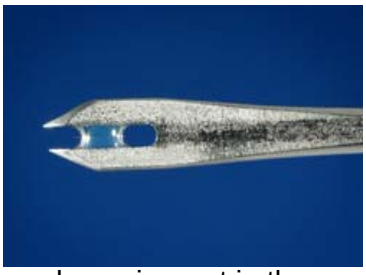
Smallpox Case Study

Smallpox is an infectious and sometimes fatal disease caused by the *Variola major* virus. There is no known cure but vaccination can prevent the development and spread of the disease. Generally, direct and fairly prolonged face-to-face contact is required to spread smallpox from one person to another. Smallpox also can be spread through direct contact with infected bodily fluids or contaminated objects such as bedding or clothing. People with smallpox develop visible marks on their skin, making it easy to diagnose the disease and for government health officials to track infection. Smallpox is not known to be transmitted by insects or animals.

(Above: Smallpox virus, courtesy CDC Public Health Image Library/Dr. Fred Murphy, Sylvia Whitfield)

A vaccine against smallpox was first discovered in 1796. The World Health Organization (WHO) launched a global campaign to eliminate smallpox in 1967. The WHO initiated a campaign to stop the disease by vaccinating everybody exposed to the disease. The team carefully monitored the level of vaccination in each community, and responded to any outbreaks quickly to vaccinate others in the area at risk of infection. Technological advances and international collaboration played a major part in the success of the smallpox campaign. Twenty-five countries donated vaccines to the effort. A freeze-dried version, which lasted a month, replaced an earlier liquid vaccine that had to be used within 48 hours. The bifurcated needle with two split ends was invented in the 1960s, and could be used with a small amount of vaccine, sterilized, and reused many times.



(Above left: Dr. D.A. Henderson and members of the World Health Organization's Smallpox Eradication Program, 1979, Courtesy WHO; above right: Close-up of a bifurcated needle, Courtesy CDC Public Health Image Library/James Gathany)

To contain any outbreaks during the eradication campaign, the World Health Organization offered $1000 to the first person to report an active smallpox case. All of the close contacts of the infected person and the close contacts' circle of contacts would then be vaccinated.

Under the leadership of Dr. D.A. Henderson, the World Health Organization had succeeded in stopping the spread of smallpox within a decade. With the success of the campaign, in 1977 smallpox became the first major disease to be eliminated from the globe.

(Above left: Reward for reports for cases of smallpox, World Health Organization, 1970s, Courtesy National Library of Medicine; above right: Dr. D.A. Henderson in Ethiopia, administering a smallpox vaccination, ca. 1972, Courtesy WHO)