Century after first major US polio outbreak, worldwide eradication is eyed for 2016

By Jenny Wagner, staff writer  Jun 12, 2016  0

Evesham resident Lawrence Horn uses grab bars to help him get around the house. He developed post-polio syndrome decades after he had polio as a child.

Historic polio epidemic hit the northeast 100 years ago this summer

The summer of 1916 marked the first major polio epidemic in the United States.

The outbreak became an epidemic in New York City in June and spread throughout the northeast in the following months, leading to 27,000 cases and some 6,000 deaths, said polio survivor and history professor Daniel Wilson, who has written books about polio and its impacts. An outbreak occurs when a higher than expected number of cases of disease occur, often suddenly, in a limited geographic area, according to the U.S. Centers for Disease Control and Prevention. An outbreak becomes an

The summer of 1953 was just like any other before Lawrence Horn came down with polio. His Union, New Jersey, family was down the shore at their place near Lavallette. It was right on Barnegat Bay. Horn said, with millions of mosquitoes.

Horn, then 9, got sick in July or August and was taken to an isolation hospital. His right leg, left arm and abdomen were all affected, and at one point an iron lung was parked next to his bed in case he needed help to breathe.

“All your nerves just burned,” recalled the Evesham resident, now 72. “For anyone to touch me any place, it was painful.”

Horn didn’t worry about polio at all before he got it, he said, but looking back now, he’s sure it was on his parents’ minds.
Prevention. An outbreak becomes an epidemic when the disease spreads to a much broader geographic area.

New York City was the epicenter of that epidemic, with more than 9,000 cases and 2,500 deaths. In North Jersey, Newark was hit hard. By the end of September, the city had 1,360 cases and 363 deaths.

The mortality rate was as high as 37.5 percent during particularly bad weeks, Newark health officer Dr. Charles Craster wrote in the April 1917 issue of The Journal of the American Medical Association.

Polio was especially deadly in those early years, Wilson explained, because there were no respirators or iron lungs to help children whose breathing muscles were paralyzed. Iron lungs looked like large metal cans and used air pressure to manually inflate and deflate a person’s lungs as they lay inside the machine.

Health officials knew little about the “baby plague,” as it was called, or how it spread. They studied everything from animals to insects as the potential source.

“Epidemic poliomyelitis appears to be a disease carried directly from place to place by some human carrier not yet possible of identification,” Craster wrote in his 1917 JAMA report.

By August, the state was ordering communities to ensure human and animal waste and garbage were disposed of properly. The Bristol Daily Courier reported households with polio cases were being closely monitored, with watchmen posted outside families’ doors. And the National Guard was enlisted in an effort to stop children from traveling between cities and states affected by the epidemic.

What health officials didn’t realize, Wilson said, was that only a fraction of the people who were infected with the polio virus had symptoms of paralysis. So, in years like 1916, Wilson said, “You’ve got a helluva lot of other people who had a mild case of polio and didn’t have paralysis, but were shedding the virus (in their stool) and were capable of infecting somebody else.”
Vaccines then and now

As polio epidemics worsened in the 1950s, scientists such as Jonas Salk and Albert Sabin raced to develop a vaccine.

The first one was approved in 1955 and widespread distribution began soon afterward. Since the 1980s, many health organizations and groups, including Rotary International, have pushed for widespread vaccination to eradicate the disease around the world.

Over the years, countries have switched back and forth from a version of Salk’s vaccine that used an inactivated or "dead" virus and could be injected to an oral version of Sabin’s vaccine that used a live virus. By 1994, polio was eradicated in the Western Hemisphere.

Now, with almost 3 billion children vaccinated, the hope is that the disease will be eradicated worldwide by the end of 2016, said polio survivor John Nanni, a district chairman for Rotary’s Polio Plus initiative. Until then, vaccination is still necessary because polio is only "a plane ride away," Nanni said.

In April, countries using the oral polio vaccine began to switch from a trivalent vaccine, which protects against all three types of polio, to a bivalent vaccine, which only protects against types 1 and 3. That’s because the only cases of type 2 polio that still occur are those caused by the vaccine; all other cases have been eliminated, Nanni explained. "Hopefully, by the end of 2016, we’ve even eliminated (types 1 and 3), and have switched over to the ‘injectable’ polio vaccine, which has a dead virus and cannot cause polio," Nanni said.

Researchers also are now developing technology to deliver the inactive or dead virus using a patch with tiny microscopic needles so the vaccine is easier and cheaper to administer, Nanni added.

It ain’t over ‘til it’s over, Nanni said, but we are “this close.”

mean it will no longer affect people. Decades after they had polio, survivors like Horn have developed post-polio sequelae, or post-polio syndrome, and are experiencing pain and fear once again.

After about two weeks in the isolation hospital, Horn was moved to what was then called the Children’s Country Home in Mountainside, Union County, where volunteer aides provided care that included hot packs, passive motion rehabilitation, muscle stimulation and mental awareness, according to the hospital’s online history.

He remembers the hot packs well.
“it was like a woolen material wrapped in plastic, in very hot water, and they put them on and it felt real soothing on the muscles and everything — for about a half hour, then they would start to cool,” Horn recalled. "And if you’ve ever had wet wool on you, it’s like, ‘OK, they’re not warm anymore, take them off, please!’ It was very itchy.”

Horn spent almost a year at the home recuperating, swimming and working with a teacher so he didn’t fall behind in school. While he was there, the Salk vaccine, which used a dead version of the virus, was introduced.

Lawrence Horn, using crutches after his bout with polio, recalled when he went to a New York Yankees game and met several Yankee greats in the mid-1950s: (from left) Yogi Berra, Phil Rizzuto, Mickey Mantle and Jerry Coleman. His brother is next to him and his father is at far right.

Resources and Information

Polio Network of New Jersey  www.pnnj.org  201-845-6860
Polio Survivors Network (Pa. and Beyond)  www.papolionetwork.org  215-858-4643
International Centre for Polio Education  www.postpolioinfo.com
Post-Polio Health International  www.post-polio.org
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