Polio Case Reported in the U.S. This Month

Marny K. Eulberg, MD

By now, many in our polio survivor neighborhood have already heard the news that a case of acute polio has recently been confirmed in Rockland County, New York. More information will likely come forward, but what we currently know is that one of the United States' newest polio survivors is an adult male who was unvaccinated, developed the first symptoms about one month ago, and was infected with an oral polio vaccine-derived type 2 poliovirus.

Reportedly he had not traveled abroad, but the type of poliovirus that caused his paralysis is what is called "circulating vaccine-derived poliovirus—cVDPV" and that means it was imported into the U.S. from somewhere in the world where the oral polio vaccine is still used. It has become more common, although still rare, in parts of the world where the oral (Sabin) polio vaccine is used and where there are large numbers of unvaccinated or under-vaccinated individuals and especially where there is inadequate sanitation and access to clean water.

Globally, there were 1,113 children diagnosed with paralysis from polio caused by the cVDPV viruses in 2020, 689 in 2021, and year-to-date in 2022 two hundred thirty. These individuals, mostly children, are just as paralyzed as they would have been had they been infected with the "wild"/occurring-in-nature polioviruses.

This NY case demonstrates that we, in the developed world, can still see cases of acute polio anywhere that there is inadequate herd immunity to polio. A recent report that sewage samples in London had shown presence of circulating vaccine-derived poliovirus type 2 (a similar type to that implicated in the NY case) stimulated concern that polio could show up in parts of the world that have not seen polio for decades. Organizations dedicated to polio eradication such as Rotary International and the Global Polio Eradication Initiative (GPEI) often quote the sayings, "Any form of poliovirus anywhere is a threat to children everywhere" and "Polio is just an airplane ride away."

Most polio survivors do not need to be convinced of the value of polio vaccines because they have seen the devasting effects these nasty viruses can have. A course of three doses of any form of polio vaccine has been demonstrated to be 99% effective in preventing polio.

There are some advantages to using the oral polio vaccine. A novel oral polio vaccine type 2 (nOPV2) has been developed that is much less likely to mutate when out in the environment and then cause vaccine-derived disease. The United States stopped using all oral polio vaccine in 2000 and switched back to the injectable (killed) (Salk) polio vaccine. There is NO risk of cVDPV when the polio shots are used instead of oral polio vaccine drops (or remember the "sugar cubes" with the polio vaccine drops were placed on a sugar cube?)

Some of you who have traveled to developing countries in the past few years may have been surprised to learn that an additional booster dose of polio vaccine was recommended before travel to certain

countries even though you had had the disease and had been fully immunized for polio. This is an extra precaution because of the theoretical risk of exposure to wild poliovirus or the circulating vaccine-derived poliovirus. For the past five years, wild poliovirus cases (all recently have been type 1) have been confined to Pakistan and Afghanistan. Circulating vaccine-derived polioviruses (mostly type 2) have been reported in nearly 30 countries including in many parts of Africa, Southeast Asia, Israel, Ukraine, and the Arabian Peninsula.

The bottom line is that this case presents no threat to those who have been immunized but is a reminder that polio is not yet "gone". It is unfortunate that this man now is suffering from a vaccine-preventable illness!

For up-to-date information about polio including the cVDPV go to https://polioeradication.org ■

Marny Eulberg, MD is a member of PHI's board of directors, a family physician, and the chairperson for Rotary District 5450's Polio Committee.