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MEDICINE

WHEN THE VACCINE CAUSES THE POLIO

EXPERTS SEEK TO ELIMINATE THOSE FEW CASES THAT ARE STILL CAUSED BY INOCULATION

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ONE OF THE MOST SUCCESSFUL PUBlic-health programs ever conducted, without doubt, was the U.S. campaign against polio in the 1950s and '60s. In less than a decade, the withering scourge that had at one point struck nearly 60,000 children a year was all but eradicated from American shores. Almost forgotten in the decades since, however, has been the terrible price a small number of children pay as a by-product of the protection the rest of the population enjoys. According to the Centers for Disease Control and Prevention, six babies a year, on average, contract paralytic polio from the very vaccine that was supposed to prevent it.

Over the past few years, some parents and their pediatricians have waged a grass-roots effort to change the way 4 million U.S. children are vaccinated each year. Their struggle has reawakened a 40-year-old scientific argument between two giants of preventive medicine: Dr. Albert Sabin and Dr. Jonas Salk. Last week the parents' campaign reached the highest levels of health policymaking when a CDC panel voted on whether to change U.S. policy.

The panel faced a difficult dilemma. For 30 years, doctors have had a choice between two competing polio vaccines. The first, pioneered by Salk, is made from viruses that have been inactivated or "killed." It protects those who are vaccinated but does not stop them from harboring live viruses in their intestines. Should they encounter polio "in the wild," they could become silent carriers and pass the pathogen on to others who have not been inoculated. If polio were to break out--as it did in the U.S. in the '50s, and as it has right now in parts of India--the Salk vaccine would not protect the population at large.

By contrast, the second preparation, which was championed by Sabin, is made from weakened--yet not entirely docile--strains of the polio virus. It provokes a more powerful immune response. If it doesn't give the recipient polio (and in 99.99996% of cases it does not), it not only protects those who are inoculated but also prevents them from passing on any "wild-type" infections. That is small consolation to parents like Carol Philips of Brooksville, Florida. Her son Ryan, 10, developed polio soon after receiving the Sabin vaccine. "If I had chosen the other," Philips says, "Ryan would be fine."

It was the Sabin vaccine, however, that actually eliminated polio epidemics in America. Today, of the 20 million doses of polio vaccine on the market, less than 500,000 are prepared from "killed" viruses. In fact, there have been no home-grown cases of naturally occurring polio in the U.S. since 1979. With the chances of a major outbreak so remote, the U.S. could switch to a killed-virus vaccine. There's a catch, however. There is no way to prevent someone who is just developing the infection from arriving in the U.S. and spreading it. One in five American children is unvaccinated for polio. These children, or anyone with a weakened immune system, could contract the disease. If the U.S. relied only on the Salk vaccine, a new epidemic could be unleashed.

After weighing the risks and benefits, the CDC panel decided to split the difference. Their recommendation, which is slated to become official policy in 1996, is to inoculate infants twice with the killed-virus vaccine at two and four months, then twice more with the live-virus vaccine before the age of six years. Infants, whose immune systems are not yet very strong, do not get exposed to the slightly more dangerous preparation. Older children, who have developed tougher constitutions, will get the benefits of full protection. Experts expect that the change could prevent most vaccine-associated cases of polio.

It will be a tough sell. As Dr. Ram Yogev of Children's Memorial Hospital in Chicago points out, the Sabin vaccine worked so well that health workers may resist the change. Says Dr. Yogev, who favors the change himself: "Physicians respect Salk. But we love Sabin because we saw the epidemic. We were a part of it, and suddenly it disappeared."

Inconvenience and expense are also factors. The Sabin vaccine comes in a sweet-tasting liquid, but the Salk vaccine can only be injected. Parents and youngsters will not welcome another shot in the already packed vaccination schedule. The injections cost more ($4.99 a dose in the public market vs. $2.27 for the live virus) and may mean another trip to the doctor. Some are worried that the immunization rate, particularly in inner cities, will drop.

One person who has no doubt that the CDC made the right choice is 10-year-old Ryan. Although plucky enough to play Little League baseball with a pinch runner, he has his down moments. "I hate this polio," he says. "Even if it was for just one day, I wish I could run." That may never happen, but if all goes as expected, fewer children will find themselves in Ryan's shoes.

--Reported by Scott Norvell/Atlanta and Alice Park/New York