Smallpox
To ensure the world is prepared in case of a re-emergence

The last case of Smallpox occurred in 1977. In 1980 the World Health Assembly declared this disease eradicated. A re-emergence of smallpox would result in a rapid spread as the majority of the population has become susceptible.

WHO aims to increase preparedness for, and response to a potential outbreak of smallpox, as per its assigned role through several World Health Assembly (WHA) resolutions (WHA/33, WHA/55, WHA/59).

Its objectives are:
- countries are prepared to respond to a possible outbreak of smallpox through a functioning laboratory network and technical guidance as part of the overall preparedness strategy, and
- the availability of a global smallpox vaccine stockpile through strategies and appropriate financial mechanisms.

1. Emergency vaccine stockpile

An emergency smallpox vaccine stockpile was created to ensure smallpox vaccine is immediately available if needed. This emergency stockpile consists of a physical stock in Switzerland and a pledged component by different countries.

The management of this stockpile includes ensuring:
- SOPs for vaccine requests and deployment;
- agreements with donating countries;
- availability of new vaccines;
- a protocol for monitoring adverse events.

2. Advisory committees

A. Orthopoxvirus Advisory Committee meeting

After the smallpox eradication the orthopoxvirus committee was established to make recommendations on preparedness and response. This group provides advice on key strategic issues such as:
- size and composition of the vaccine stockpile;
- containment strategy;
- global regulations and procedures to handle variola virus and DNA plasmids.

B. Advisory Committee for Variola Virus Research

The Advisory Committee for Variola Virus Research (ACVVR) was established in 1999 to oversee all research using live variola virus, as well as to provide scientific advice on smallpox research (in compliance with resolution WHA 52.10, 1999). The committee meets yearly.
C. Advisory Committee on the implications of the use of synthetic biology technology for smallpox preparedness and response

In May 2014, the WHA requested the Director-General to undertake a consultation on the implications of the use and potential of technologies for biological synthesis on smallpox preparedness and control, so that the WHA may reach global public consensus on the timing of the destruction of existing variola virus stocks.

3. Orthopoxvirus laboratory network

WHO will coordinate a worldwide network of laboratories specialized in smallpox diagnostics. One or two regional laboratories will be selected in each WHO region and trained to perform rapid and reliable variola virus screening.

4. Safety inspections

WHO sanctioned repositories of live variola virus are currently maintained only in two WHO collaborating centres. Biennial inspections take place to ensure that conditions of storage of the virus and of research conducted in the laboratories meet the highest requirements for biosafety and biosecurity.

5. Public access to smallpox records

The digitalization of more than 720,000 smallpox documents was accomplished in 2010. It is essential to have these records easily and globally accessible for further academic and scientific research and for the historical legacy of the Smallpox Eradication Programme.

More information is available on the WHO website: http://www.who.int/csr/disease/smallpox

Examples of ongoing activities

Preparedness

- Development of a WHO framework for vaccine donations and the emergency vaccine stockpile.
- Collaboration with countries, for elaboration of preparedness plans for the use of these vaccines.
- Development of a scientific information package regarding vaccine efficacy and safety data.
- Follow up on developments of new vaccines and drugs.
- Development of a protocol/framework for monitoring adverse events following immunization.
- Modelling different smallpox outbreak scenarios or estimation of the size of the vaccine stockpile.

Research

- Review and approval of research proposals submitted.

Safety

- Biennial biosafety/biosecurity inspections of smallpox virus repositories.

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