

## Polio eradication activities

*This note last updated: March 2023*

*Current status: No further work planned*

Polio is a viral disease that can cause paralysis and death.<sup>1</sup> It mainly affects children younger than five years old.<sup>2</sup> Polio can be prevented through routine vaccination of children.<sup>3</sup>

The Global Polio Eradication Initiative (GPEI)<sup>4</sup> aims to end the spread of polio by the end of 2026<sup>5</sup> with a proposed \$4.8 billion budget.<sup>6</sup> The largest share of this proposed budget is to provide support for vaccination in endemic countries.<sup>7</sup> Funds are also budgeted for support activities and programs in non-endemic countries.<sup>8</sup> The GPEI estimates that there were [596](#)

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<sup>1</sup> “Polio is a highly infectious disease caused by a virus. It invades the nervous system, and can cause total paralysis in a matter of hours. The virus is transmitted by person-to-person spread mainly through the faecal-oral route or, less frequently, by a common vehicle (for example, contaminated water or food) and multiplies in the intestine. Initial symptoms are fever, fatigue, headache, vomiting, stiffness of the neck and pain in the limbs. One in 200 infections leads to irreversible paralysis (usually in the legs). Among those paralysed, 5–10% die when their breathing muscles become immobilized.” World Health Organization, [“Poliomyelitis,”](#) 2022.

<sup>2</sup> “Polio mainly affects children under 5 years of age. However, anyone of any age who is unvaccinated can contract the disease.” World Health Organization, [“Poliomyelitis,”](#) 2022.

<sup>3</sup> “There is no cure for polio, it can only be prevented. Polio vaccine, given multiple times, can protect a child for life. There are two vaccines available: oral polio vaccine and inactivated polio vaccine.” World Health Organization, [“Poliomyelitis,”](#) 2022.

<sup>4</sup> “The Global Polio Eradication Initiative is a public-private partnership led by national governments with six core partners - the World Health Organization (WHO), Rotary International, the US Centers for Disease Control and Prevention (CDC), the United Nations Children’s Fund (UNICEF), Bill & Melinda Gates Foundation and Gavi, the vaccine alliance. Its goal is to eradicate polio worldwide.” [Global Polio Eradication Initiative. “Who we are.”](#)

<sup>5</sup> - “The GPEI will transform its approach in each region and country through five mutually reinforcing objectives that lay the foundation to achieve two elemental goals: Goal One to permanently interrupt all poliovirus transmission in the final WPV-endemic countries of Afghanistan and Pakistan, and Goal Two to stop circulating vaccine-derived poliovirus (cVDPV) transmission and prevent outbreaks in non-endemic countries.” World Health Organization, [Polio Eradication Strategy 2022-2026](#), p. ix.

- “Interrupting WPV1 and cVDPV2 transmission in the final two endemic countries is the primary goal on the path to global polio eradication. To interrupt all poliovirus transmission in Afghanistan and Pakistan, the GPEI plans to first limit circulation to core reservoirs and shared corridors of transmission and then interrupt all poliovirus within the reservoirs by 2023, with the global eradication of all wild poliovirus certified by 2026.” World Health Organization, [Polio Eradication Strategy 2022-2026](#), p. 7.

<sup>6</sup> “The five-year cost for the new strategy is US\$4.8 billion. Securing this amount will enable the programme to fund the critical path to implement the Polio Eradication Strategy 2022–2026.” See World Health Organization, [Global Polio Eradication Initiative Investment Case 2022-2026](#), p. vi.

<sup>7</sup> See World Health Organization, [Global Polio Eradication Initiative Investment Case 2022-2026](#), p. 30, Figure 3.

“Endemic countries: The Pakistan and Afghanistan programme will remain largely stable through certification, including a plan to deliver four or five national immunization days or similar immunization campaigns per year, with a gradual reduction from 2025 onwards. Based on lessons learned in other geographies, the GPEI has opted not to ramp down infrastructure and technical assistance in endemic countries prior to certification.” World Health Organization, [Global Polio Eradication Initiative Investment Case 2022-2026](#), p. 31.

<sup>8</sup> “The estimated cost is based primarily on eight cost drivers (Fig. 3). Among them, the major drivers are immunization activity in the two remaining endemic countries, surveillance, large-scale response to polio

[paralytic cases](#) due to polio in 2022, and we estimate that those cases will result in around [45 deaths](#). As of October 18, 2022, \$2.6 billion was pledged to the GPEI by government and philanthropic donors.<sup>9</sup>

We conducted a rough [scenario analysis](#) that estimated the benefit of providing additional funding to the GPEI under different assumptions. Although we think that additional funding could plausibly be cost-effective, a number of strict assumptions would need to hold. In particular:

- The probability of elimination due to additional GPEI activities funded by GiveWell would need to be relatively high.
- We would need to think that the GPEI would be unable to raise significant funds over the long term.<sup>10</sup>
- Polio cases would need to rise counterfactually in the absence of GPEI activities.

We think it is unlikely that all of the above considerations hold. In particular, we think it is likely that GPEI will be able to fill large funding gaps in the future (given the large existing global commitments to polio eradication).<sup>11</sup> We also believe that achieving elimination may be

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outbreaks, and an appropriately sized stockpile of oral poliovirus vaccine. Important items, although smaller cost drivers, are a mix of dedicated and integrated campaigns and gender initiatives, essential integrated health and community services, campaign quality enhancements and the targeted staffing of WHO and UNICEF country, regional and headquarter offices to support eradication.” World Health Organization, [Global Polio Eradication Initiative Investment Case 2022-2026](#), p. 32.

<sup>9</sup> “BERLIN, 18 October 2022 – Today, global leaders confirmed US\$ 2.6 billion in funding toward the Global Polio Eradication Initiative’s (GPEI) 2022-2026 Strategy to end polio at a pledging moment co-hosted by Germany’s Federal Ministry for Economic Cooperation and Development (BMZ) at the World Health Summit in Berlin.” [Global Polio Eradication Initiative, "Global leaders commit US\\$ 2.6 billion at World Health Summit to end polio," 2022.](#)

<sup>10</sup> We estimate a number of scenarios:

- \$600 million provided to GPEI
- \$600 million provided to GPEI and GPEI is able to raise funding for an additional 20 years
- GPEI’s full funding gap is filled with a 100% chance of polio elimination
- GPEI’s full funding gap is filled with a 50% chance of polio elimination
- GPEI’s full funding gap is filled with a 50% chance of polio elimination and GPEI is able to raise funding for an additional 20 years.

We compare each of these scenarios to three different counterfactuals: (1) GPEI raises no further funds in perpetuity, (2) GPEI is able to raise funds for an additional 20 years, and (3) GPEI is able to raise similar levels of funds in perpetuity. Over an estimated period of 100 years, only the following scenarios are in the range of cost-effectiveness of programs we would consider directing funding to:

- Scenario: GPEI’s full funding gap is filled with a 100% chance of polio elimination. Counterfactual: GPEI raises no further funds in perpetuity. Estimated cost-effectiveness over 100 years: [69x](#).
- Scenario: GPEI’s full funding gap is filled with a 100% chance of polio elimination. Counterfactual: GPEI is able to raise funds for an additional 20 years. Estimated cost-effectiveness over 100 years: [48x](#).
- Scenario: GPEI’s full funding gap is filled with a 50% chance of polio elimination. Counterfactual: GPEI raises no further funds in perpetuity. Estimated cost-effectiveness over 100 years: [36x](#).
- Scenario: GPEI’s full funding gap is filled with a 50% chance of polio elimination. Counterfactual: GPEI is able to raise funds for an additional 20 years. Estimated cost-effectiveness over 100 years: [15x](#).

This is a back-of-the-envelope calculation that does not take a variety of relevant factors into account. We incorporate a [1.4% discount rate for temporal uncertainty](#). See [here](#) for more information about how we use cost-effectiveness analyses in our funding decisions.

<sup>11</sup> See [here](#) for historical global contributions to GPEI. See more about our concerns about funding [here](#).

technically challenging, so the probability of success may be less than 100%.<sup>12</sup> As such, we do not plan to prioritize additional consideration of this intervention.

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<sup>12</sup> - “The Global Polio Eradication Initiative, launched in 1988 with anticipated completion by 2000, has yet to reach its ultimate goal. The recent surge of polio cases urgently calls for a reassessment of the programme's current strategy and a new design for the way forward. We propose that the sustainable protection of the world population against paralytic polio cannot be achieved simply by stopping the circulation of poliovirus but must also include maintaining high rates of population immunity indefinitely, which can be created and maintained by implementing global immunisation programmes with improved poliovirus vaccines that create comprehensive immunity without spawning new virulent viruses. The proposed new strategic goal of eradicating the disease rather than the virus would lead to a sustainable eradication of poliomyelitis while simultaneously promoting immunisation against other vaccine-preventable diseases.” [Chumakov et al. 2021](#), summary.  
- See more about our concerns about marginal impact [here](#).