

Hunting Down the Last of the Poliovirus

GENEVA—One early morning last month, millions of people across India, from the snow-peaked Himalayas to the deserts of Rajasthan, set off by foot, camel, bike, car, or helicopter to run polio vaccination posts in 650,000 Indian villages. By the time this army of volunteers arrived home at the end of the day, 127 million children under the age of 5 had been immunized against this crippling disease. "Everybody said it just couldn't happen. And, yet it does," says Harry Hull, chief of the World Health Organization's (WHO's) Polio Eradication Program. Indeed, while WHO's headquarters is preoccupied with the coming vote for a new director-general (see main text), initiatives such as the Polio Eradication Program show that WHO's foot soldiers can make a huge difference to the majority of the world's population without adequate health care.

Since 1988, when the World Health Assembly declared its aim to eradicate polio globally by 2000, the number of cases has been slashed by 90%, from an estimated 350,000 cases to about 35,000 today. But with just 3 years of the initiative left to run, the job will get increasingly tough as health workers track down remaining pockets of the virus in some of the most remote, poor, and war-torn corners of the globe. "This is one we can win," says Steve Cochi, director of polio eradication activities at the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta. He says the Polio Eradication Program "can make people who work in public health feel like they can do something meaningful."

At first, the campaign to rid the world of a disease that has left some 10 million to 20 million people paralyzed did not seem to be making an impact. But in 1995, WHO and its partner, the United Nations Children's Fund (UNICEF), adopted the new strategy of blitzing the entire child population of a country in a single day. In 1996, such National Immunization Days vaccinated more than 420 million children—almost two-thirds of the world's children under five—against polio. These dramatic campaigns captured the imagination of the world and have even persuaded hardened fighters in war-torn countries such as Afghanistan, Sudan, and Sri Lanka to stop fighting for a day so that their children can be immunized.

In these campaigns, which are coordinated by WHO, the other main partners have different but complementary functions. UNICEF provides the oral polio vaccine, the CDC offers technical expertise, and the charity Rotary International, which has contributed \$400 million to date, mobilizes millions of volunteers

to carry out the mass immunization campaigns.

Only a small number of diseases are suitable for such an eradication program. Polio is a perfect candidate because the virus infects only humans, is carried in the body for a short period of time, and has an effective intervention. "We have great vaccines against polio," says Hull. The WHO-led campaign uses the live, attenuated oral polio vaccine developed by Albert Sabin in 1961, rather than Jonas Salk's 1955 inactivated injectable vaccine, because it is cheap—8 cents a dose—can be easily administered by mouth by an

untrained volunteer, and produces high levels of intestinal immunity which blocks the replication of the disease. Its disadvantage is that in approximately one in 3 million cases the vaccine will produce the disease it is designed to prevent. The Salk vaccine, while it protects a child from paralysis, is less effective in preventing the transmission of the wild virus. "We do not think that, in the world as we know it today, eradication of wild poliovirus is possible with the Salk vaccine," says Hull.

As the possibility of eradication nears, the campaign's partners know that failing to wipe out the virus would make all their efforts thus far futile. If not treated, the last pockets of the virus could quickly spread again.

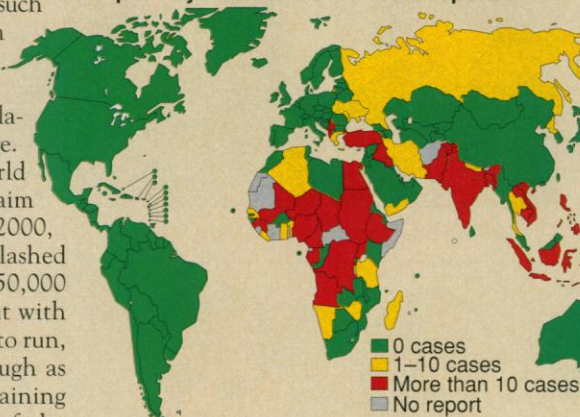
"The poliovirus is one day's journey from any spot on the globe," says Hull. "So, countries that have been free of polio for years must continue immunization until the entire world is free of polio." The United States, for example, spends \$230 million annually immunizing children for a disease it has been free of for 20 years. Eradicating polio will save an estimated \$1.5 billion in immunization, treatment, and rehabilitation around the globe every year. WHO estimates that between \$600 million and \$800 million will be needed to complete the job of eradicating polio by the turn of the century.

Buoyed by their anticipated success, WHO and its collaborators have started planning a new campaign to eliminate measles, one of the world's five major child killers. Such a campaign will be much more difficult than eradicating polio, because an injectable vaccine will have to be used. But the team is convinced that, with determination and strong, committed leadership from WHO's new director-general, WHO could begin the new millennium with another remarkable public health achievement in sight.

—Lisa Schlein

Lisa Schlein is a journalist in Geneva.

Global reported incidence of indigenous poliomyelitis 1996: 3755 cases reported



Lurking menace. WHO hopes to wipe out these lingering pockets of polio by 2000.

which comes from mandatory member contributions—will be only \$843 million, roughly equal to the operating expenses of a medium-sized teaching hospital in an industrialized country. And this modest pie must be divvied up among some 15 major WHO programs, ranging from nutrition and food safety to communicable disease control. To make ends meet, most WHO programs cover part, or

sometimes most, of their costs by seeking so-called extrabudgetary funds, from individual donor countries or other agencies. These extra contributions will make up an additional \$958 million in 1998–99, or 53% of WHO's total spending. "The current proportion of the budget earmarked for specific programs is way too high," says Jaime Sepulveda, director-general of the National Institute of Public Health

in Cuernavaca, Mexico.

To make matters worse, some member countries have recently expressed their displeasure with WHO's management by withholding funds from programs generally regarded as worthy of support. "We have lost considerable contributions," says Paul Van Look, associate director of a special program on human reproduction re-