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WORLD

## The World Is Still Battling Polio. What That Warning Means for Covid-19.

The world was close to ending polio, but misinformation, religious beliefs and economic grievances have fueled resistance to inoculations. The coronavirus pandemic added more delays. The struggle of one of the world's largest vaccination campaigns offers a warning for the fight against Covid-19.



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PESHAWAR, Pakistan—After decades of work, polio had been wiped out almost everywhere in the world. All that was left were pockets in Afghanistan and Pakistan. Medical experts hoped 2020 would be the last year that the main form of the virus, which can permanently paralyze or cause death, posed a threat. The coronavirus pandemic put a halt to that progress.

In March, house-to-house vaccination teams working across Pakistan were forced to stop their work because of Covid-19. As a result, polio resurged, including a mutated form of

the virus. It has now been detected in samples taken from sewers in 74% of Pakistan in late 2020, up from just 13% in early 2018.

“Now the virus isn’t just in select pockets. The risk is everywhere” in the country, said Rana Safdar, the doctor in charge of Pakistan’s polio campaign.

The decadeslong battle to eradicate polio around the world is one of the most ambitious and expensive public-health campaigns in history. The mass-vaccination drive and its progress toward arresting a malady that has disabled or killed millions of people point to the success possible in the efforts to inoculate people around the world against Covid-19.

But even with an established vaccine, billions of dollars invested and international support, the polio effort has struggled. And in a cruel twist, the coronavirus pandemic has pushed the polio fight off course.

“The pandemic has been at least a one-year setback” to the polio eradication goal, said Bill Gates, whose charitable foundation is a major funder of the effort. Economic impact

Vaccination teams resumed polio inoculations in Pakistan in September. They confronted both a reinvigorated polio virus and psychological resistance to vaccinations worsened by grievances over the economic damage of Covid-19 lockdowns. Those problems added to the old hurdles of misinformation and concerns the polio drops violate Islamic dietary laws or were a conspiracy to harm Muslims. Sitting on the steps of a kitchenware shop in a polio hot spot in the northwest city of Peshawar, Watan Dost spoke to a vaccination team accompanied by an Islamic cleric for an hour as they tried to persuade him to allow his four children to get the free inoculation.

They failed. “It is fate, God’s will. If my child gets paralyzed, so be it,” said Mr. Dost. “Why would I give my child medicine if he isn’t sick?”

Around him, inner city Peshawar’s winding alleyways provide the conditions in which the virus thrives: rows of rickety homes packed with large extended families, and open sewers running alongside footpaths where children, some barefoot, play.

The virus is carried in feces and primarily infects young children after they touch contaminated water or dirt and then put their fingers in their mouths. From there, the virus can invade the brain and spinal cord, leading to paralysis and, in some cases, death. Adults are less at risk of infection, because of less exposure to the sewage and a greater likelihood of being vaccinated.

Historical polio outbreaks share similarities with the current coronavirus pandemic. In

the late 1940s, polio waves in the U.S. disabled an average of more than 35,000 people each year, according to the Centers for Disease Control and Prevention. Parents were frightened to let their children play outside in the warm summer months when the virus was spreading most. Infected children were isolated.

Public-health officials instituted travel restrictions between affected cities and quarantines in places where polio was diagnosed, and they learned that asymptomatic carriers could spread the virus. During a 1934 epidemic in Los Angeles, 5% of doctors and 11% of nurses who treated polio patients contracted the disease. Officials say that, as with polio, Covid-19 won't be tamed until vaccines are distributed globally with near universal coverage, especially with the rise of new viral variants that are spreading quickly around the world. The March of Dimes—founded by President Franklin Delano Roosevelt, who himself was diagnosed with polio—funded development of the first vaccines, which were created in the 1950s. Polio numbers in the U.S. fell off dramatically, with the last recorded case in 1979, although it remains standard for children to be inoculated.

Around the world, infections were still widespread. Rotary International and the United Nations established the Global Polio Eradication Initiative in 1988. That year, 350,000 people across 125 countries were paralyzed by the infection. The group aimed to make polio the second human disease after smallpox to be vanquished. The alliance was joined later by more partners including the Bill & Melinda Gates Foundation, and it has poured more than \$17.3 billion into the cause, including \$1.2 billion for efforts in Pakistan since 2016.

By the start of 2020, the virus had been largely eliminated. Vaccination teams were pushing through final areas that weren't protected, especially because incomplete coverage can lead to both a resurgence of the main and most dangerous form of the virus, which is called the “wild” virus, and also a mutated virus that can be fostered by the type of vaccine used outside the U.S. and other developed countries.

That vaccine uses a weakened, live virus, and is given by drops into the patient's mouth and requires multiple doses. (In the U.S., the vaccine uses a killed virus that is injected, also with several doses.) The oral vaccine is easier to administer and doesn't require needles, and provides better immunity protection for the community in areas where the virus is widely circulating.

### Mutated virus

But the oral vaccine puts the weakened live virus back into sewage—emitted by the inoculated person—that under rare circumstances can mutate and cause harm to children who aren't immunized. While the wild form of the virus remains only in Pakistan and

Afghanistan, the vaccine-derived, mutated form has been a growing danger there and in other countries, mostly in Africa. In November, the World Health Organization issued an emergency use recommendation for a new oral vaccine that uses a form of the live virus less likely to mutate and become a danger.

In Pakistan, wild cases surged in 2019 amid misinformation that stopped inoculations. In 2020, after vaccination campaigns were postponed or teams temporarily shifted to focus on the Covid-19 pandemic, the wild cases spread to new parts of the country and vaccine-derived cases showed an alarming increase.

An independent panel of global-health experts who monitor polio eradication efforts issued a report in July warning the program in Pakistan needed to broaden its approach, such as by offering services in addition to distributing the polio drops. “If those changes do not get rolling, the wheels will come off the Pakistan bus,” the panel wrote.

Late last year, officials with the Global Polio Eradication Initiative warned that resources diverted to fight Covid-19 had left the global polio effort’s budget in 2020 and 2021 short by up to \$400 million. Online misinformation

When efforts restarted in Pakistan, more than a quarter of a million vaccinators, mostly women, fanned out across the country. They navigated slums and trekked through rural areas, waded through monsoon floodwaters and climbed to remote mountain villages to reach the nation’s 40 million children under 5 years old.

One of their biggest problems was online misinformation, especially on Facebook and WhatsApp. Pakistani officials said elements of the misinformation appear organized, and that it soars when scheduled vaccination campaigns are on.

Antivaccine material from overseas, including from the U.S., subtitled in the local language of Urdu, is also passed around. Videos originating in Peshawar in April 2019 showed children fainting, vomiting and holding their stomachs in pain after receiving polio drops. The fake videos boomeranged around the country on Facebook and WhatsApp.

Parents of children who had received the inoculation that day panicked, rushing 45,000 children to hospitals in Peshawar, overwhelming the facilities. Pakistan had to suspend its campaign for eight months while it assured parents that no children had died in Peshawar that day. Still, some cling to that myth.

“India eradicated polio when there was no WhatsApp, Twitter, Facebook, and no Taliban,” said Aziz Memon, head of Rotary in Pakistan, referring to the added challenge

presented by the misinformation. The neighboring country, which shares similar levels of poverty and has more than six times the population, eliminated the polio virus in 2011. Last year, the wild virus was also declared eliminated from the continent of Africa.

Facebook announced this week that it will now remove certain false claims about vaccines, including posts saying vaccines aren't effective or dangerous. It was already deleting content that could lead to offline harm, such as posts that called polio vaccinators CIA agents.

Pakistan's polio program has a team countering digital falsehoods in real-time and pushing positive messages about the vaccine on social media.

Suspicious about vaccines intensified after it was revealed a Pakistani doctor, under the guise of a house-to-house inoculation campaign against hepatitis B, helped the CIA track down Osama bin Laden. U.S. Special Forces killed bin Laden in 2011 at the house in northern Pakistan where he was hiding.

Militants and hard-line Islamic clerics had said for years that vaccinators were spies. In the years following, dozens of members of polio vaccination teams were killed. The Pakistani Taliban banned vaccinations around the northwest border, which they controlled at the time.

Though the danger is reduced now because of Pakistani counterterrorism operations, some 100,000 police and military personnel provide security for each polio vaccination campaign.

Across the border in Afghanistan, the virus is less pervasive because the country is so rural. But the Afghan Taliban have banned house-to-house vaccination campaigns, fearing they could be cover for espionage.

## Religious qualms

Islamic clerics also accompany the vaccination teams, because some parents believe the vaccine contains ingredients prohibited in Islam, or that the vaccine is a Western ploy to sterilize Muslims. Distrust of the U.S. and of Mr. Gates's involvement is rampant.

"The Quran is burned in the West, but yet they're giving us polio drops? If they don't respect our faith, why would they do this for us?" said Lal Zada, a small-time businessman, while visited by vaccinators at his home on the outskirts of Peshawar. "There are a hundred other diseases. What makes us suspicious is this focus on just one illness."

Especially resistant are ethnic Pashtuns on both sides of the Pakistan-Afghanistan border, including in Peshawar. The largely poor communities have been caught in America's war on terror, sandwiched between U.S. airstrikes from above and Taliban militants on the ground.

Their situation has bred anger and suspicion at the U.S. and their own government for not protecting them from violence or providing basic public services like sewers. Far south of their homeland, in the multicultural city of Karachi, it is the migrant Pashtun community that most often refuses the inoculation.

"One has to really communicate very carefully," said Susan Goldstein, a health-communication expert at the University of the Witwatersrand in Johannesburg, South Africa, and a member of the panel of global-health experts who monitor polio eradication efforts.

"You can't keep coming 10 times to the door and saying you have to have polio drops, and they don't have soap and water," she said. "They would like to have some other services."

Some poor communities have found they have new leverage when vaccinators come calling. Teams in Pakistan have received demands for electricity, roads and schools, as well as other health services, before residents would agree to vaccinations. One common demand: the \$70 lockdown relief Pakistan's government promised as part of the country's fight against the coronavirus, which was disbursed to more than 15 million families. Pakistan has more than 556,000 infections and more than 12,000 deaths from Covid-19.

Inside a wooden hut on the edge of Peshawar where he runs a tiny grocery store, Babar Nadeem brushed off vaccinators and a local cleric who teaches the Quran to the shopkeeper's two children under 5. One of the children, Mr. Nadeem said, requires treatment for a urinary problem.

"More important than polio is the operation my kid needs, but the hospital won't do it. More important are clothes for my children," said Mr. Nadeem. "Even if they kill my children in front of me, I won't let them have the vaccine."

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