination and dissemination of information

In terms of epidemiological characteristics of smallpox and movement of population between countries, the surveillance activities will not be complete unless they are co-ordinated between the countries and further, at inter-Regional level. The Regional Offices will play a decisive role by assuring regular and rapid dissemination of information to individual countries in the Region. Any other Region concerned will be kept informed through Headquarters.

3. Activities

- 3.1. To establish an effective surveillance system in the endemic countries, a great deal of thought and imagination are required, since such a system has not yet been developed in endemic countries. Also it should be noted that the basic health services which should form the basis of these activities are rudimentary in many areas in endemic countries. This implies that the establishment of a system should be developed step-by-step depending upon the phasing of the eradication programme and epidemiological pattern of smallpox in the given areas or countries. However, it should be emphasized that even where the structure of basic health services is not adequately developed, some basic surveillance activities must be provided for which will have to be carried out initially by smallpox eradication personnel.
- 3.2. It is extremely important that the significance of surveillance is well understood by the national supervisory staff, and constant stimulus and guidance should be provided from the central level of the national health administration to the personnel who are concerned with these important activities throughout the country.

- 3.3. An adequate surveillance organization should be set up with efficient machinery at all levels - central, intermediate and peripheral - to pursue this task. It is extremely important to assign one medical officer, at central level (not always full-time), who will be responsible for the development of all surveillance activities.
- 3.4. In the process of creating surveillance organization the following activities should be envisaged:
 - 3.4.1. The surveillance activities should start with the development of a data-collecting system, including case detection and reporting system at all levels - peripheral, intermediate and central. At an early stage of the eradication programme, it would not be possible to establish such a system on a full scale. However, an effort should be made to develop a very simple system based on the existing resources. This system will include utilization of established medical facilities, schools, army camps, etc., and also use of vaccination team or assessment team and other field teams for some specialized health project in the field. Speed of communication in making this information available is of vital importance. Consideration should be given from the first instance of the programme to ensure that the data-collecting system is well planned and developed in order to observe the smallpox pattern, once the areas have been covered by the vaccination programme. Special attention must be given to nomads, frontier areas, as well as to regions or districts in which, due to agricultural development, new industrial enterprise or any other socio-economic factors, marked movements of population are taking place.

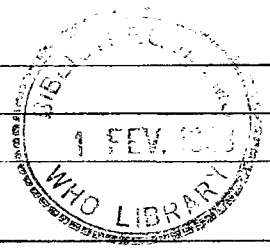
3.4.2. The data collected should be properly dealt with by mapping, graphing and necessary statistical tabulation at supervisory level. Also, the data should be summarized and distributed periodically to the personnel or institutions throughout the country dealing with the development of surveillance activities. The responsible unit or officer, at supervisory level, should follow up the fate of smallpox endemicity with these data analysis and decisions should be made, whenever necessary, to undertake immediate action against smallpox outbreaks and also for the investigation of unusual features of smallpox. For this purpose it is necessary to assign one responsible officer (not necessarily always with medical qualifications) for this task at intermediate level.

3.4.3. At the later stage of the campaign, confirmation of suspected smallpox cases will become one of the most important tasks. For this purpose provision for laboratory diagnosis should be made.

4. Implication of planning and budgeting

In planning for the development of surveillance activities, at the preparatory phase of the eradication programme, budgetary provision should be made to cover requirements such as training, additional cost for surveillance staff - especially at intermediate level (see 3.4.2.) and the development of laboratory services which should be considered on a long-term basis. Possibility of utilization of assistance from World Food Programme and, in some cases, Red Cross should be taken into account, especially to stimulate the interest of personnel who are concerned with the activities.

FREEZE-DRIED SMALLPOX VACCINE PRODUCTION
IN INDIVIDUAL LABORATORIES



1. LABORATORY PRODUCING FREEZE-DRIED SMALLPOX VACCINE

- 1.1. Name of Laboratory _____
- 1.2. Address _____
- 1.3. Name of Director _____
- 1.4. Name of person directly responsible for production _____

2. EQUIPMENT FOR PRODUCTION

- 2.1. Freeze-drier Make and Model Designation Quantity

- 2.2. Type of container of final product :
 Ampoule hermetically sealed Vials with rubber stopper Other
 If other, please specify _____

3. PRODUCTION

- 3.1. Strain of virus for seed lot Type and brief history of origin

- 3.2. Vaccine produced :
 in the skin of living animals Specify kind of animal _____
 in the chick embryo
 in tissue culture Specify the kind of tissue culture _____
- 3.3. Number of doses in each final container*: 10 20 25 50 100 Other _____

4. RESULTS OF TESTING ON THE LAST THREE

SUCCESSIVE FILLING LOTS (FINAL LOTS) OF VACCINE**	<u>Potency (PFU)</u>		<u>Bacterial counts/ml</u>
	<u>at 4°C</u>	<u>at 37°C</u>	
	<u>after 4 weeks</u>		
Filling Lot No.	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

If any problems related to WHO requirements, please specify _____

- 5. DOSES OF VACCINE PRODUCED IN 1966 : _____ doses. No. of filling lots _____
- 6. POTENTIAL PRODUCTION CAPACITY UNDER PRESENT CONDITIONS : _____ doses annually
- 7. REMARKS _____

* Please attach 3 samples of each package with diluent.

** Tests noted are detailed in WHO Technical Report Series No. 323, Smallpox Vaccine, Part A, 3.3.4; 3.3.5; 5.2.1; 5.5.