

OUTBREAK CONTROL IN CONFLICT-AFFECTED AREAS Lessons from the novel Oral Polio Vaccine (nOPV2)

“In conflict, children face more than bombs and bullets; they are at risk of deadly diseases that should no longer exist”¹ Catherine Russell, Executive Director of UNICEF on World Polio Day 2024

The risk of polio resurgence is higher when water and sanitation infrastructure is destroyed, families are displaced, and health systems collapse. In 2023, 541 children were paralyzed by polio globally and 85% live in fragile, conflict-affected and vulnerable countries. As routine childhood immunization levels have dropped in these settings from 75 to 70%, polio cases have more than doubled over the last five years.

The most prevalent form of polio paralyzing children today is type 2 variant poliovirus,² which can occur in settings where not enough children are vaccinated. Therefore, achieving and maintaining high vaccination coverage is critical through strong routine immunization and, in places already impacted by polio, house-to-house vaccination campaigns. But these activities become increasingly difficult in places where conflict rages.

STOPPING POLIO IN GAZA

After 25 years of being polio-free, type 2 variant polio was detected in sewage samples collected from central Gaza in July 2024 amid a devastating war. One month later, a young boy was reported to have been paralyzed by the virus. Prior to the conflict, immunization rates for polio in Gaza were at exceptional high levels (99%). However, coverage rapidly declined after it became nearly impossible for families to get their children vaccinated.

What has been done?

Just weeks after the first case was reported, a vaccination campaign began across Gaza to protect all children under ten years of age with the novel Oral Polio Vaccine type 2 (nOPV2). Between 1–12 September 2024, amidst historic humanitarian pauses in the conflict, 559,161 children or an estimated 95% of eligible children received the vaccine. But to receive full protection, children need a second dose, so a second round was conducted from 14 October – 5 November 2024. An additional 556,774 children under 10 years were vaccinated with nOPV2 across Gaza. Whereas the campaign achieved good coverage in central (103%) and southern (91%) Gaza, in northern Gaza only approximately 88% coverage was achieved due to ongoing violence.

What next?

Efforts are now underway to boost immunity levels through routine immunization services offered at the small number of still-functional health facilities. Disease surveillance is also continuing to rapidly detect any further poliovirus transmission. In addition, WHO and UNICEF continue to call for a ceasefire to be able to effectively respond to this and other dire needs of the population.



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From foresight to frontline control: breaking the mould in controlling an infectious disease

Back in 2011 when type 2 variant poliovirus was responsible for only a small fraction of the polio cases, efforts began to develop a novel Oral Polio Vaccine (nOPV) that would be more genetically stable than the existing OPV and therefore have a lower risk of reverting to a form that can cause paralysis. With development led by an international scientific consortium, the resulting product, nOPV type 2 (nOPV2) was first rolled out in March 2021 to more sustainably stop outbreaks of type 2 variant poliovirus, which had grown to be the most prevalent form of polio globally.

Learning from nOPV2: Foresight and innovative technology development are both essential to control infectious diseases.

- 1 UNICEF (23 October 2024) 85 per cent of children affected by polio in 2023 lived in fragile and conflict-affected countries. <https://polioeradication.org/news/85-per-cent-of-children-affected-by-polio-in-2023-lived-in-fragile-and-conflict-affected-countries/>
- 2 See UNICEF (23 October 2024).
- 3 Morbidity and Mortality Weekly Report (MMWR) (17 October 2024). <https://www.cdc.gov/mmwr/volumes/73/wr/mm7341a1.htm>

This Information Brief is based on findings stemming from a research project published in: Told M., Matlin S.A., Quigley P. (2024) Towards Polio Eradication: Insights from the Development and Rollout of the novel Oral Polio Vaccine nOPV2. H15 Governance: Geneva.

Safe and effective tools, rapid deployment and high-quality campaigns: factors of success to curb outbreaks

To date, over 1.2 billion doses of nOPV2 have been given to children across 42 countries. The number of paralytic cases due to type 2 variant polio and new emergences have steadily declined since its introduction in 2021. However, 196 children have been paralyzed in 2024 so far and 31 countries are still battling outbreaks of the variant virus. The majority of cases, however, are now occurring in four places where children are at the highest risk of encountering and spreading the virus – northern Nigeria, eastern Democratic Republic of the Congo, south-central Somalia, and northern Yemen. These and many of the other places, where polio remains, are some of the most difficult areas to deliver healthcare as challenges like war, political instability, and vaccine misinformation mount. As a result of these and other operational challenges, outbreak response campaigns can be delayed or not reach enough children to curb the spread.³ Still, moments of inspiring success – like closing an outbreak of type 2 variant poliovirus in Ukraine amid war – give us hope that stopping polio in these settings is possible through strong partnerships and global support.

Learning from nOPV2: As with any vaccine, rapid and scalable deployment that reaches every child, even in very challenging local situations, and timely sharing of campaign results are important success factors in outbreak response.