Paralyzed Children

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By Sarah Gibbard Cook

In a mountain village in Peru on Friday morning, August 23, 1991, a two-year-old boy woke up with a fever. His muscles ached. The next day his legs were weak, and even after the fever cleared, he could not walk. Local health workers tried to treat him, but nothing helped. In September a Rotarian doctor helped transfer him to a hospital in Lima, 250 miles away. Laboratory tests confirmed the doctor's guess. Luis Fermin Tenorio Cortez had poliomyelitis.

It was the last case of polio in the Western Hemisphere. After a year passed without another case, a Peruvian Rotary leader said, "It's a dream come true. All our hard work has paid off."[1] The cooperative labors of government workers, Rotarians, and leaders of international agencies and other organizations meant that the disease that left Luis with an uneven walk would probably never threaten his children or grandchildren in the twenty-first century.

Probably. Polio still present anywhere in the world could always spread back to the Americas. Health experts estimated that in 1992 paralytic polio struck 136,000 people in Africa, Asia, and eastern Europe. Every four minutes a family mourned the death of a child from polio or faced the prospect of the child's lifelong disability. The unprecedented partnership that banished polio from the Americas still had work to do.

"This will be the stuff of history 500 years from now," the director of the Task Force for Child Survival and Development said in 1995. "It will be recorded as the time when the world made the conscious choice to make science, health, and knowledge available for not just some children, but all children. To have lived at that time is heady stuff."[2]

In industrialized countries like Canada and the United States, a few thousand miles north of Luis's village, many people would have been surprised to hear that children still got polio at all. To them polio was a distant memory, though some still bore its traces. If the partners battling polio had their way, polio would be no more than a memory anywhere in the world after the year 2000. If so, history would remember poliomyelitis as a disease of the twentieth century—before 1900 few people even knew that such a disease existed.

Fear and Mystery

In most times and places in history, a few babies suddenly lost the use of an arm or a leg, sometimes after a bout of fussiness or fever. An ancient Egyptian stele depicts a priest with a withered leg. The Greek physician Hippocrates described attacks of paralysis that struck patients in summer or late autumn. The clumsiness attributed to the Roman emperor Claudius may have followed a childhood illness. Sir Walter Scott lost the use of his right leg after a fever in infancy. Although such conditions were not uncommon, few people saw them as the mark of a distinct disease. Instead, paralysis seemed to be the price a child might pay for teething or sitting on damp ground.

Suddenly, beginning in the late nineteenth century and increasing through the first half of the twentieth, "infantile paralysis" began to strike Europe and North America in epidemics. Small outbreaks in Scandinavia starting in 1881 were followed in 1894 by a larger one in the United States: 132 cases in the state of Vermont. More clusters of paralytic illness erupted in Sweden about the turn of the century.[3]

In 1905, the year the first Rotary club was formed, a devastating malady struck hundreds of children in Sweden. The initial illness was typically brief, with fever, sore throat, headache, and vomiting. If it had stopped there, no one might have noticed. But many of the feverish children, after three or four days, woke up to find that they had lost control of one leg. The leg still had feeling, but instead of moving in response to the child's command, it hung flabby and useless. The fever soon cleared up, but the tragic paralysis remained.

The epidemic spread to villages throughout Sweden and into Norway. Defying traditional assumptions about epidemics, it touched cities only lightly and did the greatest damage in the most remote rural areas. At least 1,031 people became ill within the year.

During the next decade more and more cases were reported in different parts of the United States. New York City had a large outbreak in 1911 and an even larger one in the summer of 1916, with more than nine thousand cases reported in the New York City area alone. The 1916 epidemic spread across the northeastern United States, sparking mass hysteria wherever it appeared. New Yorkers swatted flies and screened windows. Frantic authorities suspended ferry service and restricted travel. They put placards on houses, quarantined families, sprayed the streets, and closed the beaches. Still the numbers grew. Some six thousand people died and twenty-seven thousand were paralyzed before the epidemic subsided on its own in the autumn.

Larger epidemics broke out, summer after summer, in more and more parts of Europe and North America. One week a child was healthy, the next week mildly ill, and the next week paralyzed for life. The mystery magnified the horror, for polio did not behave like any known disease. It made its first appearance in the most economically

advanced nations, and it attacked middle-class and wealthy families as often as poor ones. Even the most influential citizens had no means of protection. In an era that considered "public health" a synonym for "sanitation," polio's egalitarian menace was so unbelievable as to be denied in the face of all the evidence. Not until Franklin Roosevelt became president of the United States did most Americans admit that polio could strike the cleanest children and adults in the most respectable of homes.

One could become ill without any known contact with anyone else affected by polio. If polio was caused by germs, how did they spread? One suspected culprit was the stable fly, which had a sharp bite and sometimes left animal stables to invade houses. The insect theory had proved the key to controlling yellow fever, and it seemed to explain why polio struck chiefly in the summer. It prompted screening and fly-swatting campaigns and, after World War II, spraying with the pesticide DDT. Another theory, that airborne droplets carried poliovirus into the nose and then straight to the central nervous system, inspired a program to spray zinc sulfate solution into several thousand noses in Toronto, Canada, in 1937. Since neither theory had any basis in fact, preventions based on these theories did nothing to protect anyone from paralysis.

As epidemics multiplied, the age of the victims crept upward. Franklin D. Roosevelt contracted infantile paralysis in 1921 at the age of thirty-nine. New York City statistics showed the change between the huge epidemics of 1916 and 1931. In 1916 only one victim in twenty was ten years old or older; fifteen years later that age group accounted for one case in six. During World War II outbreaks occurred among British and American troops, with no children involved. "Infantile" was no longer an apt description. In the 1940s popular usage shifted to the medical term "poliomyelitis," or "polio" for short.

Polio in the United States peaked in 1952, with nearly fifty-eight thousand cases reported. Australia and other developed countries suffered epidemics as well. Many adults in the twenty-first century walked with braces because they had had polio as children. A greater number remembered the way frightened parents kept them home from swimming pools and movie theaters each summer.

By the early 1950s, scientists had begun to unravel the mysteries: what caused polio, how it spread, why people of all income levels seemed equally vulnerable, and why epidemics first occurred in the most prosperous countries. The great remaining mystery was how to protect children from the tragic effects of polio.

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[1] Gustavo Gross, quoted in Cary Silver, "Conquering Polio in the Western Hemisphere," *The Rotarian*, Nov. 1992, p. 40.

[2] Bill Foege, tribute to Jim Grant, in UNICEF House lobby display, New York City, March 1995.

[3] Historical data primarily from John R. Paul, *A History of Poliomyelitis* (New Haven, CT: Yale University Press, 1971).