Between East and West: Polio Vaccination across the Iron Curtain in Cold War Hungary

Dora Vargha

Bulletin of the History of Medicine, Volume 88, Number 2, Summer 2014, pp. 319-342 (Article)

Published by The Johns Hopkins University Press
DOI: 10.1353/bhm.2014.0040

Between East and West: Polio Vaccination across the Iron Curtain in Cold War Hungary

DORA VARGHA

SUMMARY: In 1950s Hungary, with an economy and infrastructure still devastated from World War II and facing further hardships, thousands of children became permanently disabled and many died in the severe polio epidemic that shook the globe. The relatively new communist regime invested significantly in solving the public health crisis, initially importing a vaccine from the West and later turning to the East for a new solution. Through the history of polio vaccination in Hungary, this article shows how Cold War politics shaped vaccine evaluation and implementation in the 1950s. On the one hand, the threat of polio created a safe place for hitherto unprecedented, open cooperation among governments and scientific communities on the two sides of the Iron Curtain. On the other hand, Cold War rhetoric influenced scientific evaluation of vaccines, choices of disease prevention, and ultimately the eradication of polio.

KEYWORDS: Cold War, polio, Salk, Sabin, vaccines, Hungary, World Health Organization, children, eradication

On July 13, 1957, a fairly prestigious group, including leading state officials and party members of the People's Republic of Hungary, greeted a tall, black-haired man at the airport: a West German pilot. The Communist Party official shook his hand in the name of all Hungarian mothers, while

I would like to thank Julie Livingston, Keith Wailoo, Paul Hanebrink, Bonnie Smith, Joao Rangel de Almeida, Allison Miller, Joanna Radin, Tal Zalmanovich, Dina Fainberg, Bridget Gurtler, and the members of Department II at the Max Planck Institute for the History of Science (MPIWG) for their comments and feedback on this work. I would also like to thank the three anonymous reviewers for their helpful suggestions. This research was supported by generous awards from the Andrew W. Mellon Foundation, the Karen Johnson Freeze Fellowship Fund, MPIWG, and the Philadelphia Area Center for History of Science (PACHS). Archivists and librarians of the WHO Library and Archives, the National Archives and National Film Archives of Hungary, the Wellcome Library, and the library of the MPIWG contributed greatly to locating primary and secondary sources.

experts from the Health Ministry and the National Public Health Institute inspected the cargo, a long-awaited shipment of the Salk vaccine.[1] This inactivated vaccine was developed by Jonas Salk and licensed in 1955 after a massive field trial in the United States. The vaccine, administered as an injection, contained killed poliovirus strains that would provide immunity to paralytic poliomyelitis.

The vaccine, whose arrival was dramatically depicted in news broadcasts,[2] made its way to Hungary via a complicated route. The precious vaccine, developed in the United States, was manufactured and shipped from Canada, traveled to Amsterdam, where a West German pilot on a Swiss airplane picked it up, and was flown over the Iron Curtain, arriving in Budapest.[3]

Had the pilot been able to spend a few days at his destination, he would have seen a country recuperating from one crisis and entering another. Merely half a year had passed since Russian tanks were rolling along the streets of Budapest; the capital had played host to desperate battles as part of a revolution against the communist regime in the fall of 1956. The new Kádár government had just started showing its teeth: executions of those whom officials called "counterrevolutionaries" started in early spring. Still, the country was slowly recovering from its complete standstill, restoring public transportation, removing rubble, moving on.

It was into this social and political environment that the most severe polio epidemic in Hungarian history made an entrance in the early summer of 1957. By October, nearly 2,300 children were paralyzed by the disease: this was an incidence rate of twenty-three per hundred thousand, one of the highest rates in Europe. The stakes were thus high: the new postrevolutionary government was faced with a crisis of a different kind and needed to show power and efficiency in answering the epidemic challenge.

Meanwhile in Moscow, Leningrad, and Cincinnati, an improbable relationship of another kind was forming. In early 1956, a Soviet medical mission arrived in the United States, led by Mikhail Chumakov, renowned Russian virologist, his wife and colleague Marina Voroshilova, and Anatoli

1. "Július 18. És 19–Én Megkezdődik a Gyermekbénulás Elleni Védőoltás. Az Egészségügyi Minisztérium Hivatalos Tájékoztatója," *Népakarat*, July 14, 1957.

2. *Szülők, Vigyázzatok!*, film reel (Budapest: Health Ministry, 1957).

3. The vaccine in question was manufactured by Connaught Laboratories. By 1957, Connaught became a major Salk vaccine exporter, supplying Czechoslovakia and Britain, among over forty countries. Luis Barreto, Rob Van Exan, and Christopher J. Rutty, "Polio Vaccine Development in Canada: Contributions to Global Polio Eradication," *Biologicals* 34 (2006): 91–101.

Smorodentsev.[4] The delegation studied the production of the Salk vaccine and ongoing research in epidemiology. During the trip, they also visited the laboratory of Albert Sabin. This visit turned out to be the beginning of a decade-long exchange. Scientists, specimens, and vaccine vials crossed the Iron Curtain in both directions as cooperation intensified between American and Soviet virologists, especially Sabin and Chumakov's group. This cooperation had the blessing of both the FBI and the State Department, despite warnings from the Department of Defense that the materials and research involved could be used to make biological weapons.[5]

As a result of this cooperation, the Sabin vaccine became the second polio vaccine to enter Hungary, this time from the Soviet Union. This vaccine, in contrast to the Salk vaccine, contained live attenuated polioviruses that were weak enough not to cause symptoms, but still strong enough to elicit immunity to the disease. The Sabin vaccine was administered orally, mixed with sweet syrup or dropped on sugar cubes.

The story of the two vaccines, one arriving from the West, the other from the East, shows how, for the sake of polio prevention, holes in the Iron Curtain opened and closed. Furthermore, the history of polio vaccination in Hungary highlights how political alliances do and do not produce trust—in technologies, in science, in one's own government, in the other side, in doctors, and in citizens. Trust that is fundamental to epidemic management. Polio had an ambivalent effect: it had the power to turn enemies into friends and create a site of détente, and at the same time reinforce the very Cold War antagonisms that it had worked against. A closer look at how the politics of polio played out in Hungary reveals gaping holes in the Iron Curtain through which scientists, technologies, and knowledge openly and legitimately traveled from both sides. This story points to otherwise invisible moments in the Cold War, when governments would openly contradict their own policies with their actions and scientific cooperation between East and West would yield results subsequently used widely by both sides. However, the use of the Salk and Sabin vaccines in Hungary also shows the limits of flexibility in Cold War politics, and the way in which the alleged neutrality of science and children's health that created this elusive space of cooperation was thoroughly politicized and permeated with Cold War frustrations.

Traditionally, Cold War scholarship has focused on high politics and security studies. Cold War relations between East and West have been

4. Saul Benison, "International Medical Cooperation: Dr. Albert Sabin, Live Poliovirus Vaccine and the Soviets," *Bull. Hist. Med.* 56 (1982): 460–83, 467.

5. David M. Oshinsky, *Polio: An American Story* (Oxford: Oxford University Press, 2005), 251.

analyzed through military, political, and socioeconomic rivalries as conflicts between socialism and capitalism. These considerations are no doubt crucial parts of the story, as the following discussion demonstrates. However, new dimensions of interaction between the two sides can be traced when looking at the Cold War from different perspectives[6]—in this case, the experience of polio elimination in Hungary. One of the approaches that argue for a broadening of geographical focus and scope of historical investigation comes from recent studies in the fields of history of science and science and technology studies.[7]

This article shifts attention from the two superpowers to an Eastern European state and focuses on the circulation of medical knowledge and technology rather than the competition between the Soviet Union and the United States. In contrast to Cold War intransigence, the case of Hungarian polio vaccination shows surprising flexibility in foreign and domestic policies and indicates circumstances under which the Iron Curtain was drawn to let people, vaccines, and practices through. Nevertheless, this history of medicine approach leaves open as many important questions as it answers. Critical historical work on health and medicine in Eastern Europe in the early Cold War era is scarce,[8] and none has been published on Hungary. Furthermore, although polio in the 1950s was a significant public health issue on a global level, international cooperation in the fight against polio has not been investigated in depth.[9] The goal of this article,

6. See, for instance, approaches in Sari Autio-Sarasmo and Brendan Humphreys, eds., *Winter Kept Us Warm: Cold War Interactions Reconsidered,* Aleksanteri Cold War Series (Helsinki: University of Helsinki, 2010); Zuoyue Wang, "Transnational Science during the Cold War: The Case of Chinese/American Scientists," *Isis* 101, no. 2 (2010): 367–77; Nikolai Krementsov, *The Cure: A Story of Cancer and Politics from the Annals of the Cold War* (Chicago: University of Chicago Press, 2002).

7. See David A. Hounshell, "Rethinking the Cold War; Rethinking Science and Technology in the Cold War; Rethinking the Social Study of Science and Technology," *Soc. Stud. Sci.* 31, no. 2 (2001): 289–97; Marcos Cueto, *Cold War, Deadly Fevers: Malaria Eradication in Mexico, 1955–1975* (Washington, D.C.: Woodrow Wilson Center Press, 2007); Gabrielle Hecht, ed., *Entangled Geographies: Empire and Technopolitics in the Global Cold War,* Inside Technology (Cambridge, Mass.: MIT Press, 2011); Hunter Heyck and David Kaiser, "Focus: New Perspectives on Science and the Cold War. Introduction," *Isis* 101, no. 2 (2010): 362–66.

8. See Lily M. Hoffman, "Professional Autonomy Reconsidered: The Case of Czech Medicine under State Socialism," *Comp. Stud. Soc. Hist.* 39, no. 2 (1997): 346–72. Several ahistorical studies can give an insight into Eastern European medicine in the 1950s and 1960s; see Richard E. Weinerman and Shirley B. Weinerman, *Social Medicine in Eastern Europe: The Organization of Health Services and the Education of Medical Personnel in Czechoslovakia, Hungary, and Poland* (Cambridge, Mass.: Harvard University Press, 1969); Zdenek Stich, *Czechoslovak Health Services* (Prague: Ministry of Health, Czechoslovak Socialist Republic, 1962).

9. Benison, "International Medical Cooperation" (n. 4); chap. 14 in Oshinsky, *Polio* (n. 5), 237–54.

based almost exclusively on original primary research,[10] is to demonstrate the fluidity and multiplicity of the Cold War experience, which becomes visible when viewed through the lens of polio.

Polio Epidemics in Hungary

Polio epidemics hit Hungary more severely than ever before in the 1950s. Until World War II, poliomyelitis epidemics usually appeared every four years in Hungary, but, as in many places around the globe, outbreaks became more frequent and more deadly from 1952 and were perceived as a constant threat until 1959. The epidemics hit Hungary in the summers of 1952, 1954, 1956, 1957, and 1959. According to available statistics, cases of polio rose to 23.8 and 18.3 per hundred thousand in the peak years of 1957 and 1959, respectively.[11] When compared to those for other countries, these numbers are rather high. In England/Wales and West Germany, the highest incidence rate was around 18 per hundred thousand in 1950 and 1952, while it reached nearly 21 in the Netherlands in 1956.[12] Epidemics in the United States reached their highest number at 37 per hundred thousand in the peak year of 1952.[13]

Polio was considered so important by the mid-1950s that prime minister Imre Nagy personally gave orders to found the Heine-Medin Post Treatment Hospital in the midst of the 1956 revolution.[14] Soon, hundreds

10. Based on research conducted in Budapest, Geneva, London, Philadelphia, and New Haven, this article draws on the archival sources of the Health Ministry and Ministerial Council of the People's Republic of Hungary, Radio Free Europe, and the Hungarian National Film Archives; Hungarian, British, and American medical journals; the internal newspaper of the Heine-Medin Hospital in Budapest; the Dorothy M. Horstmann Papers; newspaper articles; reports of the Hungarian National Public Health Institute; international conference proceedings; and memoirs and oral history interviews.

11. István Dömök, "A hazai járványügyi helyzet az élő poliovirus vakcina bevezetése előtt," in *A Gyermekbénulás Elleni Küzdelem: Beszámoló Egy Ma Már Múlttá Váló Rettegett Betegség Ellen Folytatott Hősies Küzdelemről És Felszámolásának Lehetőségéről: A Szent László Kórház Centenáriumára Készült Összeállítás*, ed. Rezső Hargitai and Ákosné Kiss (Budapest: Literatura Medica, 1994), 24–41.

12. Ulrike Lindner and Stuart Blume, "Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955–1965," *Med. Hist.* 50 (2006): 425–46, figure 1.

13. Daniel J. Wilson, *Polio* (Portsmouth, N.H.: Greenwood, 2009), 14.

14. Heine-Medin is a popularly used alternative name for poliomyelitis in Hungary. On the foundation of the hospital by Imre Nagy, see Dr. László Lukács, "Letter to the International Committee of the Red Cross," manuscript no. CWD/Ehm in Demandes d'aide pour secours en Hongrie B AG 280 094-031.01 (Geneva: International Committee of the Red

of children were hospitalized as the two most severe epidemics hit the country in 1957 and 1959.[15] Vaccination was introduced in Hungary in the fall of 1957 with the Salk and (in 1959) Sabin vaccines, the former brought by the West, the latter arriving from the Soviet Union. After 1963, the number of cases fell to a few per year, and the last wild polio case was registered in 1969. Since 1972 (the appearance of an imported case—a person who contracted polio elsewhere and fell sick in Hungary), there have been no new recorded cases of polio in the country.[16]

Vaccine from the West: Salk Vaccination

The year 1957 marked a turning point in the Hungarian history of polio: the summer heat brought the most severe epidemic ever seen in the country. Simultaneously, a new hope for ending all future epidemics appeared in the form of the Salk vaccine. The growing number of polio cases all over Hungary from May onward resulted in increased concern among parents and the government.[17] Later that month, Health Minister Frigyes Doleschall presented a pessimistic forecast at a governmental hearing: "A significantly higher number of cases has occurred [this year] than in the respective months of previous years, even if we take into account the two recent epidemic years (1954, 1956). The situation is all the more aggravating since according to our experience, the number of cases peak after the months following the hottest periods. Therefore, we can expect the polio epidemic to cause severe problems this year."[18] As the minister's

---

Cross Archives, 1956); Budai Gyermekkórház és Rendelőintézet Kht., "A Kórház Története," http://www.janoskorhaz.hu/tortenet/#a-budai-gyermekkorhaz, accessed November 13, 2007.

15. The patients entering the hospital were mainly children (in 1957 more than 90 percent of the 781 new patients were under six years old). Dr. Sára Schütz, "A Magyar Hygienikusok Társasága Konferenciáján," *Heine-Medin Híradó* 1 (November 1959): 2.

16. István Dömök, "A kampányoltások időszaka (1959–1991)," in Hargitai and Kiss, *Gyermekbénulás Elleni Küzdelem* (n. 11), 169.

17. Egészségügyi Minisztérium, "Az Egészségügyi Minisztérium Tájékoztatója Az Ország 1957. Évi Május Havi Járványügyi Helyzetéről," *Népegészségügy* 38, no. 6 (1957); Egészségügyi Minisztérium, "Az Egészségügyi Minisztérium Tájékoztatója Az Ország 1957 Évi Június Havi Járványügyi Helyzetéről," *Népegészségügy* 38, no. 7 (1957); Egészségügyi Minisztérium, "Bejelentett Heveny Fertőző Betegségek Magyarországon 1954–1959 Június Hóban," *Népegészségügy* 40, no. 8 (1959); "Tájékoztató a Gyermekbénulásos Megbetegedésekről," *Népszabadság*, June 27, 1957, 10; "Az Egészségügyi Minisztérium Tájékoztatója a Gyermekbénulásos Megbetegedésekről És a Védekezés Módjairól," *Népakarat*, June 27, 1957, 8.

18. Frigyes Doleschall, "A Járványos Gyermekbénulás Elleni Védekezés Időszerű Feladatai. Előterjesztés a Magyar Forradalmi Munkás-Paraszt Kormányhoz," manuscript no. 3311/1957 in Minisztertanács üléseinek jegyzőkönyvei, XIX-A-83-a (Budapest: Hungarian National Archives, 1957), 28–29.

prophecy seemed to come to fruition by early July, the Ministerial Council decided to act quickly. Having already banned public bathing and limited the travel of children,[19] they turned to a more drastic prevention method: immunizing children with the new Salk vaccine.[20]

The only vaccine available at the time was developed by Jonas Salk in the United States and was licensed in 1955. In the following years, Salk's vaccination spread widely throughout Europe, with Denmark leading the way by having immunized the entire endangered population through free vaccination by 1957.[21] The Netherlands started nationwide mass vaccination in 1957, while Britain organized immunization via the Salk vaccine a year later.[22] Among the Eastern European countries, Czechoslovakia and Poland began Salk vaccination with a domestically produced vaccine in 1957.[23]

The Hungarian Health Ministry faced hardships in securing money for the vaccine import,[24] since the country was deep in debt and struggling with a chronic shortage of hard currency.[25] The availability of the vaccine in other countries was public knowledge, since party newspapers covered the development and introduction of the Salk vaccine in the United States in 1955.[26] However, in the early summer of 1957, the vaccine was still

19. "Budapesten Nincsen Gyermekbénulási Járvány—Mondja a Tisztifőorvos. Egészségügyi Okokból Korlátozzák a Fővárosi Strandok Látogatását," *Népakarat*, June 28, 1957, 1; Imre Ádám, "Az Ifjúság Csoportos Üdültetése," manuscript no. 54228/1957 in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: Hungarian National Archives, 1957); "Az Ifjúság Csoportos Nyaraltatásának Egészségügyi Szabályai," *Népakarat*, July 2, 1957, 8.

20. "A Magyar Forradalmi Munkás-Paraszt Kormány Határozata a Járványos Gyermekbénulás Elleni Védekezés Időszerű Feladatairól," 1062/1957/VII.6./Korm in Minisztertanács Üléseinek Jegyzőkönyvei XIX-A-83a (Budapest: Hungarian National Archives, 1957); Doleschall, "A Járványos Gyermekbénulás Elleni Védekezés Időszerű Feladatai" (n. 18).

21. Dr. E. Juel Henningsen, "Poliovaccination in Denmark" (paper, Sixth Symposium of the European Association of Poliomyelitis, Munich, September 7–9, 1959).

22. Lindner and Blume, "Vaccine Innovation and Adoption" (n. 12), 437.

23. "Poliomyelitis. Papers Presented at the Fourth International Poliomyelitis Conference" (Geneva: J.B. Lippincott, 1957).

24. Doleschall, "A Járványos Gyermekbénulás Elleni Védekezés Időszerű Feladatai" (n. 18).

25. László Borhi, *Hungary in the Cold War, 1945–1956: Between the United States and the Soviet Union* (Budapest: Central European University Press, 2004).

26. The so-called Cutter incident, when patients in California contracted polio from a faulty batch of vaccine produced by Cutter Laboratories, was also widely covered in newspapers. The Hungarian press presented the incident as yet another example of the West's disregard for the well-being and safety of its citizens. In May 1955, the newspaper *Szabad Nép* accused the U.S. government of rushing into the vaccination process without proper testing because of negligence, thus making the children guinea pigs of the free market economy. Sentiments softened toward the Salk vaccine (though not necessarily the United

unavailable for most Hungarians. As the epidemic unfolded, the Health Ministry addressed the question of why there was no vaccination in Hungary. Doleschall released a statement explaining that hard currency was available for the purchase, but efforts were hindered by outside forces: the global demand for the vaccine was very high, and the delicate serum's production could not keep up.[27] Essentially this was a market economy of shortage that Hungarians could easily relate to.

It is almost certain, however, that the Health Ministry alone could not have secured the hard currency and procured the vaccine: they needed the Ministerial Council's decision and approval for the intricate process that involved allocation of credit, adjustment of economic plans, and mobilization of foreign trade relations. Nor was it true that hard currency was available for vaccine procurement. In a report submitted to the Ministerial Council, Doleschall pointed out that "the National Planning Bureau in 1956 was unable to fulfill the Health Ministry's hard currency need for importing Salk vaccine this year."[28] Clearly, the Health Ministry alone was too weak to push its agenda through. Something drastic needed to be done at the highest level of decision making to succeed in importing the vaccine.

Following these initial obstacles, the promise of a polio-free future arrived on a small airplane that appeared above the skies of Budapest around eight o'clock the evening of July 13, 1957. The route of the first official vaccine shipment, outlined at the beginning of this article, is symbolic of international cooperation in the struggle against polio. The transportation of polio vaccines was an enterprise that, in its official rhetoric, challenged Cold War concepts and claimed to override geopolitical tensions in the name of science and for the benefit of children. Moreover, with the arrival of the vaccine, this rhetoric made an appearance in public discourse in Hungary. While the description of international cooperation was carefully embedded in the much more familiar discourse of the paternal state providing for and protecting its subjects, such a carefree and positive tone, completely devoid of criticism of the West, stood out from the everyday articles and newsreels to which most Hungarians were

---

States) when renowned Russian virologist Mikhail Chumakov issued a favorable statement about the vaccine. This report was published in the same newspaper in April 1956. Cited by Radio Free Europe, "Polio in Hungary. Background Report," in *RFE News & Information Service—Evaluation & Research Section* (Budapest: Open Society Archives, 1957). 1.

27. Dr. Frigyes Doleschall and Dr. Aladár Kátay, "Tájékoztató a Gyermekbénulásos Megbetegedésekről," *Népszabadság*, June 27, 1957, 12.

28. Doleschall, "A Járványos Gyermekbénulás Elleni Védekezés Időszerű Feladatai" (n. 18).

exposed. For the sake of children's health, instead of an imperialist spy or decadent oppressor, this West German became the celebrated hero of the day. The nameless pilot said he volunteered for the flight on his day off, when he heard that it was a much-needed shipment of vaccine for the children of Hungary. "If only everyone was like this," commented the vice president of the Presidential Council in the newspaper article on the arrival of the vaccine.[29] The government considered the vaccine so important, and the need to communicate their final success in securing it for the children so pressing, that the party newspaper could contradict pages of the very same issue in depicting this fruitful cooperation.

The same story unfolded in different ways on opposite sides of the Iron Curtain. The news of the severe polio epidemic appeared in the international press, as in the aftermath of the 1956 revolution there was a high level of interest in Hungarian affairs.[30] However, while Hungarian sources stressed the high cost and debt that the government took on to import the vaccine, American newspapers talked of "aid" when it came to the Salk shipment.[31]

An explanation for the difference in the representation of those credited for the Hungarian vaccination can be found in contemporary international politics. In the years following the suppression of the revolution that broke out against the communist regime in October 1956, Hungarian–American diplomatic relations were at a low point. According to the Foreign Ministry, "Among all capitalist countries, . . . relations [were] the worst with the United States."[32] The conflict between Hungary and the United States was exacerbated by the formation of a United Nations committee to investigate Soviet intervention and the actions of the Kádár government. The relationship between the two countries turned so icy that American ambassador Edward Wailes was recalled in the spring of 1957 and the embassy in Budapest was left without an ambassador for the next ten years.[33] The United States, therefore, could easily have portrayed the Hungarian government—which the Americans perceived to be borderline

29. Dániel Nagy, "250 000 Köbcentiméter Salk-Vakcina Érkezett. Az Egészségügyi Minisztérium Tájékoztatója," *Népszabadság*, July 14, 1957, 3.

30. "Polio Epidemic Feared," *Washington Post*, June 5, 1957, 8; "Salk Expects End of Polio Some Day," *New York Times*, July 9, 1957, 3; "Hungary Battle Polio," *Washington Post*, July 2, 1957, 14.

31. "World Polio Cut by Salk Vaccine,*New York Times*, July 10, 1957, 19; "Budapest Receives Canadian Polio Aid," *New York Times*, July 14, 1957, 75.

32. László Borhi, *Iratok a Magyar-Amerikai Kapcsolatok Történetéhez 1957–1967*, ed. Mária and Vida Ormos, István, Iratok a Magyar Diplomácia Történetéhez (Budapest: Ister, 2002).

33. Ibid., 20.

illegitimate—as one needing outside help, rather than being capable of solving its own problems.[34]

At this point in the story of polio prevention, the Hungarian state was more flexible in its Cold War politics than was its American counterpart. While the revolution of 1956 deepened the Cold War divide in the eyes of the United States, the Hungarian government used some of the outcomes of the uprising to lift the Iron Curtain and temporarily allow personal avenues to cut through between East and West. In fact, the shipment of the treasured vaccine was preceded by personal packages containing single doses and over a year's efforts in domestic production.

Before the decision was made to import the vaccine, the communist state had encouraged informal ways of ameliorating the unfolding epidemic. On June 27, 1957, Hungarians read the following announcement by the Health Minister and Dr. Aladár Kátay, head of the epidemiology department of the Health Ministry, in the weekly polio report of the Party's daily newspaper: "We inform those who are attempting to acquire Salk-vaccine through their family members and acquaintances living abroad that the Health Ministry has contacted Customs and as a result, they will give priority to expediting the packages that arrive from abroad and contain this medicine."[35] The delicate vaccine would become useless if stalled at customs, therefore it was crucial to rush it through to its destination.[36]

The policy regarding packages arriving from the West originated from the tumultuous months of the 1956 revolution and its aftermath. Access to vital goods such as medicine was scarce, as buildings and infrastructure were severely damaged and production and trade were recovering slowly after halting completely. In addition, a good proportion of Hungary's population had left the country. In late November, to facilitate aid sent by private persons and as a supplement to help from international organizations such as the Red Cross, the Kádár government pronounced all packages containing food, clothing, and medicine to be duty free until July 1, 1957.[37]

34. Hungarian archival sources reveal that the Hungarian state actually did pay for the vaccine. See "Határozat Gyermekbénulás Elleni Szérum Behozataláról. 37. Sz. Jkv," manuscript no. 3311/1957 in Minisztertanács (Budapest, July 18, 1957).

35. Doleschall and Kátay, "Tájékoztató a Gyermekbénulásos Megbetegedésekről" (n. 27).

36. Not all vaccines made it intact. A report on a small shipment that arrived as a donation from a Swiss Catholic organization revealed that the vaccine became damaged on the way to Hungary and could no longer be used for immunization. Kátay Aladár, "Svájci Polio-Vaccina Használhatósága," manuscript no. 54074 in Egészségügyi Minisztérium Iratai XIX-C-2-e (Budapest: Hungarian National Archives, 1957).

37. "Terjesszék Ki a Külföldi Ajándékcsomagok Vámmentességét," *Népakarat*, December 5, 1956.

As the polio epidemic loomed on the horizon, the package policy was widened, introducing an expedited customs control in order to preserve the effectiveness of the delicate vaccines arriving in personal packages.[38] Family members and friends had already started sending gift parcels from abroad in March,[39] while some individuals chose to bring doses personally from official trips to the West in order to vaccinate their own children and neighbors.[40]

What is remarkable about this customs policy, and the encouragement of personal aid from family members and friends living abroad, is that through these announcements the state called on precisely the people it wanted to silence, punish, or destroy: émigrés who had left the country on various occasions from World War II onward because of the communist regime.[41] Most recently, two hundred thousand people, out of a total population of nine million citizens, had left when the revolution was suppressed. Approximately 25 percent returned in the early summer of 1957, after the postrevolutionary Kádár government offered amnesty to emigrants who were not affiliated with revolutionary actions (some were incarcerated and/or executed anyway). However, most emigrants never returned, and many spoke out ardently against the Hungarian communist regime.

Meanwhile, to prevent dependence on the West in such an important public health issue, the government made efforts toward domestic vaccine production. Plans to manufacture the Salk vaccine in Hungary started to emerge in June 1956, a year after it was introduced in the United States, even though the Health Ministry deemed the production of the vaccine "extremely complicated and expensive" in a report to the Ministerial Council.[42] Before the Health Ministry would take a final stand on the question of polio vaccine production, a study trip abroad to explore the

38. "Ügyészségi Intézkedés a Külföldről Érkező Salk-Szérumról," *Népakarat*, July 7, 1957.

39. Medical parcels coming from abroad were not peculiar to Hungary. A Czechoslovakian Radio Free Europe report from 1954 contains a detailed discussion about foreign medicine parcels and remarks that the health ministry of Czechoslovakia must approve of them reaching their destination. Radio Free Europe, "Information from Czechoslovakia. How the State Gets Hold of Foreign Drugs," in *Bulletin #625* (Budapest: Open Society Archives, 1954); Radio Free Europe, "Polio in Hungary. Background Report" (n. 26), 1.

40. Erzsébet Kertesi, personal communication, May 19, 2009.

41. In Hungarian vernacular, people who left the country illegally due to political reasons, e.g., during the 1956 revolution, or who did not return from a visit to the West were (and remain to be) termed "dissidents." Officially, these people were considered to be traitors and enemies of the communist state.

42. József Román, "Gyermekbénulás Elleni Védekezés," manuscript no. 369/1956 in Román József Egészségügyi Miniszter Iratai XIX-C-n (Budapest: Magyar Országos Levéltár, 1956).

details and receive sufficient training in the process was organized. The destination was Denmark, the European center for polio research.[43] In October 1956 two virologists, Elek Farkas and Sándor Koch, were sent to Copenhagen, accompanied by Gábor Veres, the director of the Humán Vaccine Production and Research Institute. The three delegates spent over a month in Denmark, studying vaccine production and the process of vaccination and presenting their own virus research.[44] While they were away, the revolution erupted in Hungary. Although a significant number of medical professionals left the country during the revolution,[45] the three scientists decided to return home in early November. As Koch remarked, he was a Hungarian and his place was in Hungary. Following the trip to Denmark, Koch had several further opportunities to test his loyalty and commitment to staying in Hungary. In 1961, he went traveled to Paris to work with Nobel Laureate André Lwoff at the Pasteur Institute for a year.[46]

The revolution caused a significant delay to the vaccine production process. It took the delegation over seven months to submit its final report,[47] which was caught up in power struggles between the National Hygiene Institution and the state-owned vaccine-producing company Humán. The two institutions both had a strong record in vaccine research and had been producing vaccines since the 1920s.[48] The Health Ministry

43. In this sense, Denmark can be seen as a Western example of the porous spaces along both sides of the Iron Curtain and demonstrates the way that polio challenged the East–West binaries of the Cold War. György Péteri, in a recent collection on cultural life in the Cold War East, points to the similarly "osmotic" nature of the divide and proposes that the Iron Curtain was rather made of nylon. György Péteri, *Nylon Curtain: Transnational and Transsystemic Tendencies in the Cultural Life of State-Socialist Russia and East-Central Europe*, Trondheim Studies on East European Cultures & Societies (Trondheim: Program on East European Cultures and Societies, 2006).

44. Sándor Koch, Gábor Veres, and Elek Farkas, "Jelentés a Koppenhágai Tanulmányútunkról," manuscript no. 50.911 in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: Hungarian National Archives, 1957), 1.

45. The emigration wave created an obvious deficiency in the numbers of doctors, as shown by the fact that a year later the Health Ministry publicly called on them to return without any retaliation and offered to find them work again. "Két Érdekes Előadással Kezdődött Meg a Balatonfüredi Orvoskongresszus," *Népakarat*, September 27, 1957, 6. There is another explanation, though, for the open call—this type of offer was also a strategy used by the state to lure home and incarcerate revolutionaries.

46. Károly Mezei, ". . . *Isten Van, Az Ember Történik." Koch Sándor Virológussal Beszélget Mezei Károly, Miért Hiszek?* (Budapest: Kairosz Kiadó, 2006).

47. Aladár Kátay, "Koppenhágai Tanulmányútról Jelentés," manuscript no. 51406 in Egészségügyi Minisztérium iratai XIX-C-2-e (Budapest: MOL, 1957).

48. Humán functioned as a department of the Phylaxia Serum Production Co. Ltd., established in 1912, and started producing vaccines for humans in 1924. By 1942, they were

planned to centralize vaccine production and merge the two institutions; however, for years it remained unclear which would remain in charge.[49] Production finally started in 1959 and was short-lived, as a new, live-virus vaccine made an appearance.[50]

Vaccine from the East: Sabin Drops

For the two years following the initial shipment of the Salk vaccine, it seemed that immunization was fully successful. The Health Ministry asked the Foreign Trade Minister to reward the state company that imported the vaccine in the summer of 1957.[51] By November, over one million children were said to have received two doses of vaccine,[52] and by the end of the year, the number of vaccinated children was reported to be 1.2 million.[53] Because the vaccine was seen to have contributed to curbing the epidemic wave, as part of the three-year health care plan and the budget allocation for the next year, the government decided to assign further funds to the acquisition of the Salk vaccine.[54] This way, by the end of 1958, it was

producing fourteen kinds of serums and six vaccines, including a smallpox vaccine, diphteria anatoxin, and antitetanus serum, some of which they exported to Austria, England, Switzerland, and Greece. From 1953, Humán started producing the diphteria–tetanus–pertussis (DTP) vaccine. In 1954, it became an independent institute. The National Institute of Public Health, established with funds from the Rockefeller Foundation in 1927, produced the BCG vaccine and vaccines against rabies, influenza, and typhus. Dr. Hegedűs Lajos, *The History of Humán* (Budapest: Human Pharmaceutical Works, 2003), 14–22.

49. Aladár Kátay, "A Humán Intézet Vírus Osztályának Átköltözése az OKI-ba," manuscript no. 50.189/1957 in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: MOL, 1957); Benyó, "A Humán Vírus-Osztály Átvétele. Feljegyzés Dr. Vilmon Miniszterhelyettes Elvtárs Részére," manuscript no. 50.654 in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: MOL, 1957).

50. Hungarian production was still not able to handle the needs of the whole population, as yet another import was needed to complement the domestic stock. Aladár Kátay, "Vaccination Against Poliomyelitis in Hungary" (paper, Eighth European Symposium on Poliomyelitis, Prague, September 23–26, 1962), 45.

51. "Letter to Jenő Incze Foreign Trade Minister," in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: Hungarian National Archives, 1957).

52. "Egymillió Gyerek Kapott Idén Védőoltást," *Népakarat*, November 27, 1957.

53. Ilona Szeri, Pál Földes, and Szilárd Bognár, "Adatok a Poliomyelitis Elleni Intrakután Védőoltás Kérdéséhez," *Orvosi Hetilap* 100, no. 38 (1959): 1364–65.

54. "Magasabb Összeg Egészégügyre—30 Millió Salk-Vaccinára. Az Egészségügy Hároméves Tervéről És Jövő Évi Költségvetéséről Tárgyalt Az Országgyűlés Szociális És Egészségügyi Bizottsága," *Népakarat*, November 15, 1957, 3.

projected that children from birth to six years would be able to receive all three shots of the vaccine.[55]

In 1958, there was no epidemic and the government celebrated the achievement of immunization. However, a new and severe outbreak in 1959 prompted the state and the medical profession to reevaluate their success, as hundreds of children fell prey to the disease.[56] The Salk vaccine was quickly transformed in the public imagination from being the savior of Hungarian children to an imperfect technology. This process was exacerbated by the appearance of the Sabin vaccine in the Soviet Union. By August 1959, newspapers were starting to write about the arrival of this new vaccine, one that would be even more effective than the Salk vaccine: "a vaccine that was developed based on research by the American Sabin."[57]

The new vaccine was the result of a unique cooperation between the American and Russian scientists Mikhail Chumakov and Albert Sabin, during a particular moment of the Cold War. The slight thaw that followed Stalin's death opened up new opportunities for exchange, and Khrushchev's secret speech against Stalin's rule had significant effects on biomedical sciences as well.[58] For the first time since World War II, medical cooperation between the two superpowers started to become a reality.

The strict control over scientists' foreign travel was not just a feature of the Eastern side of the Iron Curtain. Many American scientists in the 1950s ran into difficulties or were denied, for political reasons, when applying for passports in the United States (up to 1958, a total of six hundred passport applications were denied on political grounds).[59] Sabin's relative freedom in traveling, therefore, was not entirely typical of his time.

55. I. Benyó, "Gyermekbénulás Elleni Folytatólagos Védőoltások Szervezése," manuscript no. 53.135/1957 in Egészségügyi Minisztérium Állami Közegészségügyi Felügyeleti és Járványvédeli Főosztály Iratai XIX-C-2-e (Budapest: Magyar Országos Levéltár, 1957).

56. While the cases were fewer in number than during the severe epidemic of 1957, they climbed higher than any other year before. The epidemic escalated in August, and nearly two thousand patients were paralyzed from polio by the end of the epidemic wave. "Az Egészségügyi Minisztérium Tájékoztatója Az Ország 1959. Évi Július Havi Járványügyi Helyzetéről," *Népegészségügy* 40, no. 9 (1959): 252; "Az Egészségügyi Minisztérium Tájékoztatója Az Ország 1959. Évi Augusztus Havi Járványügyi Helyzetéről," *Népegészségügy* 40, no. 10 (1959): 279–80.

57. Dr. Tibor Bakács, "A Fertőző Betegségek Elleni Küzdelem," *Népszabadság*, August 26, 1959, 4.

58. Konstantin Ivanov, "Science after Stalin: Forging a New Image of Soviet Science," *Sci. Context* 15, no. 2 (2002): 317–38.

59. Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism and the Cold War* (Chapel Hill: University of North Carolina Press, 1999), 276–77.

The scientific exchange between Sabin and Chumakov led to the largest field trial in the history of polio,[60] involving over 16.5 million people across the Soviet Union.[61] Parallel to the Soviet campaign, smaller but equally important trials were conducted in Czechoslovakia and Hungary.[62] In 1958–59, Czechoslovakia organized relatively large field trials of a vaccine prepared from the Sabin strains,[63] while Hungary tested the vaccine in one county in November 1959.[64]

The success of the new vaccines ignited a scientific euphoria, strengthening the sense that science, as putatively objective and universal, could serve as a tool to stop the Cold War and unite humanity in a common struggle. Opening the Sixth Symposium of the European Association of Poliomyelitis in 1959 in Munich, the president of the organization referred to the participating scientists—from twenty-five different countries—as "members of our polio family."[65] Going a step further, at the Fifth International Poliomyelitis Conference in 1960 in Copenhagen, Basil O'Connor (who was president of the American National Foundation for Infantile Paralysis) celebrated the achievements of the cooperation in his opening speech:

> This is a council, not of war, but of victory. Together we have successfully created weapons against a common enemy that bring within our reach a triumph for all mankind—the coming elimination of epidemic paralytic poliomyelitis. We meet now to compare notes on what we have created, to report our experiences and help each other in reaching decisions on the most effective use of those weapons. Your very presence here, from the East, from the West, is proof to the world that in your high calling, in search for the truth that frees man from disease, there is no cold war.[66]

60. While Soviet vaccination campaigns were not strictly controlled trials, they were designed to gain information about the efficacy and safety of the vaccine. Contemporary sources discussed the enterprise alternatively as a "trial," "extensive campaign," or "mass vaccination." See, e.g., "Oral Poliomyelitis Vaccine," *Brit. Med. J.* 2, no. 5247 (1961): 293–94.

61. M. P. Chumakov et al., "Some Results of the Work on Mass Immunization in the Soviet Union with Live Poliovirus Vaccine Prepared from Sabin Strains," *Bull. World Health Organization* 25, no. 1 (1961): 79–91.

62. The Sabin strains had also been tested previously in Singapore (1958) and in Mexico (1959): "Singapore Trial of Live Poliomyelitis Vaccine," *Brit. Med. J.* 1, no. 5138 (1959): 1618–19; "Poliomyelitis Prevention," *WHO Chron.* 14 (1960): 464.

63. Karel Žáček et al., "Mass Oral (Sabin) Poliomyelitis Vaccination: Virological and Serological Surveillance in Czechoslovakia, 1958–59 and 1960," *Brit. Med. J.* 1, no. 5285 (1962): 1091–98.

64. I. Dömök, Elisabeth Molnár, and Ágnes Jancsó, "Virus Excretion after Mass Vaccination with Attenuated Polioviruses in Hungary," *Brit. Med. J.* 1, no. 5237 (1961): 1410–17.

65. H. C. A. Lassen, "Eröffnungsansprache" (paper, Sixth Symposium of the European Association of Poliomyelitis, Brussels, 1959), 6.

66. Basil O'Connor, "The Setting for Scientific Research in the Last Half of the Twentieth Century," in *Fifth International Poliomyelitis Conference*, ed. International Poliomyelitis Congress (Copenhagen, Denmark, 1960), xxi–xxii, quotation on xxi.

This feeling of unity marked the end of a decade in which other domains of science were hindered by Cold War tensions. During the 1950s, the Soviet Union, along with Eastern European countries, had left the WHO in protest against the international agency's politics. Until the early 1960s, biomedical research on inheritance was divided between the opposing theories of Soviet Michurinist biology and Western Mendelist genetics.[67] At the end of the 1950s, however, several projects of internationalism eliciting the neutrality of science and medicine started to unfold, often containing open or underlying Cold War agendas.[68]

Although the development of the live vaccine was the result of intensive cooperation across the Iron Curtain, its implementation followed Cold War fault lines. Several major points of conflict emerged, all of which had significant effects on polio prevention in Hungary and worldwide. Convictions and reservations about the efficacy and safety of the Sabin vaccine divided East and West, while varying health care and economic structures had a direct effect on the choice of vaccine (i.e., whether to stick with the Salk vaccine or change to Sabin), as well as on the speed of introduction and licensing. Furthermore, differences in welfare systems and socialized medicine, sensitive Cold War concerns, influenced the efficiency of vaccine application.

Little more than two weeks after the Hungarian field trials started, the government announced a nationwide vaccination campaign starting in mid-December 1959.[69] This quick acceptance of the brand-new vaccine in Hungary was a marked contrast to the skepticism voiced about the Salk vaccine back in the mid-1950s. In April 1955 in the United States, a number of vaccinated patients, their families, and community contacts were diagnosed with poliomyelitis from a vaccine produced by Cutter Laboratories.[70] This incident had a tremendous impact: it shook public trust in

67. See Nikolai Krementsov, *Stalinist Science* (Princeton, N.J.: Princeton University Press, 1997), 179–83, and Loren R. Graham, *What Have We Learned about Science and Technology from the Russian Experience?* (Stanford, Calif.: Stanford University Press, 1998), 34–35.

68. Marking international, neutral spaces that were reserved for scientific research, the Antarctic Treaty was signed in 1959, followed by the Outer Space Treaty in 1967. Jon Agar, *Science in the Twentieth Century and Beyond*, History of Science (Cambridge: Polity, 2012), 347–48. The World Health Organization launched its highly politicized global malaria eradication program in 1955, and plans for the global eradication of smallpox emerged in 1958. See Randall Packard, "'No Other Logical Choice': Global Malaria Eradication and the Politics of International Health in the Post-War Era," *Parassitologia* 40, nos. 1–2 (1998): 217–29; and Erez Manela, "A Pox on Your Narrative: Writing Disease Control into Cold War History," *Diplomatic Hist.* 34, no. 2 (2010): 299–323.

69. "December 14-én Kezdődnek a Gyermekbénulás Elleni Sabin-Féle Védőoltások," *Népszava*, November 22, 1959, 1.

70. Neal Nathanson and Alexander D. Langmuir, "The Cutter Incident: Poliomyelitis Following Formaldehyde-Inactivated Poliovirus Vaccination in the United States during the Spring of 1955," *Amer. J. Epidemiol.* 78, no. 1 (1964): 109–40.

the vaccine and changed vaccine regulation and control in the United States.[71] In connection with the Cutter incident, a Hungarian newspaper article in 1955 (based on an article in the French newspaper *l'Humanité*) argued, "The effectiveness of a new vaccine can be established only after a long time and numerous experiments. It is a dramatic fact that due to such negligence many thousands of children became the guinea pigs of the savage protectors of free enterprise."[72] Four years, two epidemics, and a revolution later, the Hungarian press was not so squeamish about time and number of experiments. There was a greater need for vaccination that actually worked.

Concern over the safety of the Salk vaccine was soon ameliorated by the growing number of success stories in curbing the escalating tendencies of polio epidemics in Europe and the United States thanks to immunization. While knowledge about the rate of efficacy and recommended dosage remained in flux, by 1957 the Hungarian government could rely on a wide-ranging international experience of two years, reported in the pages of medical journals and at international polio conferences, for the decision-making process of importing the vaccine and immunizing the nation.

In the case of the Sabin vaccine, the context could not have been more different. There was no comparable international experience or clear success stories that could reassure Hungarian scientists and the political leadership. Not one country had begun national mass vaccination by the fall of 1959, and due to the novelty of the vaccine, there were no long-term observations determining the percentage of the population who would be protected against the three polio strains. Merely two large-scale trials, albeit involving millions of vaccines, provided evidence of the efficacy and safety of the new product.

However, this time the trials were all conducted on home ground, so to speak—on the "right" side of the Iron Curtain. Intensive scientific cooperation among Eastern European countries and the Soviet Union, fostered greatly during the years of inactive membership of the WHO between 1949 and 1957,[73] made it possible for Hungarian scientists to monitor live polio vaccine trials in the Eastern Bloc from the very begin-

71. Oshinsky, *Polio* (n. 5); Paul A. Offit, *The Cutter Incident: How America's First Polio Vaccine Led to the Growing Vaccine Crisis* (New Haven: Yale University Press, 2005); and James Colgrove, *State of Immunity: The Politics of Vaccination in Twentieth-Century America* (Berkeley: University of California Press, 2006).

72. Quoted in "Background Report on Polio in Hungary," Radio Free Europe Information Service (Budapest: Open Society Archives, 1957).

73. The Soviet Union, followed by Eastern European countries, withdrew its membership between 1949 and 1957. Since, according to the founding document of the WHO, it is not possible to leave the organization once a country joins, these countries became "inactive members." During these years, Eastern European countries signed bilateral agreements

ning and to gain direct information about the results by participating in personal visits.[74]

While proximity and the role of the East in the vaccine trials played a large part in the quick adaptation of the Sabin vaccine, these cannot serve as the sole explanations. As the story of the Salk vaccine's introduction shows, Hungarian scientists were able to take on-site visits to manufacturing labs in the West and were participants in the increasingly intensive circulation of scientific knowledge about polio. In this sense, Western scientific contacts, established before and after the communist takeover, furthered the establishment of trust in Western technology.[75] Moreover, by the late fall of 1959, Salk vaccine production in Hungary had already started in preparation for the following year.

As the memoir of Hungarian pediatrician Domokos Boda shows, the Cold War divide could have surprising effects: trust in Western and distrust in Eastern technology. Boda was part of the delegation sent to Moscow to investigate the new vaccine in order to inform the Hungarian government's choice between the Salk and Sabin vaccines. He recounted meeting a group of Soviet virologists on his arrival; they were ardently against the introduction of the new vaccine in the Soviet Union. They argued that the Salk vaccine could be considered safe, since the Americans tested it on their own people. The Sabin vaccine was a solution that the Americans did not wish to test on their own society; therefore, it must be considered as potentially dangerous. As Boda remembered, some even went so far as to consider the introduction of the Sabin vaccine to be part of a scheme by the Americans to destroy millions of Soviet children, cutting future

---

to advance scientific cooperation in health-related issues and epidemic control. See, for instance, "A Magyar Népköztársaság Kormánya És a Csehszlovák Köztársaság Kormánya Között Az Egészségügyi Együttműködésre Vonatkozóan Létrejött és Budapesten 1955. Április 28. Napján Aláírt Egyezmény," in A Minisztertanács üléseinek jegyzőkönyvei XIX-A-83-a (Budapest: Magyar Országos Levéltár, 1957); *The First Ten Years of the World Health Organization* (Geneva: World Health Organization, 1958).

74. The efficiency and safety of live virus vaccines were highly debated in the pages of medical journals all over the world, as were doubts over the efficiency of the Salk vaccine. Fears of an attenuated virus turning virulent, questions of how vaccine efficiency was measurable in the case of a disease that ebbs and tides, and issues pertaining to the method of comparison between dead and live virus vaccines sparked discussions among virologists and public health specialists before, during, and after vaccine tests.

75. The Hungarian trust in the Salk vaccine in this aspect is similar to what Michael Z. David explores in his work on the introduction of the BCG vaccine into the Soviet Union. The Western connections with individual scientists were important to the establishment of trust in the controversial vaccine, which was adopted in the Soviet Union without much professional resistance. David, "Vaccination Against Tuberculosis with BCG:A Study of Innovation in Soviet Public Health," in *Soviet Medicine: Culture, Practice, Science*, ed. Frances L. Bernstein, Christopher Burton, and Dan Healey (DeKalb: Northern Illinois University Press, 2010), 132–55.

generations short and thereby weakening the nation.[76] With these sentiments, the Soviet scientists were expressing more general frustrations that often arise with the appearance of new vaccines: the potential to cause disease and harm.[77]

If some Soviet scientists themselves trusted the Western vaccine more than their own, how was Hungary to proceed? "My colleagues and I were in a difficult situation," Boda wrote. "It would be impossible to use the Sabin vaccine in Hungary if the official Soviet view was known. After agonising, we recommended the Sabin vaccine and kept quiet about the controversy."[78] The fact that the Sabin vaccine arrived from the East, therefore, cannot alone explain the speedy implementation and fast decision making of the Hungarian government. A more plausible explanation is that the communist government could not afford another demonstration of the limits of its power by a new epidemic that would be decidedly out of their control. After the severe epidemic of 1959, it became clear that Salk vaccination did not fulfill the hopes of curbing polio in Hungary: despite a widespread campaign, the disease rampaged through the country. The government needed to act fast. To this end, the rapid introduction of a new vaccine that promised to eradicate polio seemed the only choice.

Cold War Fault Lines

Mass vaccination with the live polio vaccine quickly spread in Eastern Europe, as Czechoslovakia extended its existing vaccination program to the national level and Bulgaria, Yugoslavia, and East Germany followed suit in 1960. Other European countries started using the live vaccine in the years 1962 and 1963.[79] The rate was slower in the case of the United States. While it took U.S. authorities an incredibly brief two hours to license the Salk vaccine in 1955,[80] it took almost three years for the American Public Health Service to do the same for the live vaccine.[81]

76. Domokos Boda, *Sorsfordulók* (Budapest: Harmat, 2004), 63–64.

77. The mass, experimental use of the Sabin vaccine did not go uncontested in the Soviet Union. Inner power struggles marked the preparation of the trial, as Chumakov's letters to Sabin attest. Quoted in Benison, "International Medical Cooperation" (n. 4), 474–75.

78. Domokos Boda, "50 Years Ago: Polio Epidemics, Immunisation, and Politics," *Brit. Med. J.* 340 (2010): b5297

79. S. G. Drozdov, "The Contemporary Poliomyelitis Situation in Europe" (paper, European Symposium on Virus Diseases Control, 1966, Geneva.

80. Oshinsky, *Polio* (n. 5), 207.

81. The Secretary of Health, Education and Welfare was responsible for licensing, acting on the recommendation of the Surgeon General. The latter was advised by the National Institutes of Health and the Division of Biologics Standards. Subcommittee on Health and Safety of the Committee on Interstate and Foreign Commerce, *Polio Vaccines. First Session on*

While the introduction of a new vaccine depended on various factors, such as health care structures, countries' individual experiences with vaccination, and concerns over efficacy and especially safety,[82] Cold War considerations played a large part in the Western evaluation of the vaccine. Just as some Soviet virologists did not trust the Western Salk vaccine, Americans had similar reservations about the vaccine from the Soviet side. The most pressing questions about this Cold War scientific feat were these: Could the Russians be trusted? Would their data be false? Did the new vaccine actually work?

To resolve the issue of scientific trustworthiness and to bridge Cold War suspicions, the WHO, already highly interested in global disease eradication, sent an American specialist from Yale, Dorothy M. Horstmann, to the Soviet Union to report on the safety of the vaccine and the validity of the trials.[83] The idea for the visit actually came from the United States: John R. Paul, renowned virologist and polio expert at Yale University, suggested his colleague to the Division of Communicable Diseases at WHO and to Mikhail Chumakov.[84] Since 1954, the health agency had established a role for itself in coordinating poliomyelitis research and aiding the circulation of information about statistics, epidemiology, field trials, and laboratory investigation;[85] it was happy to fulfill the American request for the validation trip.[86] Its task of scientific evaluation, despite being a facilitator of Cold War tensions, fit into this self-proclaimed role of bridging local and global in public health issues.[87]

Developments with Respect to the Manufacture of Live Virus Polio Vaccine and Results of Utilization of Killed Virus Polio Vaccine, March 16 1961 (Washington, D.C.: Government Printing Office, 1961), 3–4.

82. Elaborate debates on vaccine efficacy and safety unfolded in the pages of medical journals, particularly the *British Medical Journal*, and at professional meetings such as the International Poliomyelitis Conferences from the beginning of the Salk field trials in 1955. Fears over whether the Sabin strains could turn virulent raised caution among public health decision makers in several countries. See Lindner and Blume, "Vaccine Innovation and Adoption," (n. 12).

83. Dorothy Horstmann, "Report on Live Poliovirus Vaccination in the Union of Soviet Socialist Republics, Poland and Czechoslovakia" (Geneva: World Health Organization, 1959).

84. A. M.-M. Payne, "Letter to John R. Paul," 1959, Dorothy Millicent Horstmann Papers, Sterling Memorial Library, Yale University, New Haven; John R. Paul, "Letter to A. M.-M. Payne," 1959, Horstmann Papers; John R. Paul, "Letter to Mikhail Chumakov," 1959, Horstmann Papers.

85. Executive Board, "The Co-ordinating Role of WHO in Poliomyelitis Research" (Geneva: World Health Organization, 1954).

86. Payne, "Letter to John R. Paul" (n. 84).

87. This was not the first instance of an international health agency taking on the task of validating vaccine trials. Clifford Rosenberg has recently argued that the League of

Between August 26 and October 17, 1959, Horstmann visited Poland, Czechoslovakia, and several Soviet republics to gather information on-site about the vaccine trials. The WHO delegate voiced overall satisfaction in her report on the Soviet Union. She saw no reason to doubt the level of surveillance of polio cases during the trial and judged the Sabin vaccine to be safe. However, Horstmann did admit that it was difficult to say how effective the vaccine was since many of the subjects had previously received the Salk vaccine and too little time had elapsed since the trial to draw definite conclusions.

If skepticism about the Russian results was rooted in Cold War distrust of the East, Horstmann's report used a very similar set of tools to dissolve doubts and validate those same results. She drew upon two powerful notions that were connected to communist countries: the centralized, totalitarian state and its submissive citizens.

Horstmann highlighted the role of a centralized and state-operated public health system in successfully organizing such a trial: a critical difference between East and West that was frequently mobilized in Cold War rhetoric on both sides. "The scope and magnitude of the live poliovirus vaccine programmes . . . are of a type peculiarly fitted to the manner in which the medical profession is organized under the Ministries of Health in these countries. For such mass programmes it is necessary to have a Medical Service organized almost on a military basis, particularly from the epidemiologic surveillance and Public Health stand point."[88] In the Soviet case, a state and health care system that was centrally controlled from top to bottom could be capable of organizing a project on a mass scale and at the same time vouch for the rigor and scrutiny that was expected from such a scientific trial. This, implied Horstmann's report, was the upside of a totalitarian communist regime.

With this argument, Horstmann addressed persistent questions about effective disease management that challenged concepts of Western superiority in medical research and care. In 1948, at the First International Poliomyelitis Conference in New York, Herbert J. Seddon of Oxford University pointed out that "at the present time there is more than enough dictatorship in the world and we do not want to add to it. Yet there is no doubt that the cheapest and best way of dealing with poliomyelitis is to have organizations in readiness headed by men of acknowledged

---

Nations Health Organization issued guidelines on clinical research for vaccine developers that eventually led to the largest vaccine trial of its time: Calmette's trial of the BCG vaccine in Algiers. Rosenberg, "The International Politics of Vaccine Testing in Interwar Algiers," *Amer. Hist. Rev.* 117, no. 3 (2012): 671–97.

88. Horstmann, "Report on Live Poliovirus Vaccination" (n. 83), 99.

competence, who, for a limited time, are permitted a very large measure of authority."[89] The merit of certain autocratic measures in successfully preventing or treating disease, and the frustrations that this perception caused in Cold War thinking, became a recurring issue in the history of polio, most prominently in the trials and evaluations of the Sabin vaccine.

Indeed, the Sabin vaccine was (and still is) at its most potent when applied en masse over a short period of time. Dictatorships and centralized governments—at least theoretically—would be able to mobilize their resources and population quickly and efficiently for such an endeavor. Moreover, free, mass vaccination was a cherished symbol of universal health care in which Eastern European countries took pride, but in some parts of the Western world it was perceived as the devil itself. As David Oshinsky points out, health officials in the United States connected this system of prevention with socialized medicine, "one of the great bugaboos of the cold-war era."[90] In this reading, health care ideology could be seen as another reason for the U.S. reluctance to use the Sabin vaccine widely when it first appeared.

Leading Hungarian virologist Tibor Bakács remembers being puzzled as to why the United States had not switched to the Sabin vaccine when socialist countries had already done so in 1959. He posed this question to Sabin himself, when the professor was visiting the State Institute of Hygiene in 1960. According to Bakács's memoir,

> He gave a short, but thought-provoking answer: "Sir! In the West vaccine production is mainly in private hands. These have, since 1954, since Salk has discovered his vaccine, been producing that with great capacity. They hoped to gain a huge profit from the production and distribution of this first, partially effective vaccine. Although my vaccine is more efficient, they do not produce it until there are significant Salk-vaccine supplies waiting to be sold. Until these are depleted, they will not start the mass production of the Sabin-drops." Only socialist countries chose to abandon their existing Salk-vaccine supplies. This is the reason why there were still big epidemics in the rich, Western countries in the 1960s.[91]

While Sabin's reply was most probably influenced by a decade-long conflict with Jonas Salk and the American funding bodies, and Bakács might have interpreted Sabin's words in a way that conformed to his own sentiments, the success of the Sabin vaccination in Hungary became a recur-

89. Herbert J. Seddon, "Economic Aspects of the Management of Poliomyelitis," in *First International Poliomyelitis Conference* (New York: Lippincott, 1948), 35.

90. Oshinsky, *Polio* (n. 5), 241.

91. Tibor Bakács, *Egy Életrajz Ürügyén* (Budapest: Kossuth Könyvkiadó, 1978), 202.

ring example when emphasizing the superiority of socialist over capitalist countries. Seven years after the vaccination program started, Vilmos Kapos, director of the Budapest Public Health and Epidemiology Station, still felt it necessary to remark on the international significance of the Sabin vaccine in an internal party meeting in 1966: "The social implications of the fight against epidemic diseases are demonstrated with the fact that while in Socialist countries the occurrence of polio could be reduced to the minimum with the use of the free and effective Sabin vaccine, the results of capitalist countries, due to economic problems, do not come even close to this."[92] The Hungarian success in polio vaccination was thus celebrated as a triumph of the entire system of political ideology, welfare, and economic structure. It became the ultimate proof of the superiority of communist values and their system.

By 1969, polio had been practically eradicated in Hungary,[93] ten years before the United States achieved the same result. The end of polio in Hungary meant the end of intensive scientific cooperation and interaction between the two antagonistic worlds. The success of one vaccine over another became a symbol of superiority in health care systems and economic status. Long gone was the figure of the West German pilot, the packages of vaccines crossing borders, and the iron lungs flying over the Iron Curtain. As the age of polio ended for many of the countries involved in the Cold War, so did cooperation against the common microscopic enemy. The holes in the Iron Curtain were patched up and the division between East and West again became prominent once the polio problem was "solved."

92. Vilmos Kapos, "Jelentés a Főváros Közegészségügyi Járványügyi Helyzetéről," in *MSZMP Budapesti pártértekezletei 1957–1989 XXXV.1.a.2* (Budapest: Budapest City Archives, 1966), 436.

93. The last wild polio outbreak in Hungary occurred in 1966 in an isolated Roma community, and the last polio case was registered in 1969. The last polio case in the United States was recorded in 1979. The Global Polio Eradication Initiative (led by the WHO, Rotary International, the U.S. Centers for Disease Control and Prevention, and UNICEF) was launched in 1988 and is the authority that issues polio-free certification. Polio eradication in a country or region is defined as the absence of wild poliomyelitis transmission for three consecutive years. The Americas were certified as free of polio in 1994, the Western Pacific in 2000, and Europe in 2002. "Global Polio Eradication Initiative" (World Health Organization), http://www.polioeradication.org/Posteradication/Certification.aspx; I. Dömök, "Experiences Associated with the Use of Live Poliovirus Vaccine in Hungary, 1959–1982," *Rev. Infect. Dis.* 6, suppl. 2 (1984): S413–18; and Beatrix Kapusinszky, "Molecular Genetic Examination of Paralytic Type 3 Poliovirus Isolates and Molecular Epidemiology of Non-Polio Enteroviruses in Hungary" (Ph.D. diss., Eötvös Loránd University of Science, 2010), 1.

The spaces of scientific cooperation on a wider level also narrowed, as polio disappeared from the global North. The National Foundation for Infantile Paralysis looked for a new grand project to utilize its public relations machinery and scientific networks.[94] The last international poliomyelitis conference was held in 1960, while the last Symposium of the European Association for Poliomyelitis took place in 1962.[95]

However, the window of cooperation that polio opened between East and West had long-term effects and continued to influence disease prevention strategies long after that cooperation ceased to exist. The Hungarian model of "blanket" vaccination—that is, mass vaccination of the whole population in the course of a short time—eventually became the basis for global polio eradication.[96] Drawing on the success of smallpox eradication after 1980, plans for the eradication of polio that had started to form in the late 1950s reemerged. The World Health Assembly passed a resolution in 1988 on the eradication of the disease from the planet and set the year 2000 as the target. The Global Polio Eradication Initiative, backed by significant private funds, has been based on mass immunization with oral live poliovirus vaccines. Thus, polio again formed a basis for coordination in the final years of the Cold War, building on vaccines developed as part of the cooperation between East and West in its early years.

In many ways, then, the story of polio did not finish with the end of its outbreaks, neither in Hungary nor at the international level. The disease continued to challenge the social and political makeup of Hungary decades after the last polio cases occurred in the country. Furthermore, polio shows that holes in the Iron Curtain continued to open and close throughout the dynamic relationship between East and West during the Cold War.

94. As a major postpolio project, Jonas Salk, along with Basil O'Connor and other prestigious scientists, established the Salk Institute, with a declared goal of bridging the sciences and humanities for "the advancement and unification of knowledge relevant to the health and well-being of man." The Cold War politics of the endeavor are explored in Elena Aronova, "Studies of Science Before 'Science Studies': Cold War and the Politics of Science in the U.S., U.K., and the U.S.S.R., 1950s–1970s" (Ph.D. diss., University of California, San Diego, 2012), quotation on 127.

95. María Isabel Porras, María José Báguena, and Rosa Ballester, "Spain and the International Scientific Conferences on Polio," *Dynamis* 30 (2010): 91–118.

96. Harry F. Hull, Maureen E. Birmingham, Bjorn Melgaard, and Jong Wook Lee, "Progress toward Global Polio Eradication," *J. Infect. Dis.* 175, suppl. 1 (1997): S4–9.

Dora Vargha's research and publications focus on international epidemic management in the Cold War era from an Eastern European perspective. She completed her Ph.D. in history at Rutgers University and is currently a post-doctoral research associate in the Wellcome-funded project "The Reluctant Internationalists: A History of Public Health and International Organisations, Movements and Experts in Twentieth Century Europe" at Birkbeck, University of London.