

The failure to eradicate polio: Capitalism cannot protect the world's population from a growing number of epidemic diseases

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A “public-private partnership” to eradicate polio has failed, despite an effort that began in 1988. This graphically illustrates the inability of the capitalist system to mobilize the resources—political, social, and economic—to meet the challenge to human health, not only of polio, but of COVID-19, and the likely emergence or resurgence of even more epidemic diseases in the near future (e.g., monkeypox, Ebola, or some other).

The Global Polio Eradication Initiative (GPEI), a joint effort between the Gates Foundation, Rotary International, the World Health Organization (WHO), the United Nations Children’s Fund (UNICEF) and the US Centers for Disease Control and Prevention (CDC), has relied on private philanthropies (Gates and Rotary) to make up for inadequate public funding. It has reportedly spent approximately \$1 billion per year and yet has repeatedly failed to meet deadlines for global eradication due to both insufficient funding, limitations of access to vulnerable populations due to war and ineffective vaccination strategies, all reflecting constraints imposed by the capitalist system.

The Gates Foundation has just announced a commitment to donate \$1.2 billion to a new phase of the GPEI’s eradication effort. However, the fundamental constraints that have led to the program’s past failures remain. Another \$1.4 billion was pledged Tuesday by numerous governments worldwide, in each case a drop in the bucket compared to their spending on war and corporate bailouts.

The Biden administration, for example, pledged \$114 million, about what it spends on the war in Ukraine in 10 hours and close to what the Pentagon spends in 45 minutes.

Before effective vaccines were developed, the disease, which is highly contagious, was widespread and much feared due to its often devastating life-long paralysis. It can be spread via contact with the saliva, feces (either directly or via contaminated water or other materials), or by aerosols from an infected person. In the late 1940s and early 1950s, waves of polio, which tended to peak during summer, resulted in tens of thousands of cases of paralysis per year in the US alone. Parents feared letting their children go outside to play due to the danger. Travel restrictions and quarantines were imposed to help reduce the spread with substantial public support.

The stated intent of the current phase of the polio eradication program, which is supposed to reach its goal by 2026, is to eliminate transmission of the “wild” disease (i.e., infections not originating from mutated vaccine-derived virus) in Pakistan, where 20 cases have been reported so far this year, and Afghanistan, where two cases have been reported this year. These are likely to be significant undercounts.

The disease is still classified as endemic in these two countries. In addition, there have been recent outbreaks in Sudan, Malawi, Mozambique and Iran.

The situation in Pakistan has been greatly exacerbated by the recent catastrophic flooding, the result of climate change, where contaminated floodwaters provide a ready route of transmission for the polio virus and other water-borne disease pathogens. Polio has also recently reappeared in countries where it had previously been eliminated, including Israel, Britain and the US.

The persistence and re-emergence of polio is one of the strategic failures of the GPEI. In poorer countries, the program has relied on a form of vaccine based on “attenuated,” but not killed, virus to provoke an immune response. The attenuated-virus vaccine (Sabin) is cheaper and easier to administer than the Salk vaccine, which uses the killed virus, since it is given to the recipient in liquid form by minimally trained individuals. By contrast, the Salk vaccine must be given in multiple injections by medical personnel and has more stringent storage and handling requirements.

Another characteristic of the oral vaccine is that while it provides immunity to the disease, the polio virus can still reproduce in a vaccinated individual and is still transmissible to other, unvaccinated individuals, who themselves develop immunity. Thus, vaccination of only a fraction of the inhabitants of a given community can result in widespread immunization, making the program more cost effective.

However, there is a major drawback to the oral vaccine. In a small but nevertheless not insignificant number of cases, the attenuated virus can mutate to a virulent form, causing disease in unvaccinated individuals when they are exposed via community transmission. This is known as “vaccine-derived” polio. While the wealthier nations long ago switched to exclusive use of the injected, “killed virus” vaccine, for the reasons cited above the oral version is used by the GPEI in poorer countries.

While the GPEI has successfully reduced the occurrence of polio by 99 percent below its previous level, mostly in its first 10 years of operation, the failure to achieve total eradication, as had previously been accomplished with smallpox, has opened a window for its resurgence. This “vaccine-derived” disease is what is appearing in unvaccinated members of communities in countries where polio had previously been greatly reduced or eliminated, including detections of virus via wastewater testing in London and the New York City metropolitan area, where vaccination rates are significantly below the levels needed to effect herd immunity.

There is a further danger. Both the current oral and injected polio

vaccines are highly effective in preventing disease in vaccinated individuals. However, as is being graphically illustrated by the failure to implement effective measures to eradicate SARS-CoV-2, the virus that causes COVID-19, the continuing spread of the virus is allowing variant after variant to emerge. A number of these variants are more transmissible and/or more virulent than the original form, creating a never-ending pandemic. As the polio virus continues to spread, it is entirely possible that variants will emerge that are less susceptible to the immune responses elicited by the current vaccines.

The latest evidence that the disease is continuing to spread comes from a wastewater sample recently taken from a collection system that overlaps portions of the boroughs of Brooklyn and Queens in New York City which tested positive for the vaccine-derived polio virus. Since April, samples containing the virus have been found across a large swath of the New York City metropolitan area. In addition to boroughs of the city, the virus has been detected in Nassau to the east and Rockland, Orange and Sullivan counties to the northwest. The state health department has reported that a total of 70 separate samples from the region have tested positive.

Testing for the polio virus had not been conducted for years in the US and other wealthy countries based on its elimination there decades ago. Wastewater testing was resumed in the New York City area only after an unvaccinated man in Rockland County was diagnosed with the disease. Of the 70 positive samples so far obtained from this area, 63 have been genetically linked to the Rockland case, which was caused by a mutated, vaccine-derived strain. Of those 63, Rockland had 37, Orange 16, Sullivan eight, Nassau one, and one each from Brooklyn and adjacent Queens. These results strongly indicate that the virus is well established in these communities and appears to be spreading.

Recent detections of mutated, vaccine-derived strains have also taken place in Israel and the UK.

In response to this latest discovery, New York Governor Kathy Hochul has extended the previously declared state of emergency through November 8 in an attempt to increase vaccination rates, which had fallen to dangerously low levels in recent years. Although no additional cases of the disease have been reported so far in the US, the number and geographic spread of virus detections, which can be transmitted asymptotically, demonstrate that this pathogen has been circulating widely for some time. Some cases may have gone undiagnosed due to lack of familiarity with the disease symptoms among the medical community resulting from its absence for many years or a lack of proper sanitation and medical care available in poorer communities. "Vaccine hesitancy" promoted by right-wing forces during the COVID-19 pandemic is also likely a factor in allowing the virus to spread.

New York State Department of Health (NYSDOH) Commissioner Dr. Mary T. Bassett has declared that the virus is an "imminent threat to the public health." The state's response, however, does not match this pronouncement, mirroring the failure regarding COVID-19.

The NYSDOH reports that since July, more than 28,000 doses of polio vaccine have been administered in Rockland, Orange, Sullivan and Nassau counties, a 14 percent increase over last year. However, this remains grossly inadequate to address the significant vaccination deficit in portions of the New York metropolitan area. For example, in Rockland County, the vaccination rate for children under 2 years old is only 60 percent in 2022, down from 67 percent in 2020. The rate is as low as 37 percent in some areas in the county. The NYSDOH recommends a minimum of 90 percent vaccination to control disease

spread.

The necessity of total eradication has been made clear during the current COVID-19 pandemic. China has undertaken a major campaign, based on well-established public health procedures, to eliminate SARS-CoV-2 within its territory. However, due to the criminal "live with the virus" policies implemented by the capitalist ruling class throughout the rest of the world, repeated reinfection from external sources is unavoidable.

A recent meeting of the GPEI emphasized the need for adequate funding to accomplish the goal of polio eradication. It estimates that \$4.8 billion is needed to achieve this goal within five years. Based on past failures to reach stated goals, the adequacy of this amount must be questioned. By comparison, this is a drop in the bucket compared to the huge sums that have been disgorged by central banks to bail out the financial and corporate elite since the outbreak of COVID and that is continuing to be expended to fund the war against Russia in Ukraine. The elimination of all new funds to fight COVID in the just-passed US budget clearly demonstrates where the ruling class's priorities lie.

The GPEI is going cap in hand to donors begging for funds. The recent pledge by the Gates Foundation of \$1.2 billion represents only a quarter of the already inadequate GPEI estimate of need. The contrast between the earlier successful smallpox eradication program and the failure of the polio effort is instructive and illustrates the decay of the capitalist system, which is now incapable of mounting an effective program to protect the population from a growing number of deadly diseases.

An effective vaccine against smallpox was first developed in Europe in 1796 by Edward Jenner, though there are records to indicate that an inoculation had been developed in China more than two centuries earlier. However, it was not until 1967 that a concerted effort aimed at global eradication was launched by the WHO. The last naturally occurring case of smallpox anywhere in the world was diagnosed in October 1977. The disease was declared by the WHO to have been globally eradicated in 1980. Thus, the goal was achieved in approximately 13 years. It remains the only human disease to have been successfully expunged from the earth. The cost of the effort from 1967 to 1979 is estimated at \$300 million. A major part of the program was undertaken by the US and the Soviet Union.

The contrast between the total eradication of smallpox in less than a decade-and-a-half and the failure to do so regarding polio in more than three decades is an object lesson in the rapid decay of the capitalist system. It is unwilling and, indeed, unable to allocate the necessary resources to effectively address the health of the world's population. At the same time, through economic crisis, the devastation wrought by perpetual war and environmental deterioration, the capitalist system is creating conditions that promote the emergence and spread of diseases, such as COVID-19, monkeypox, Ebola and others which threaten to devastate humanity.



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