

Dear Colleagues,

Last month marked 61 years since the first polio vaccine, the inactivated polio vaccine (IPV), was developed. As the world races toward the finish line, we are reminded that innovations have always been crucial for progress. Today, innovations are helping make vaccines safer, strengthening vaccine delivery, and bringing us close to eradication.

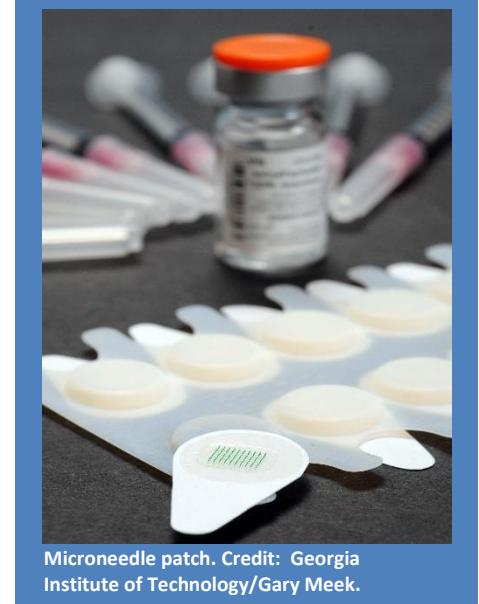
As mentioned in the April 2016 [letter](#), monovalent type 2 oral polio vaccine (OPV) will be used for vaccine-derived type 2 outbreaks now that the switch has occurred. An OPV clinical development group of polio partners developed new type 2 OPV formulations to respond to possible outbreaks of type 2 vaccine-derived polio. These new formulations stabilize potential genetic mutations so the virus no longer regains the ability to cause paralysis among populations with low immunity to polio. Clinical trials for the reformulated vaccine are estimated to start in mid-2017. Work is also under way to develop similarly modified versions of types 1 and 3 OPV. If successful, this approach would eliminate the risk of outbreaks of vaccine-derived polio.

Fractional dose IPV, a partial dose administered underneath the skin or intradermally, will also be used in post-switch type 2 circulating vaccine-derived poliovirus outbreak responses when appropriate. Global IPV supply is constrained, and fractional dose will stretch the supply further. Administering fractional dose IPV requires trained healthcare workers, and this can be challenging in certain situations. To simplify the delivery of fractional dose IPV, the polio program is investing in injection devices that deliver the right amount of vaccine intradermally. Another innovation is the dissolvable microneedle patch. The patches contain 100 vaccine-filled needles, approximately the diameter of human hair, that dissolve when pressed onto the skin. There are other microneedle patches in development, including the Nanopatch™ technology, which has shown promise in pre-clinical studies. The microneedle patch and Nanopatch can be used by minimally trained workers and simplify vaccine storage and disposal. Although the use of these tools provides optimism for efforts to end polio, work still remains before these methods are ready for widespread use.

Innovative tools have also made it easier for workers to detect polio and monitor progress. Pakistan is piloting a bag-mediated filtrated system for environmental surveillance at 12 sampling sites in 10 cities, including Peshawar, Karachi, and Quetta, where wild poliovirus is ongoing. This filtration system allows for more fluid collection and filtration of environmental samples and dramatically increases the potential to rapidly detect any poliovirus present in the environment. Kenya and Mexico are also piloting the bag-mediated filtrated system. In Afghanistan and Pakistan, mobile phone platforms are being used to increase demand for the polio vaccine in communities most at risk and are allowing polio teams to use text messaging to measure vaccination awareness and distribute information to increase vaccine uptake. In Afghanistan, mobile technologies are being used to monitor program quality, submit real-time campaign data, and facilitate communication between vaccinators.

Innovations are not limited to scientific discoveries or new technologies. Both Afghanistan and Pakistan are implementing management and financial innovations. Both countries have appointed polio coordinators to lead and oversee polio eradication activities and are using dashboards to monitor immunization campaign preparations and implementation at the local level. Direct disbursement provides vaccinators quick, easy access to payment upon completion of their work. This ensures that vaccinators are rewarded and motivated to continue their heroic work.

It is critical for polio partners to continue to innovate to strengthen and sharpen our tools to achieve and sustain polio eradication.





Thank you for all you do to protect children's health and for your continued efforts to improve the program through scientific and programmatic discovery.

A handwritten signature in black ink that reads "Thomas R. Frieden". The signature is fluid and cursive.

Thomas R. Frieden, MD, MPH
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Chairman, Polio Oversight Board