

2. 2 out of 3 wild Poliovirus strains have been eradicated, says WHO

Prelims: Science & Technology

Mains: GS-II Issues relating to development and management of Social Sector or services relating to Health.

Why in News?

- ▶ In an announcement by the World Health Organisation (WHO) on World Polio Day (October 24), an independent commission of experts declared that **Wild Poliovirus Type 3 (Wpv3)** has been eradicated worldwide. This follows the eradication of **Smallpox and Wild Poliovirus Type 2.**

About Wild Polio Virus:

- ▶ The virus is transmitted by person-to person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (e.g. contaminated water or food) and multiplies in the intestine, from where it can invade the nervous system and can cause paralysis.
- ▶ Initial symptoms of polio include fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs.
- ▶ In a small proportion of cases, the disease causes paralysis, which is often permanent. There is no cure for polio, it can only be prevented by immunization.
- ▶ There are three individual and immunologically distinct wild poliovirus strains:
 - ❖ Wild poliovirus type 1 (WPV1)
 - ❖ Wild poliovirus type 2 (WPV2)
 - ❖ Wild poliovirus type 3 (WPV3)
- ▶ Symptomatically, all three strains are identical, in that they cause irreversible paralysis or even death. But there are genetic and virological differences, which make these three strains three separate viruses that must each be eradicated individually.
- ▶ This type 1 virus remains in circulation in just two countries, Afghanistan and Pakistan.

Types of Polio Vaccines:

Two different kinds of vaccine are available:

1. An inactivated (killed) polio vaccine (IPV)
2. Live attenuated oral polio vaccine (OPV)

1. Inactivated Polio vaccine (IPV):

- ▶ It is produced from wild-type poliovirus strains of each serotype that have been inactivated (killed) with formalin.

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- ▶▶ It is an injection able vaccine and can be administered alone or in combination with other vaccines (e.g., diphtheria, tetanus, pertussis, hepatitis B, and haemophilus influenza).

2. Oral Polio vaccine (OPV):

- ▶▶ It consists of a mixture of the three live attenuated poliovirus serotypes (type 1, 2 and 3), selected for their lower neurovirulence and reduced transmissibility.
- ▶▶ Monovalent oral polio vaccines (mOPV) consist of live, attenuated (weakened) poliovirus strains of either type 1 (mOPV1) or type 3 (mOPV3) poliovirus only. The vaccine gives protection against one type of poliovirus only (either type 1 or type 3 depending on the vaccine).
- ▶▶ Trivalent OPV contains live and weakened versions for all the three types (1, 2 and 3) of wild polio while the bivalent vaccine will contain type 1 and 3. Type 2 of wild polio virus has been eradicated worldwide long time back.

