

Polio's Deadly Resurgence: A Lesson From Nigeria

How religious friction and tragic under-development reignited a nearly conquered scourge

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Saidiku Ali is as buff and sculptured as any athlete. His neck is large and corded with tendons. His shoulders gleam in the harsh morning light as the 25-year-old's muscled arms flex and churn like an oiled machine. But the picture is incomplete. Those beautiful arms end in dirty calloused hands, which are stuffed into cheap plastic sandals. Ali's handsome face is overshadowed by narrowed eyes that are hard and angry and very old. And his legs are carelessly folded, like cloth, beneath a solid torso.

Ali had polio when he was a child and his legs are paralyzed and flaccid, unable to bear his weight. He is one of scores of young men who propel themselves through Nigeria's Kano City traffic on crude wooden skateboards.

His worthless limbs have limited every aspect of the life Ali wanted to lead. Instead of starting a business, the young man sells phone cards in traffic. Instead of becoming a decorated soldier, he drags his body between the cars and motorcycles honking and lurching down congested Murtala Mohammed Road. He dreams of starting a family, but for now he keeps uneasy company with a community of polio victims who take refuge on the same concrete traffic island.

"This life is an affront to my dignity," he says. "I don't want to do this. I want to hire boys to sell phone cards for me, but I need money . . . to start a business."

The Capital City of a Scourge

Northern Nigeria is home to tens of thousands of polio victims, and Kano City is their capital. The south and central parts of this sprawling, chaotic country have long complied with inoculation efforts, and are all

but free of the dreaded virus. But the conservative north has willfully lagged —behind, at its own painful cost.

In the early 2000s, many Muslim and community leaders in northern Nigeria began warning that the polio vaccine was so unsafe that it could be "un-Islamic." Just one dose of three bitter drops could lead to sterilization or cause HIV/AIDS, they said. Religious and then secular officials mulled whether the drops might be part of a Western plot to limit Muslim births -- a theory fed in part by the U.S.-led invasion of Afghanistan and Iraq. The fear also played to the often-violent friction between Nigeria's Muslim and Christian communities. Local newspaper editorials warned the oral vaccine could "wipe out a whole generation."

In this environment, the governor of Kano State in 2003 officially halted polio vaccinations, saying the community lacked confidence in the drops. To the horror of public health officials and the polio community, vaccinations were suspended for nearly a year. A local campaign by religious leaders discredited not just the vaccine, but the aid organizations that distributed it.

"People used to yell at us on the street, and they would throw rocks at us in traffic," said one Nigerian who worked for the UN Children's Fund Unicef in Kano in 2003. "It was very tense. We talked about painting the [car] doors white." Unicef teams were blocked as they tried to enter villages and settlements, often by men waving sticks. Today, she said, it is "very painful" to see so many crippled children in areas where the vaccines had once been used to effect.

The damage was catastrophic: over the next few years, 3,372 children were crippled or killed by polio in Kano alone, according to detailed World Health Organization records.

And between 2003 and 2007, 20 previously polio-free countries were reinfected with polio viruses originating from northern Nigeria, exposing just how fragile the shell of immunity really is. The global cleanup of the Kano strain of polio has cost hundreds of millions of dollars.

"This was awful, just awful to watch," said Tayo Oeofineade, who coordinates Rotary International's Nigeria campaign to route polio. Rotary established its PolioPlus program, aimed at eradicating the disease, in 1985, and has been especially active in underwriting small vaccine efforts in Nigeria and other poor countries.

Heartbreaking Consequences

It wasn't supposed to go this way. The World Health Organization's Geneva-based polio office declared in 2002 that the virus had been beaten back to three remaining stronghold countries (Pakistan, India and Nigeria) and said polio could soon join smallpox in extinction. Months later, five predominantly Muslim states in northern Nigeria halted their vaccination programs. Four of the five soon resumed vaccinating. But Kano state's suspension of a year brought swift damage, as heartbreaking as it was predictable.

"The Islamic faith is very fundamental to the affairs of the people . . . and their opinion influences a lot of things in the community," said the Kano State Governor, Ibrahim Shekarau, who formally suspended the inoculations in mid-2003, in part because the people had become so afraid of it. "We had to choose the evil of total rejection forever or the evil of temporarily stopping the program to convince the people" that the vaccine was safe enough to accept. Shekarau has since been re-elected, and even waged a credible campaign for president.

"I wouldn't want to say I was under a pressure, it was rather a pleasure to exercise the responsibility of the mandate given to me," said Shekarau, who does not regret his decision. "Even if it's [fatal to] just one of 10 million people, we felt we needed to be sure."

That decision was met with anguish by the vast polio-battling community, which brought exceptional pressure to bear from diplomatic, political and medical circles. But most important was an unprecedented rebuke from the King of Saudi Arabia, who banned Nigerian Muslims from Mecca unless they took the vaccine at the airport.

In 2011 the World Health Organization called Nigeria "one of the most entrenched reservoirs of wild polio virus." Nonetheless, the government has committed to an aggressive strategy, and new infections have dropped 95 percent, with 21 in 2010, compared with 388 cases reported in 2009, according to the World Health Organization.

A Highly Infectious Virus

Poliomyelitis is a highly infectious virus that lives in the digestive tract and attacks the nervous system, causing paralysis in hours or days in one of every 200 children infected. It is marked by a severe and sustained high fever, muscle weakness and severe constipation. The child is highly infectious at this stage, and has, unknowingly, been so for days before the symptoms. The virus is easily transmitted through feces, dirty water and direct contact.

There are two vaccines, oral and injected. They were developed by competing American virologists Albert Sabin and Jonas Salk in the 1950s-60s. Both were miraculous advances in public health: the injected Salk vaccine, which is largely used in the United States, where polio has been eradicated; and the oral Sabin vaccine, which is easier and faster to administer but will be effective only if it is kept cold. Refrigeration is a problem in the world's poorest communities, where electricity is unreliable.

Vaccination campaigns look about the same around the world: young women volunteer to be eradicators in their own neighborhoods. They are trained to overcome family objections, administer the vaccine and collect the detailed information required of every single house. Sometimes vaccination stations are set up near schools or wells, but mostly the eradicators visit the mud-walled huts and tiny cinderblock rooms that shelter the fortunate poor around the world. Each vaccinated child is identified with a black mark on his or her finger.

The UN estimates that nearly 20 million volunteers around the world have vaccinated 2.5 billion infants and toddlers in the last 20 years. In 2011, there are only six endemic countries, but experts quietly admit that more than a dozen countries could develop new cases as immunization campaigns soften.

That's why the virus must be eliminated, rather than isolated in unreachable areas. The World Health Organization's polio chief, Bruce Aylward, warned this year that the idea of merely controlling the virus was a "seductive mistake."

The eradication plan, drawn up by the Global Polio Eradication Initiative, was developed with redundancy, yet there are significant weaknesses in the system: The young vaccinators are too likely to take no for an answer, leaving unvaccinated children vulnerable to the disease and as infectors of others as well. The information collected from every house is often incomplete or inaccurate, making it impossible for experts to predict an outbreak or plan its response. And the oral vaccine itself is fragile, requiring constant refrigeration.

Legs 'Taken by Spirits'

The reticence of her vaccinators exasperates Unicef's Josephine Kamara, the stalwart consultant from Sierra Leone who oversees social outreach and data collection for much of Kano.

"Data collection and analysis is really an issue here," Kamara sighed in an October 2010 interview after a daily statistics meeting. She estimates that more than half of the Kano data are inaccurate, either

because the vaccinators don't know how to fill out the forms properly, or fudge them to hide missing information.

Written records are the foundation of epidemiology and without it, it will be impossible to achieve complete protection against a disease, experts from the U.S. Agency for International Development and Unicef say.

The world's poorest communities are a petri dish for ravaging childhood diseases. Poor sanitation means that street gutters overflow with trash, human waste and fetid green-scummed water so noxious it is also breeding cholera, typhoid, malaria, hepatitis and deadly diarrhea. Clean water is so scarce that washing -- whether of hands, clothing or dishes -- is difficult. Add to this women's restricted role in society and limited health care and the social and environmental factors click into place. Health conditions are so ghastly that many mothers refuse repeated attempts to inoculate against polio because they want to see a similar effort on killers like malaria and measles.

But ignorance and superstition can be as lethal as contaminated drinking water. In some isolated and uneducated pockets of northern Nigeria, victims' legs are "taken by spirits" or withered by a punishing god. Little can challenge those beliefs.

Mobility

Aminu Ahmed Tudunwada is chairman of the Polio Victims Association, which trains crippled men to build hand-cranked bikes and modified motorcycles to help them get around. The metal shop is largely underwritten by international donors; while these vehicles typically cost less than \$150, few can come up with such a sum.

Association members also go out on polio vaccination days with local eradicators to urge parents to accept the oral vaccine. There are so many victims, he said, that the stigma has worn off.

"I tell them to look at me -- don't let your son be like this," says the remarkably agile Tudunwada, who gets around by swinging his body forward using "crutches" consisting of wooden blocks about three inches high. "I tell them, 'You are standing while I am on the ground.' "

By far the most powerful influence in northern Nigeria is the sultan of Sokoto, the revered leader who presides informally over 70 million Muslims. After the philanthropist Bill Gates and other figures prevailed upon him, the sultan vaccinated a niece in public to prove its safety. The powerful emir of Kano did the same, well after the crisis. But neither spoke out against the 2003 vaccine ban.

Although resistance to the polio vaccine began to soften in some communities, the Global Polio Eradication Initiative and other groups were concerned about seemingly half-hearted efforts by the national and regional leaders. Bill Gates -- by now the rock star of polio -- drew huge crowds during a visit to Abuja, Kano and other Nigerian cities.

But little changed. And none of this is cheap.

The initiative, founded in 1988, spends about half a billion dollars annually to fight the virus around the world. The Gates Foundation pledged more than \$300 million in 2010, and Gates has promised the foundation will continue its support for years to come. Other money comes from Rotary International, the U.S. Centers for Disease Control and Prevention, the U.S. Agency for International Development, the UN Foundation, the European Development Fund and the World Health Organization. Unicef is most often the power on the ground, training locals to administer the polio drops to children in their own villages.

Others wonder, however, whether polio can ever be overcome.

Children do -- albeit rarely -- contract polio from the vaccine. The infected are often capable of spreading the disease before they show symptoms. And so many countries said to be polio-free are in fact vulnerable if the virus surfaces in under-vaccinated areas, although in many cases, polio will briefly flare but not spread.

Take those 20 countries that were reinfected by the Kano strain. How could the virus catch hold anew if the vaccinations were properly administered? If so many countries have such a thin veneer of protection, how many more are vulnerable? In 2010 Democratic Republic of Congo and Tajikistan unexpectedly exploded with polio. Should epidemiologists be concerned about epidemics during the Hadj, or any large, dense gathering? For that matter, what about the U.S. -- free of infectious polio since the late 1970s -- where very well-to-do families now refuse to vaccinate their children out of health concerns?

"The child that is paralyzed cannot play soccer or go to school without help," said Dr. Muhammad Ali Pate, Nigeria's executive director for primary healthcare development. "Even if he is educated he cannot achieve his full potential. You cannot help but hope it will be eradicated from this world."

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