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## Vaccination – the key strategy of the global eradication of poliomyelitis

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**K**ey strategies of poliomyelitis eradication are: sensitive surveillance of acute flaccid paralysis (AFP) with obligatory laboratory investigation of each case of paralysis; maintenance of vaccine coverage against poliomyelitis among children at 95% level; organization of mass campaigns of vaccination-national immunization days in polio endemic countries among children under five years in two rounds per year; organization of national/subnational immunization days in case of indigenous circulation of wild poliovirus after importation among age groups in which polio cases were revealed. Poliomyelitis has been eradicated in the major part of the world, but surveillance must be continued because wild polioviruses can be imported and circulated in polio free countries in case of low vaccine coverage of population. Re-emergence of poliomyelitis can compromise the global polio eradication initiative in the post-certification period. The goal of surveillance is to evaluate the circulation of imported wild polioviruses and vaccine-derived polioviruses with nucleotide substitutions. The detection of these pathogenic strains is based on the analysis of poliovirus strains isolated in the course of AFP surveillance using virological and molecular methods. The ongoing risk of importation of wild polioviruses into polio-free countries remains till poliomyelitis is eradicated. In 2010, an important outbreak of poliomyelitis caused by imported wild poliovirus occurred in Tajikistan which had previously been polio free. Sequencing of the VP1 region of virus revealed that the causative agent of the outbreak in Tajikistan was closely related to wild type 1 poliovirus previously isolated in India. The same poliovirus was also isolated from poliomyelitis cases and healthy children among the migrants who arrived from Tajikistan in Russia. The spread of imported wild poliovirus in Tajikistan was possible because of immunization gap when the vaccine coverage had dramatically decreased. Our study showed that the percentage of migrants' children who were seronegative to three types of polioviruses was 30 times higher than it was among resident children in the North-West of Russia. The systematic control of adequate polio vaccination is indispensable in order to prevent transmission of imported wild polioviruses in polio free countries and to achieve WHO goal of the global eradication of poliomyelitis.

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