

How Many Polio Survivors Are There?

I am sometimes asked the question, “How many polio survivors are there?” That’s a good question. I can site various government surveys, and I can quote from published articles, but I’ve always had a suspicion that we are actually underreported.

The following paragraphs in italics are from the Centers for Disease Control (CDC), which is part of the United States Department of Health and Human Services. I have added my related comments at the end of each paragraph.

“Up to 95% of all polio infections are inapparent or asymptomatic. Estimates of the ratio of inapparent to paralytic illness vary from 50:1 to 1,000:1 (usually 200:1). Infected persons without symptoms shed virus in the stool and are able to transmit the virus to others.”

Let’s use the CDC figure of 200:1. If I read this paragraph correctly, it means that for every person who contracted polio, and had some degree of identified neurologic deficits, there were about two hundred additional people who were infected with the polio virus but nobody knew it.

“Approximately 4%–8% of polio infections consist of a minor, nonspecific illness without clinical or laboratory evidence of central nervous system invasion. This clinical presentation is known as abortive poliomyelitis, and is characterized by complete recovery in less than a week. Three syndromes observed with this form of poliovirus infection are upper respiratory tract infection (sore throat and fever), gastrointestinal disturbances (nausea, vomiting, abdominal pain, constipation or, rarely, diarrhea), and influenza-like illness. These syndromes are indistinguishable from other viral illnesses.”

This paragraph complicates the issue. If there is no “clinical or laboratory evidence of central nervous system invasion,” how do we know the person had polio? Did they do a stool culture looking for the polio virus or do a spinal tap? My guess is that doctors wouldn’t have done these tests without some evidence of “flaccid paralysis.” All the literature I’ve read says a presentation of flaccid paralysis is the clue that someone has a neuromuscular disease, i.e., polio, West Nile encephalitis, etc.

Of course, if a community was in the midst of a polio epidemic, some of these tests might have been done to any patients who looked like they may have polio. Polio was very frightening to parents, families, and community health professionals. But even in these circumstances, it is doubtful that every person who complained of “influenza-like illness” would be tested.

“Nonparalytic aseptic meningitis (symptoms of stiffness of the neck, back, and/or legs), usually following several days after a prodrome (definition: an early symptom indicating the onset of an attack or a disease) similar to that of minor illness, occurs in 1%–2% of polio infections. Increased or abnormal sensations can also occur. Typically these symptoms will last from 2 to 10 days, followed by complete recovery. Fewer than 1% of all polio infections result in flaccid paralysis (definition: weakness or loss of muscle tone resulting from injury or disease of the nerves innervating the muscles).”

The CDC says that, “fewer than 1% of all polio infections result in flaccid paralysis.” But I’ve read studies done in the late 1940s by David Bodian, MD, PhD, a distinguished anatomist, that indicate at least 50 percent of motor neurons have to be impaired by the polio virus before there is any visibly apparent paralysis. So, if this is true, then many people probably had polio-related neuromuscular damage without these people, or the medical community, being aware of it. And, if someone had neuromuscular damage years ago, it seems logical that this would put that person at greater risk for something like post-polio syndrome.

Does this make it any easier to answer the question? I doubt it. It just illustrates the problem of establishing statistically supportable numbers. Even stating the actual number of “identified” polio survivors is difficult. I’ve read various medical articles that put the numbers as low as 250,000 and as high as one million or more. The 250,000 number is compiled from existing records of hospital admissions and of at-home polio patients. The higher numbers are estimated from these patients plus national interviews about health issues.

Even if we take the lowest estimate of 250,000 identified polio survivors in the U.S., and agree with the CDC that these people represent just 5 percent of the people who had a polio infection, then there must be at least five million people in the U.S. who were infected. How many of these five million people are at risk now of polio-accelerated neurologic damage?

I guess the final question is, can these five million people be classified as polio survivors? And, if they are classified as polio survivors, would this trivialize the experiences of those of us who spent weeks or months in hospitals and rehabilitation facilities?

It probably isn’t trivial if people are experiencing the late effects of polio, and they or their doctors have no clue as to the cause. They have no idea that these new problems are being caused by a virus that damaged their neuromuscular system decades before.

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