

ESSENTIALS OF HEALTH LEGISLATION

	<u>Page</u>
1. Introduction	IX-2
2. Compulsory vaccination and revaccination	IX-2
2.1 Enforceable compulsory vaccination	IX-3
2.2 Vaccination under epidemic circumstances	IX-4
2.3 Contraindications	IX-4
2.4 Objection to vaccination	IX-5
3. Prohibition of variolation and arm-to-arm vaccination .	IX-5
4. Isolation procedures at the time of an outbreak	IX-6
5. Reporting of cases	IX-6
6. International Sanitary Regulations	IX-6

HEALTH LEGISLATION

1. Introduction

Health legislation with respect to smallpox vaccination, outbreak control and reporting procedures should be reviewed in each of the endemic countries to determine its current effectiveness and applicability.

Although eradication cannot be achieved by legislation alone, enforceable legislation strictly applied by the health authority and coupled with a health education effort can exert a decisive influence in speeding the eradication effort.

Virtually every country has enacted legal requirements with respect to smallpox, the earliest of these dating back to the early 19th century. In each country, the legislation is different depending upon the legal structure within the country, the particular needs and authorities and the recency of revision of these statutes. No "model" legislation exists as such.

In light of present experience and knowledge regarding the behaviour of smallpox, there are several areas in which legislation in the endemic countries may be helpful in facilitating the eradication process:

- (a) compulsory vaccination and revaccination;
- (b) prohibition of variolation and arm-to-arm vaccination;
- (c) isolation procedures at the time of an outbreak;
- (d) reporting of cases;
- (e) adherence to provisions of the International Sanitary Regulations.

The following sections describe the general principles and relative applicability of the different provisions which might be made. Current legislation in each of the endemic countries should be reviewed with respect to these several points.

2. Compulsory vaccination and revaccination

It has been wisely observed that if the compulsory vaccination requirements in every country were, in fact, observed, there would be no smallpox. Most of the endemic countries today have very explicit laws requiring routine vaccination of individuals and immediate vaccination or revaccination under specific circumstances. There are, however, few mechanisms for ensuring compliance with these laws. Particular attention should, therefore, be directed toward the question of enforcement of legislation pertaining to vaccination.

2.1 Enforceable compulsory vaccination

Compulsory laws dealing with vaccination and revaccination can be meaningful if they are related to some simple scheme for routine enforcement.

Compulsory registration of all births is being fostered in many of the endemic countries. Such a registry, listing all newborns in the community, might be reviewed and checked by vaccinators to ensure that all in this vulnerable group had been vaccinated. However, checking of newborns in this manner has frequently proved to be a costly, difficult and time consuming procedure.

Some problems may be overcome by altering current legislation to take cognizance of recent findings that vaccination can be performed with safety and efficacy from the time of birth. (See Section III, Technical Considerations.) Thus, vaccinators in mass programmes or house-to-house programmes would be directed to vaccinate individuals of all ages; children born at maternity centres or whose birth was attended by midwives could be vaccinated at the time of birth or shortly thereafter. Provision of vaccination from the time of birth does not in any sense guarantee adequate coverage of the particularly susceptible group, but it should decrease the proportion of individuals likely to be missed.

Specific requirements which could be reasonably easily enforced are noted below:

- (a) a requirement that all entering schoolchildren be vaccinated prior to or at the time of school entry and revaccinated at appropriate intervals (for instances at three- or five-year intervals);
- (b) a requirement that all government employees (medical and auxiliary medical staff, army, police, immigration, customs) and employees in all or certain industries, plantations, etc. be vaccinated and revaccinated at regular intervals;
- (c) a requirement that all who are issued with government identification cards, birth certificates, work permits, etc., be vaccinated at the time of issuance of such cards.

If such compulsory vaccination laws are to be effective, adequate provision should be made to provide vaccination to these groups in some simple manner. Thus, provision might be made for vaccination in the school itself of children in particular grades immediately after school opening; for vaccination at the place of work of all workers in particular industries at regular intervals; for vaccination of persons receiving identity cards, etc. at the site where such cards are issued.

Laws such as these and the decisions on the part of educational officials, for example, to refuse admission to unvaccinated children have been upheld by the Courts when tested. One judgement in the United States in 1952 is cited in the review of legislation pertaining to smallpox vaccination:

In the light of testimony so overwhelming and statistical information so convincing of the protective value of vaccination against this once prevalent disease, the court must hold that the respondents are wholly within the exercise of a sound discretion in adhering to their rule requiring vaccination of children in their school system.

Whether vaccination cards or certificates are desirable as part of the enforcement procedures is a debatable point. Forgery, particularly in some countries, is common. Use of vaccination certificates under such circumstances may actually be self-defeating and the result of a vaccination certificate scheme may be a lower overall level of immunity. If a scheme employing vaccination certificates is to be used, penalties for forgery should be severe and rigorously enforced. If official vaccination certificates are difficult or inconvenient to obtain, forgery will be encouraged. In one endemic country, for example, all employed persons of certain categories are required to present a certificate as a condition of employment. Facilities for issuing such certificates are meagre, geographically remote and open for only a few hours each day. Processing is slow requiring individuals to wait for several hours. Such a system makes it more worth-while for the individual to pay for a forged certificate than to be vaccinated and obtain a valid certificate. In some countries a recording of vaccinations may be applicable.

2.2 Vaccination under epidemic circumstances

Provision should be made for compulsory vaccination and/or revaccination of all within a community if the responsible health authority considers the community to be threatened by an outbreak of smallpox. In general, it has been found most practicable to depend on persuasion and motivation of the population to seek and to accept vaccination. It is valuable, however, to have such legal authority should it be required for vaccination of particular individuals or groups.

2.3 Contraindications

Contraindications of a medical nature usually constitute cause for exemption from vaccination although, as noted under Section III, Technical Considerations, absolute contraindications to vaccination in the endemic countries are few indeed.

A provision in legislation may be desirable asserting that exemptions from vaccination on medical grounds may be given only by the health authority (medical officer of health or a medical officer designated by him). Experience has shown that when authority of this type is granted to the general practitioner, for example, or other medical personnel, exemptions may be given frequently without valid cause.

2.4 Objection to vaccination

Although most legislation concerning compulsory vaccination permits exemption of the individual for religious reasons, it is generally made administratively difficult for the individual to do so. This is to deter individuals seeking exemption on frivolous grounds.

In countries where for various reasons large tribal groups refuse vaccination, it is probable that any legal provision compelling vaccination will probably have little effect. In such instances, careful studies of the motives and nature of the beliefs of such groups and the possible methods for overcoming their objections should be explored.

3. Prohibition of variolation and arm-to-arm vaccination

Variolation continues to be practised in a few remote and primitive areas. In most instances, practitioners retain crust material from smallpox cases and inoculate a small amount of the material into the arm of recipients by some form of scratch technique. The individuals generally experience a modified form of smallpox with a lower mortality than that which they would have experienced by natural acquisition of the disease. However, those who come in contact with these individuals are subject to the same risk of contracting severe smallpox as if the individual had experienced a natural infection. Since variola virus in the crust material can persist for very long periods, it is vital that every effort be made to terminate present practices of variolation by whatever means necessary, including direct punitive action.

4. Isolation procedures at the time of an outbreak

Health authorities should be granted reasonably broad powers with respect to isolation of cases and contacts at the time of an outbreak. As with compulsory vaccination, there should, in reality, be comparatively few instances when such powers would need to be invoked. In many endemic areas, the principal barrier to hospital isolation of patients and indeed of reporting of cases at all is the poor quality or absence of isolation facilities. Many fear, justifiably, that if taken to an isolation facility, they may have a poorer chance of recovery. The only satisfactory solution to this problem is not legislation but the provision of more satisfactory quarters and care, however simple.

5. Reporting of cases

In most countries, legislation now provides for the prompt (usually telegraphic) reporting of all suspect cases. However, legislation alone will not ensure the necessary prompt and complete reporting and investigation of suspect smallpox cases and outbreaks. Special efforts are required. (Section VII, Surveillance)

6. International Sanitary Regulations

Virtually all countries are bound by the International Sanitary Regulations. Their aim is to prevent the international spread of quarantinable diseases with the least interference with international traffic. The Regulations refer only to measures applicable to international travellers and international traffic, not to the measures which should be applied on a national basis to prevent diseases within a country, ~~and~~ thus, the Regulations should not be considered ~~an infallible remedy~~ against the spread of quarantinable diseases.
as a guarantee

Particularly pertinent sections dealing with smallpox are abstracted here for ready reference.

INTERNATIONAL SANITARY REGULATIONS^a

PART I. DEFINITIONS

Article 1

For the purposes of these Regulations:

"epidemic" means an extension of a quarantinable disease by a multiplication of cases in a local area;

"imported case" means an infected person arriving on an international voyage;

"infected local area" means a local area where there is a case of smallpox that is neither an imported case nor a transferred case;

"transferred case" means an infected person whose infection originated in another local area under the jurisdiction of the same health administration.

^a World Health Organization, International Sanitary Regulations, 3rd ed., Geneva, 1966.

PART II. NOTIFICATIONS AND EPIDEMIOLOGICAL
INFORMATION

Article 3^a

1. Each health administration shall notify the Organization by telegram within twenty-four hours of its being informed that a local area has become an infected local area.
2. In addition each health administration shall notify the Organization by telegram within twenty-four hours of its being informed:
 - (a) that one or more cases of a quarantinable disease have been imported or transferred into a non-infected local area - the notification to include information on the origin of infection;
 - (b) that a ship or aircraft has arrived with one or more cases of a quarantinable disease on board - the notification to include the name of the ship or the flight number of the aircraft, its previous and subsequent ports of call, and whether the ship or aircraft has been dealt with.
3. The existence of the disease so notified on the establishment of a reasonably certain clinical diagnosis shall be confirmed as soon as possible by laboratory methods, as far as resources permit, and the result shall be sent immediately to the Organization by telegram.

Article 4

1. Any notification required under paragraph 1 of Article 3 shall be promptly supplemented by information as to the source and type of the disease, the number of cases and deaths, the conditions affecting the spread of the disease, and the prophylactic measures taken.

^a (1) When a case of quarantinable disease is hospitalized in an area other than the actual infected local area, health administrations should report sufficient details of the case so that the Organization can correctly indicate the infected local area involved and also whether the area of hospitalization is an infected local area. (Off. Rec. Wld Hlth Org., 72, 38)

(2) In the absence of information on the origin of infection, as required under sub-paragraph 2 (a), a negative report is in conformity with the Regulations. It is then for the health administration to follow up the notification with such information as may later become available, as soon as possible. (Off. Rec. Wld Hlth Org., 135, 32)

(3) In an effort to avoid delays, health administrations might consider having certain health authorities, e.g. those at towns and cities adjacent to a port or an airport, notify the Organization directly. (Off. Rec. Wld Hlth Org., 135, 36; 143, 45)

Article 5

1. During an epidemic the notifications and information required under Article 3 and paragraph 1 of Article 4 shall be followed by subsequent communications sent at regular intervals to the Organization.
2. These communications shall be as frequent and as detailed as possible. The number of cases and deaths shall be communicated at least once a week. The precautions taken to prevent the spread of the disease, in particular the measures which are being applied to prevent the spread of the disease to other territories by ships, aircraft, trains, or road vehicles leaving the infected local area, shall be stated.

Article 6^b

1. The health administration for a territory in which an infected local area is situated shall notify the Organization when that local area is free from infection.
2. An infected local area may be considered as free from infection when all measures of prophylaxis have been taken and maintained to prevent the recurrence of the disease or its spread to other areas, and when:
 - (a) in the case of smallpox, a period of time equal to twice the incubation period of the disease, as hereinafter provided, has elapsed since the last case identified has died, recovered or been isolated, and infection from that disease has not occurred in any other local area in the vicinity.

^b (1) When a local area, previously infected, has been declared free from infection, no measures may be taken by health authorities of countries of arrival against persons coming from such a local area, solely on the grounds that another local area within the territory of the country of departure is an infected local area. (Off. Rec. Wld Hlth Org., 79, 499)

(2) The period stipulated in paragraph 2 should begin when the last case is identified as a case, irrespective of the time at which the person may have been isolated. (Off. Rec. Wld Hlth Org., 127, 33)

(3) The time-limits in paragraph 2 (a), equal to twice the incubation period of the disease, are minimum limits, and health administrations may extend them.

Article 9

In addition to the notifications and information required under Articles 3 to 8 inclusive, each health administration shall send to the Organization weekly:

(a) a report by telegram of the number of cases of the quarantinable diseases and deaths therefrom during the previous week in each of its towns and cities adjacent to a port or an airport;

(b) a report by airmail of the absence of such cases during the periods referred to in sub-paragraphs (a), (b), and (c) of paragraph 2 of Article 6.

PART IV. SANITARY MEASURES AND PROCEDURE

CHAPTER I. GENERAL PROVISIONS

Article 27^b

1. A person under surveillance shall not be isolated and shall be permitted to move about freely. The health authority may require him to report to it, if necessary, at specified intervals during the period of surveillance; the health authority may also subject such a person to medical investigation and make any inquiries which are necessary for ascertaining his state of health.

2. When a person under surveillance departs for another place, within or without the same territory, he shall inform the health authority, which shall immediately notify the health authority for the place to which the person is proceeding. On arrival the person shall report to that health authority which may apply the measure provided for in paragraph 1 of this Article.

^b Enforcement of surveillance must rely on national legislation.
(Off. Rec. Wld Hlth Org., 56, 56; 143, 49)

CHAPTER II. SANITARY MEASURES ON DEPARTURE

Article 30^a

1. The health authority for a port or an airport or for the local area in which a frontier post is situated may, when it considers it necessary, medically examine any person before his departure on an international voyage. The time and place of this examination shall be arranged to take into account the customs examination and other formalities, so as to facilitate his departure and to avoid delay.

2. The health authority referred to in paragraph 1 of this Article shall take all practicable measures:

(a) to prevent the departure of any infected person or suspect.

3. Notwithstanding the provisions of sub-paragraph (a) of paragraph 2 of this Article, a person on an international voyage who on arrival is placed under surveillance may be allowed to continue his voyage. If he is doing so by air, the health authority for the airport shall record the fact on the General Declaration.

^a (1) In an infected area a health authority may, in partial fulfilment of its obligations under Article 30, require a vaccination certificate as evidence of freedom from infection in departing travellers. (Off. Rec. Wld Hlth Org., 87, 406; 110, 47; 127, 36). In the case of cholera or smallpox, only an infected person or a suspect may be prevented from departure. (Off. Rec. Wld Hlth Org., 143, 49)

(2) Health administrations are urged to take all practical measures to inform the travelling public and travel agencies of the vaccination requirements of all countries to which a traveller is proceeding. They should advise travellers that these requirements are related not only to the health conditions prevailing in the country of departure but also to conditions in countries in which the traveller disembarks or transits during his journey, except in so far as he follows the provisions of Article 34. (Off. Rec. Wld Hlth Org., 127, 45; 143, 49)

(3) "Operators shall take precautions to the end that passengers hold any control documents required by Contracting States." (Standard 3.26, fifth edition of the ICAO Annex 9 to the Convention on International Civil Aviation: Off. Rec. Wld Hlth Org., 143, 49)

(4) "Public authorities should invite shipowners to take all reasonable precautions to the end that passengers hold any control documents required by Contracting Governments." (Recommended Practice 3.15.1, Convention on Facilitation of International Maritime Traffic Inter-Governmental Maritime Consultative Organization, 1965)

CHAPTER IV. SANITARY MEASURES ON ARRIVAL

Article 38^a

On arrival of a ship, an aircraft, a train, or a road vehicle, an infected person on board may be removed and isolated. Such removal shall be compulsory if it is required by the person in charge of the means of transport.

Article 39

1. A health authority may place under surveillance any suspect on an international voyage arriving by whatever means from an infected local area. Such surveillance may be continued until the end of the appropriate period of incubation.
2. Except where specifically provided for in these Regulations, isolation shall not be substituted for surveillance unless the health authority considers the risk of transmission of the infection by the suspect to be exceptionally serious.

PART V. SPECIAL PROVISIONS RELATING TO EACH
OF THE QUARANTINABLE DISEASES

CHAPTER IV. SMALLPOX

Article 82

For the purposes of these Regulations the incubation period of smallpox is fourteen days.

^a Compulsory removal of infected persons should not be insisted upon in ports where adequate facilities for the reception of such persons cannot be expected to be available. (Off. Rec. Wld Hlth Org., 64, 34)

Article 83^a

1. A health administration may require any person on an international voyage who does not show sufficient evidence of protection by a previous attack of smallpox to possess, on arrival, a valid certificate of vaccination against smallpox. Any such person who cannot produce such a certificate may be vaccinated; if he refuses to be vaccinated, he may be placed under surveillance for not more than fourteen days, reckoned from the date of his departure from the last territory visited before arrival.

2. A person on an international voyage, who during a period of fourteen days before his arrival has visited an infected local area and who, in the opinion of the health authority, is not sufficiently protected by vaccination or by a previous attack of smallpox, may be required to be vaccinated, or may be placed under surveillance, or may be vaccinated and then placed under surveillance; if he refuses to be vaccinated, he may be isolated. The period of surveillance or isolation shall not be more than fourteen days, reckoned from the date of his departure from the infected local area. A valid certificate of vaccination against smallpox shall be considered as evidence of sufficient protection.

Article 84

1. A ship or an aircraft shall be regarded as infected if, on arrival, it has a case of smallpox on board, or if such a case has occurred on board during the voyage.

2. Any other ship or aircraft shall be regarded as healthy, even though there may be suspects on board, but any suspect may on disembarking be subjected to the measures provided for in Article 85.

Article 85

1. On arrival of an infected ship or aircraft, the health authority:

(a) shall offer vaccination to any person on board who, in its opinion, is not sufficiently protected against smallpox;

(b) may, for a period of not more than fourteen days, reckoned from the last exposure to infection, isolate or place under surveillance any person disembarking, but the health authority shall take into account the previous vaccinations of the person and the possibility of his having been exposed to infection in determining the period of such isolation or surveillance;

^a (1) Any State may apply the measures provided for in this article, whether smallpox infection is present in its territory or not. (Off. Rec. Wld Hlth Org., 135, 40)

(2) It is a useful procedure to provide arrivals from a smallpox-infected area with a warning card stating that, in case of illness, they should seek medical advice and present the warning card. (Off. Rec. Wld Hlth Org., 127, 51)

Article 85 (continued)

(c) shall disinfect:

- (i) any baggage of any infected person, and
- (ii) any other baggage or article such as used bedding or linen, and any part of the ship or aircraft, which is considered to be contaminated.

2. A ship or an aircraft shall continue to be regarded as infected until every infected person has been removed and until the measures required by the health authority in accordance with paragraph 1 of this Article have been effectively carried out. The ship or aircraft shall thereupon be given free pratique.

Article 86

On arrival, a healthy ship or aircraft, even when it has come from an infected local area, shall be given free pratique.

Article 87

If, on arrival of a train or a road vehicle, a case of smallpox is discovered, the infected person shall be removed and the provisions of paragraph 1 of Article 85 shall apply, any period of surveillance or isolation being reckoned from the date of arrival, and disinfection being applied to any part of the train or road vehicle which is considered to be contaminated.

PART VI. SANITARY DOCUMENTS

Article 98^b

- 1. The certificate specified in the Appendix shall be printed in English and in French. An official language of the territory of issue may be added.
- 2. The certificate referred to in paragraph 1 of this Article shall be completed in English or in French.

^b (1) The certificate is an individual certificate and should in no circumstances be used collectively. Separate certificates of vaccination should be issued for children; the information should not be incorporated in the mother's certificate. (Off. Rec. Wld Hlth Org., 56, 48)

(2) No departure should be made from the model of the certificate in the Appendix of the Regulations, and no photograph should be included. (Off. Rec. Wld Hlth Org., 56, 49; 118, 54)

(3) Certificates of vaccination shall be completed in English or in French. Completion in another language in addition is not excluded. (Off. Rec. Wld Hlth Org., 56, 48)

(4) A certificate not printed in the proper form or not completed in the English or French language is not a valid certificate under the Regulations. (Off. Rec. Wld Hlth Org., 102, 48; 118, 54)

(5) The date on certificates of vaccination should be recorded in the following sequence: day, month, year - the month to be written in letters and not in figures (example: 2 June 1966). (Off. Rec. Wld Hlth Org., 56, 54; 118, 54)

(6) Health administrations should take all reasonable steps to ensure that the certificates issued in their territories are in conformity with the Regulations and the interpretations thereon of the Health Assembly, and particularly that certificates are fully completed and all entries on them are legible. They should also undertake all practicable measures to institute more specific control to ensure that false certificates are not issued. (Off. Rec. Wld Hlth Org., 102, 50; 118, 54; 143, 58)

(7) A parent or guardian should sign the international certificate of vaccination when the child is unable to write. The signature of an illiterate should be indicated in the usual manner by his mark and the indication by another that this is the mark of the person concerned. (Off. Rec. Wld Hlth Org., 72, 49)

(8) Vaccinations may be carried out by nurses and medical technicians if under the direct supervision of a qualified medical practitioner. The latter is required to sign the certificate in his own handwriting; his official stamp is not an accepted substitute for the signature. (Off. Rec. Wld Hlth Org., 72, 49)

(9) If a vaccinator is of the opinion that vaccination is contra-indicated on medical grounds he should provide the person with written reasons underlying that opinion, which health authorities may take into account. (Off. Rec. Wld Hlth Org., 56, 54)

To be valid in international traffic, vaccination certificates must be printed in English and French; a third language may be added. The certificate must be fully and correctly completed in English or French; completion in another language in addition is not excluded. — Pour être valables dans les voyages internationaux, les certificats de vaccination doivent être imprimés en français et en anglais; une troisième langue peut être ajoutée. Le certificat doit être complètement et correctement rempli en anglais ou en français, avec addition facultative d'une autre langue.

(Exemple)

(Exemple)

INTERNATIONAL CERTIFICATE OF VACCINATION OR REVACCINATION
AGAINST SMALLPOX
CERTIFICAT INTERNATIONAL DE VACCINATION OU DE REVACCINATION
CONTRE LA VARIOLE

This is to certify that } OLE OLSEN date of birth } 8 Nov. sex } M
Je soussigné(e) certifie que } né(e) le } 1925 sexe }
whose signature follows }
dont la signature suit } *O. Olsen*

has on the date indicated been vaccinated or revaccinated against smallpox with a freeze-dried or liquid vaccine certified to fulfil the recommended requirements of the World Health Organization.

a été vacciné(e) ou revacciné(e) contre la variole à la date indiquée ci-dessous, avec un vaccin lyophilisé ou liquide certifié conforme aux normes recommandées par l'Organisation mondiale de la Santé.

e.g.: 5 January 1966
ex.: 5 janvier 1966

Signature of person vaccinated
Signature de la personne vaccinée

Signature required
(rubber stamp not accepted)
Signature exigée (le cachet
n'est pas suffisant)

Approved stamp
Cachet d'authentification

Date	Show by "x" whether: Indiquer par « x » s'il s'agit de	Signature and professional status of vaccinator Signature et titre du vaccinateur	Origin and batch no. of vaccine Origine du vaccin et numéro du lot	Approved stamp Cachet d'authentification	
	1a Primary vaccination performed Primo-vaccination effectuée	1b Read as successful Prise Unsuccessful Pas de prise	2	3	4
5 January 1966	X	<i>Dr. John Doe M.D.</i>	BERN 1665/1		

The validity of this certificate shall extend for a period of three years, beginning eight days after the date of a successful primary vaccination or, in the event of a revaccination, on the date of that revaccination.

The approved stamp mentioned above must be in a form prescribed by the health administration of the territory in which the vaccination is performed.

Any amendment of this certificate, or erasure, or failure to complete any part of it, may render it invalid.

La validité de ce certificat couvre une période de trois ans commençant huit jours après la date de la primovaccination effectuée avec succès (prise) ou, dans le cas d'une revaccination, le jour de cette revaccination.

Le cachet d'authentification doit être conforme au modèle prescrit par l'administration sanitaire du territoire où la vaccination est effectuée.

Toute correction ou rature sur le certificat ou l'omission d'une quelconque des mentions qu'il comporte peut affecter sa validité.

Notes to Appendix

^a (1) It rests solely with each health administration to decide which physicians in its own territory may sign and issue international certificates of vaccination. It also rests solely with each health administration to decide in what form the approved stamp shall be for certificates issued in its own territory. States should study the possibility of issuing or requiring a standard approved stamp for the whole territory. (Off. Rec. Wld Hlth Org., 143, 58)

(2) In conformity with the decision of the Health Assembly that the principle of authentication of international certificates of vaccination is not accepted in the Regulations, the term "cachet d'authentification" on the certificate shall be interpreted as "cachet autorisé". (Off. Rec. Wld Hlth Org., 56, 46; 72, 49)

(3) International vaccination certificates are issued under the authority of a government and consequently health administrations have the responsibility to ensure that potent vaccines and proper procedures are used, so that vaccination will result in an adequate immunity to smallpox. (Off. Rec. Wld Hlth Org., 127, 51; 135, 47)