

Technical Reports

Polio outbreak in Netherlands points to dangers of incomplete immunization

An outbreak of poliomyelitis in the Netherlands, with the most recent of 68 cases confirmed last week, has led to a warning by the World Health Organization (WHO) on the dangers of incomplete immunization. "As long as even small pockets of unvaccinated persons exist, even the richest countries will be at risk of sudden outbreaks of poliomyelitis", said Dr. R. H. Henderson, Assistant Director-General of WHO.

In the current outbreak, which has already cost the Dutch health services US \$ 10 million, the national disease surveillance programme has registered 68 cases among children and adults spanning seven provinces out of 12. At least two persons are known to have died from the disease.

The Netherlands deservedly enjoys a reputation of having one of the most efficient and up-to-date health services in Europe. The overwhelming majority of the country's population is immunized against polio as a matter of course. But there are pockets in different provinces containing unimmunized populations. They belong to various religious groups which do not accept immunization on principle. In the current outbreak persons belonging to five different fundamentalist denominations were involved.

The last polio outbreak in the Netherlands took place some 15 years ago. Then, as now, these particular groups were implicated. In 1979, the virus was carried from the Netherlands to North America by members of these communities visiting their relatives in Canada and in the United States. According to US data, this is what caused the last polio outbreak in the country, which happened among the Amish community in the state of Pennsylvania. The 1992–93 Dutch outbreak has placed the US disease surveillance system on alert but there have been no cases of polio transmission reported so far.

After having proclaimed in 1988 its intention to rid the world of this major crippling disease by the year 2000, WHO and its Member States launched a polio eradication initiative based on a three-pronged approach: high immunization coverage, disease surveillance and the development of laboratory services.

So far, the overall results have been encouraging. In the Western Hemisphere, which launched its own eradication efforts in 1985, not a single case of poliomyelitis has been diagnosed for the last 18 months. In all WHO's regions around the world, reference laboratory services are being put in place. Annual immunization coverage of children in their first year of life reached 80% mark in 1990 and the number of cases reported has fallen dramatically. But the recent polio outbreak in the Netherlands demonstrates the pitfalls on the road to eradication. "What is important", says Dr. Robert Kim-Farley, Director of WHO Expanded Programme on Immunization, "is to see the Dutch incident in the global perspective. Our Dutch colleagues managed not only to contain the outbreak but to deal with it in a very efficient and professional way. The lesson for the world, however, is that until the planet is totally free of polio, even the best immunized countries will be at risk of imported infections and epidemics".

According to WHO, the global immunization efforts will require an estimated 11 billion doses of vaccine over 10 years. Although the price per dose is low – 8 US cents – the funds to buy the vaccine are not readily available, even though the cost effectiveness of polio eradication has been proven beyond any doubt. On a global scale, it is estimated that the polio initiative will produce savings of 500 million US dollars by the year 2000 increasing to US \$ 3 billion annually by the year 2015.

Polio eradication requires a great amount of scientific and laboratory work. WHO is spearheading research on the existing wild poliovirus strains, constantly updating its data bank. Existing strains of virus mutate by about 2% per year. These small changes allow health authorities to determine whether the virus is an importation or a new domestic variety. As a result of a single intercontinental flight, viruses can easily enter any country in the world, potentially disrupting the most efficient and sophisticated public health services.

World Health Organization, Geneva