

# HYGIEA INTERNATIONALIS

An Interdisciplinary Journal  
for the History of Public Health



Volume 11, No. 1, 2015

Special Issue

Poliomyelitis after Poliomyelitis:  
Lights and Shadows of the  
Eradication





HYGIEA  
INTERNATIONALIS

An Interdisciplinary Journal  
for the History of Public Health

Volume 11, No. 1, 2015

ISSN, Print: 1403-8668; Electronic: 1404-4013  
URL: <http://www.ep.liu.se/ej/hygia/>

## Editorial Board

Giovanni Berlinguer, University of Rome “La Sapienza”, Italy  
Virginia Berridge, London School of Hygiene and Tropical Medicine, U.K.  
Patrice Bourdelais, École des Hautes Études en Sciences Sociales, France  
Linda Bryder, University of Auckland, New Zealand  
Marcos Cueto, Instituto de Estudios Peruanos, Peru  
Christopher Hamlin, University of Notre Dame, U.S.A.  
Robert Jütte, Robert Bosch Stiftung, Germany  
Øivind Larsen, University of Oslo, Norway  
Marie C. Nelson, Linköping University, Sweden  
Dorothy E. Porter, University of California, U.S.A.  
Günter B. Risse, University of California, U.S.A.  
Esteban Rodriguez-Ocaña, University of Granada, Spain  
John Rogers, Uppsala University, Sweden  
Jan Sundin, Linköping University, Sweden  
Lars-Göran Tedebrand, Umeå University, Sweden  
John H. Woodward, The University of Sheffield, U.K.

## Editorial Committee

Laurinda Abreu, Patrice Bourdelais,  
Jan Sundin and Sam Willner

## Copyright

This journal is published under the auspices of Linköping University  
Electronic Press. All Authors retain the copyright of their articles.

© The Authors

# Table of Contents

Volume 11, No. 1, 2015

Sam Willner	Foreword	5
Juan Antonio Rodriguez	Introduction (Guest Editor)	7
Adrian Carbonetti, Lila Aizenberg Marina Laura Rodriguez	Poliomyelitis in the city of Córdoba: Morbidity, knowledge and the research performed by a medical elite in Argentina's interior, 1943-1953	33
Adriana Álvarez	History of a strategy to eradicate poliomyelitis in Uruguay and Argentina	53
Rosa Ballister Maria-Isabel Porras Maria-José Báguena	The eradication of poliomyelitis in Spain: projects, obstacles, achievements, realities	71
Juan Antonio Rodriguez Inez-Guerra Santos	Denial, oblivion and new fears: poliomyelitis and the post-polio syndrome in the Spanish and Portuguese press (1995-2009)	93
Dilene Raimundo do Nascimento	Poliomyelitis vaccination campaigns in Brazil resulting in the eradication of the disease (1961-1994)	131
Axel M Klohn Philippe Chastonay	Guaman Poma de Ayala's "New chronicle and good government": A testimony of the indigenous populations in XVIth century Peru	147
Virigine De Luca Barusse	Foreign bodies in the Nation: The "health problem of immigration" in France during the interwar period	163



# Preface

Sam Willner

**W**e are pleased to present this thematic issue of *Hygiea Internationalis* dealing with the fight against polio in South America and the Iberian Peninsula and to welcome the guest editor professor Juan Antonio Rodriguez from the University of Salamanca introducing the thematic articles.

Besides the thematic issue we are also pleased to present two separate articles.

Axel Klohn and Philippe Chastonay from Switzerland are presenting a contemporary indigenous testimony on the demographic catastrophe in early colonial Peru, based on an extensive manuscript by Guaman Poma de Ayala discussing possible causes for the extinction of large parts of the native population as a consequence of the colonial policy.

Professor Virginie De Luca Barrusse from Paris examines “the health problems of immigration” as revealed by French hygienists in the interwar period from an approach reflecting how immigrant health “becomes the issue of reflection and of public protest as well as a target for public action.”

Finally I will also invite the readers to submit articles dealing with the history of public health to coming issues of *Hygiea Internationalis*.





# Poliomyelitis after Poliomyelitis: Lights and Shadows of the Eradication an Introduction

By Juan Antonio Rodríguez-Sánchez

## Introduction

In October of 2013 the European Centre for Disease Prevention and Control raised the alarm about the possibility of the reintroduction of the polio virus in the European Region: Syria, a country absent poliomyelitis cases since 1995, presented new cases due to the deterioration of the health conditions during the internal armed conflicts.<sup>1</sup> This situation brought about the reappearance of the wild poliovirus type 1 in Israel,<sup>2</sup> which as qualified in the scientific literature as a “silent reintroduction”.<sup>3</sup>

The European Region (according to the classification of the WHO) had obtained the eradication certificate for poliomyelitis in 2002, which is why the reappearance of the virus on the shores of the Mediterranean has posed serious questions and reflection about the eradication plan<sup>4</sup> and old fears have resurfaced in

---

1 European Centre for Disease Prevention and Control, “Suspected outbreak of poliomyelitis in Syria: Risk of importation and spread of poliovirus in the EU”, *Rapid Risk Assessment*. 23 October 2013. Cited 2014 Jan 17. Available from: <http://www.ecdc.europa.eu/en/publications/Publications/RRA%20poliomyelitis%20Syria%2021%2010%202013.pdf>.

2 European Centre for Disease Prevention and Control, “Expert consultation on scientific evidence linked to polio virus in Israel and Syria”, *Meeting Report*. 5 November 2013. Cited 2014 Jan 17. Available from: <http://www.ecdc.europa.eu/en/publications/Publications/Expert%20consultation%20mtg%20report%20-%20polio%20Israel%20Syria%20-%20final.pdf>.

3 E. Kaliner, J. Moran-Gilad, I. Grotto, E. Somekh, E. Kopel, M. Gdalevich, E. Shimron, Y. Amikam, A. Leenthal, B. Lev and R. Gamzu, “Silent reintroduction of wild-type poliovirus to Israel, 2013 – Risk communication challenges in a argumentative atmosphere”, *Euro Surveill*, 19(7) (2014), 1–7. Cited 2014 Mar 5. Available from: <http://www.eurosurveillance.org/images/dynamic/EE/V19N07/art20703.pdf>

4 D. Heymann and Q. Ahmed, “The polio eradication end game: what it means for Europe”, *Euro Surveill*, 19(7) (2014), 1–7. Cited 2014 Mar 5. Available from: <http://www.eurosurveillance.org/images/dynamic/EE/V19N07/art20702.pdf>

Occidental society towards an illness that, although it was far too easily forgotten, left a lasting impression on the central decades of the 20<sup>th</sup> century,<sup>5</sup>

Poliomyelitis is an infection which is produced by an enterovirus, of the picornaviridae family, denoted poliovirus and having 3 different serotypes (named 1, 2 and 3). Although 95% of infections proceed asymptotically and create immunity in the individual, the remaining cases can produce an effect in the central nervous system, and even, a destruction of the motor neurons which leads to paralysis, especially of the extremities and preferentially the lower ones. This form of Poliomyelitis called paralytic, and is seen in only 0.1% of cases of infection by poliovirus and its most serious form is when it affects the respiratory, intercostals and the diaphragm musculature and causing death if patient is not put on mechanical ventilation<sup>6</sup>. It was precisely the paralytic form in children for which no immunity had been developed which gave the illness a particular significance in demolishing the dream of an invulnerable first world society, stigmatized several generations with sequaelae which changed the way people with motor disabilities were viewed and how they saw themselves, something that permitted, finally, to go beyond the medical model of disability. The cultural imprint was accompanied by iconic elements such as the iron lung which joined the orthopedic devices with which they hoped to return their gait, as well as a definitive association between vaccination and childhood.

Despite the existence of references throughout the history of humanity,<sup>7</sup> it didn't evolve epidemically until the contemporary period and especially the 20<sup>th</sup> century, paradoxically in the countries with the most developed Health Services and lower child mortality – known as Payne's Phenomenon – given that contact with the poliovirus was belatedly produced when the child found itself unprotected by the immunity provided by breast feeding. Between 1921 and 1955 an expansion was

---

5 The two major references for the general history of polio are: John R. Paul, *A History of Poliomyelitis* (New Haven, 1971); Mathew Smallman Raynor and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication* (Oxford, 2006). The most relevant focus in the history of polio has been North America, and especially the United States, where it is necessary to highlight the monographs by Naomi Rogers, *Dirt and Disease: Polio before FDR* (New Brunswick, 1992) and David M. Oshinsky, *Polio: An American Story* (New York, 2005). Other works will be cited in the next pages.

6 Jeffrey I. Cohen, "Enterovirus y reovirus", in A. Fauci et al., eds, *Harrison Principios de Medicina Interna* (Madrid, 2012, 17 ed.), I:1208–1213. J.F. Modin, "Poliovirus", in G.L. Mandell, J.E. Bennett and R. Dolin, *Enfermedades Infecciosas. Principios y Práctica*, (Madrid, 2002, 5 ed.), pp. 2305–2315. V.R. Racaniello, "One hundred years of poliovirus pathogenesis", *Virology*, 344 (2006), 9–16.

7 It is obligatory in any history of poliomyelitis to include the image of the Egyptian monument of Roma, priest of Astarte, which exhibits a characteristic poliomyelitis leg. Dating from the 18 dynasty, between 1403 and 1365 approximately around the reign of Amenophis III.

witnessed, reaching its peak in the second half of the 50s and beginning of the 60s.<sup>8</sup> This tendency was reverted thanks to the appearance of 2 types of vaccine.

The injectable vaccine by Jonas Salk (which contained an inactivated virus: IPV) provided the first effective intervention in the halting of the epidemic since the great campaign carried out in the United States in 1955.<sup>9</sup> However, to achieve a collective immunity and interrupt the transmission of the wild poliovirus, an attenuated vaccine was necessary – like that investigated by Hilary Koprowski<sup>10</sup> – which while containing a minimum risk of producing the illness (VAPP), it also had the clear advantage of being able to transmit the immunization passively to unvaccinated people if a high enough percentage of the population was reached. In this way, fundamentally through the investigations of Albert Sabin, results were seen, at the end of the 50s, diverse oral vaccination (OPV) campaigns which owing to its form of administration, were easier to apply, more economical, produced intestinal immunity and allowed the multiplication and excretion of the vaccine virus with the effect of group immunization<sup>11</sup>.

Humans being the only reservoir for poliomyelitis meant that the appearance of this attenuated oral vaccine made the eradication of said virus possible. The global projects of the WHO had a singular aim in the Expanded Program on Immunization (EPI), started in 1974, with the objective of vaccination availability

---

8 §Mathew Smallman-Raynor and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication* (Oxford, 2006), pp. 187–428.

9 Jonas Salk and his discovery have occupied a preferential place in scientific biographies, neighboring sometimes in the hagiography: the historic moment of the appearance of the vaccine, its interpretation in key policy (compared to vaccines such as Sabin's, linked to the sphere of socialist countries), the renounce of the rights of patent, the results obtained in the USA or , even the empty space left in the pantheon of live scientist after the death of Alexander Fleming in 1955, are some of the elements to understand how his figure has eclipsed the other investigators.

10 Hilary Koprowski and Stanley Plotkin, “History of Koprowski Vaccine Against Poliomyelitis”, in Stanley A. Plotkin, ed., *History of Vaccine Development* (New York, 2011), pp. 155–166. Hilary Koprowski and Stanley Plotkin, “Histoire alternative du vaccin oral”, in Anne-Marie Moulin, dir., *L'aventure de la vaccination* (Paris, 1996), pp. 299–310.

11 In 1959, the First International Conference on Live Poliovirus Vaccine gave an account of 20 campaigns carried out in 15 countries. (Joseph L. Melnick, “The Picornaviruses”, in F. Fenner and A. Gibbs, eds, *Portraits of Viruses. A History of Virology*. (Basel, 1988), pp. 147–188. Joseph Melnick and Stanley Plotkin, “Oral Polio Vaccine and the Results of Its Use”, in Stanley A. Plotkin, ed., *History of Vaccine Development* (New York, 2011), pp. 167–177). Those implemented in some Latin American countries were reported on by Sabin himself (Albert B. Sabin, “Oral poliovirus vaccine: history of its development and use and current challenge to eliminate poliomyelitis from the world”, *Journal of Infectious Diseases*, 151(3) (1985), 420–436. Lee Hampton, “Albert Sabin and the Coalition to Eliminate Polio from the Americas”, *American Journal of Public Health* 99: 1 (2009), 34–44). Vaccinations as ideological instruments during the Cold War period and the role of Sabin's vaccine are analysed by Dora Vargha, “Between East and West: Polio Vaccination across the Iron Curtain in Cold War Hungary”, *Bulletin of the History of Medicine*, 88(2) (2014), 319–343.

in every country. The success of Smallpox eradication encouraged the implementation of even more ambitious plans: in 1982, James P Grant motivated by UNICEF “The Child Survival Revolution”, supported by GOBI (an acronym of 4 interventions in child health, whose letter “I” corresponded to “immunization”) and in 1988, the 41<sup>st</sup> World Health Assembly began the Global Polio Eradication Initiative (GPEI), a resolution with the aim of poliomyelitis eradication by the year 2000 and in answer to the private initiative set up three years earlier by Rotary International: The Polioplus Program. The magnitude of the project required the participation of various state and private bodies. Successes<sup>12</sup> and errors of provision<sup>13</sup> aside, its presence continues with the goal of world health<sup>14</sup>.

Nevertheless, the particular characteristics of the poliomyelitis virus and the oral attenuated virus vaccine not only promoted the eradication but have also obligated us to reconsider some concepts: despite the elimination of the wild poliovirus in vast geographical areas, it is difficult to consider the eradication if vaccine-derived poliovirus still circulate which are capable of producing new infections and, even epidemic outbreaks.<sup>15</sup> The advent of the artificial synthesis of polio by Wimmer, Cello and Paul,<sup>16</sup> who reconstructed it in vitro from sequential elements of oligonucleotides, incorporated a new element into the debate. Control, elimination, eradication and extinction take on nuances in which a world without the polio virus, a definite “endgame” appears difficult to envision.

## Chronologies of Polio: Beyond the Epidemiological Perception

In an attempt to understand the evolution of poliomyelitis on a global scale, a variety of authors have coincided in establishing, at least, five stages: one, prior to

---

12 Attaining the eradication certificates in the different regions of the WHO also points to a chronology of success: 1994 (South American Region), 2000 (Western Pacific Region), 2002 (European Region) and 2014 (Southern Asian Region). The disappearance of wild poliovirus 2 and currently of type 3, indicates significant advances.

13 The eradication programs were set up with fixed dates and deadlines to achieve said objectives, but have had to be systematically postponed.

14 World Health Organization, *Polio Eradication & Endgame Strategic Plan 2013–2018* (Geneva, 2013). Cited 2014 Mar 23. Available from [http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP\\_EN\\_US.pdf](http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP_EN_US.pdf)

15 Neal Nathanson and Olen M. Kew, “From Emergence to Eradication: The Epidemiology of Poliomyelitis Deconstructed”, *American Journal of Epidemiology*, 172 (2010), 1213–1229. Walter R. Dowdle, “The principles of disease elimination and eradication,” *Bulletin of the World Health Organization*, 76: Suppl. 2 (1998), 22–25.

16 J. Cello, A.V. Paul, E. Wimmer, “Chemical Synthesis of Poliovirus cDNA: Generation of Infectious Virus in the Absence of Natural Template”, *Science*, 297: 5583 (2002), 1016–1018.

the epidemics (until 1880), followed by another period of appearance of localized epidemic outbreaks (until 1920) and a subsequent stage of increase and global expansion that ran until 1955 at the moment that Jonas Salk's vaccine permitted the dawning of a new era known as retreat.<sup>17</sup> For the Geographers Smallman-Raynor and Cliff, this would last until 1988, the year in which the aforementioned WHO program gave rise to a period with global eradication still inconclusive. However, for the microbiologists/virologists Nathanson and Kew other phases are distinguished: 1973 would bring to a close an emblematic stage (the eradication of the wild poliovirus in the United States), followed by a lengthy period, until the year 2000, of progress towards global eradication. A phase of challenges to the eradication arose in the years 2000 to 2010 and since the year 2000 a period characterized by problems derived from the oral vaccine has been established.<sup>18</sup>

It is an undeniable fact the usefulness of this chronology, structured by epidemiological data, which allows us to identify endemism, increase or remission and link them to specific interventions mediated by the public health policies. However, as has been demonstrated, poliomyelitis is far more than an infection, due to its cultural impact (and economic) of its paralytogenic effects in the infant population. As such, other possible approaches exist because –as written by Jan Sundin in the first issue of this magazine – the history of Public Health is an interdisciplinary field that goes beyond approximations exclusively demographic and epidemiological.<sup>19</sup> The constructivist vision provokes us to consider elements which would allow the establishment of different chronologies as a function of the social and cultural significance of polio in the West.

The great polio epidemics, especially those of the 40s to the 60s, mark the turning point in the social consideration of polio. Previously, before these epidemics, polio had been the source of attention for the scientific community, but –only since the epidemic outbreaks in the countries of North America and Europe– did poliomyelitis become part of the social imaginary as an illness associated with childhood and motor disability, the price of prosperity and progress (the “middle class plague”), the fear of the illness and the behavior patterns characteristic of epidemics as analyzed by Rosenberg.<sup>20</sup>

---

17 Mathew Smallman-Raynor and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication* (Oxford, 2006).

18 Neal Nathanson and Olen M. Kew, “From Emergence to Eradication: The Epidemiology of Poliomyelitis Deconstructed”, *American Journal of Epidemiology*, 172 (2010), 1213–1229.

19 Jan Sundin, “Why Hygiea Internationalis?”, *Hygiea Internationalis*, 1(1) (1999), 5–7, p. 6.

20 Charles Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (New York, 1992), pp. 293–304.

The appearance of the vaccines of Salk and Sabin rapidly changed this perception, and in spite of sporadic incidents (like the Cutter case),<sup>21</sup> their convincing results restored confidence in science stuffed with triumphalism. From this moment onwards the struggle against polio is not only an objective of the Public Health system assumed by the State, but by a united public, who made it their responsibility to ensure the correct implementation of the vaccination guidelines, bearing in mind the relationship between vaccination and infancy.

The initial optimism led many countries to set elimination deadlines for polio, internationally shared. This phase offered a major disparity between what the scientific community and the national and international bodies considered with respect to polio and what the public perceived, because polio at that time was only visible through the consequences it produced and not through the surfacing of new cases. Public Health policies were put to the test during this period, when the illness began to associate itself with poverty stricken areas, economically downtrodden or segregated for other reasons social groups, with restricted access to sanitary services and lacking in health education. In the social imaginary the significance of polio changed rapidly, and despite the marked persistent fear of the same, the illness changed its sense, taking on characteristics which associated it with “the others”.

This perception was emphasized when polio was considered to be an eradicable disease and global programs were started for this end. The receipt of certificates of eradication ratified the progressive introduction of the idea that polio is an “other people” illness that belongs in far away regions of the world, a distant illness tied to poverty and non-culture; polio as a developing countries illness. Those countries are often referred to as needy recipients of international assistance (with scarce questioning of the ways of the same) and habitually are perceived as threatening a reintroduction of the virus in the West. However, for society as a whole the onset of a rapid forgetfulness of poliomyelitis has grave consequences such as the appearance of anti-vaccinationist tendencies, the invisibility for people suffering the consequences of polio and the difficulties in the recognition of post-poliomyelitis syndrome and the denial of the rights of those afflicted by it.

## The Problems of Polio

Poliomyelitis offers itself as an opportunity to examine the role of history *in* public health.<sup>22</sup> One of the most significant examples in history and its methods as tools

---

21 Paul A. Offit, *The Cutter Incident. How America's First Polio Vaccine Led to the Growing Vaccine Crisis* (New Haven, 2005).

22 Virginia Berridge, “History in Public Health: a New Development for History?”, *Hygiea Internationalis*, 1(1) (1999), 23–35. E. Perdiguer, J. Bernabeu, R. Huertas, E. Rodríguez-

for public health constitutes the previously quoted work of deconstruction of the epidemiology of poliomyelitis carried out by Nathanson and Kew,<sup>23</sup> in which the analysis of long epidemiological series and of the abundant scientific literature generated allowed them to identify the principal problems in the understanding of the infection, its epidemics and the fight against them. Starting from a chronology which clarifies the last ten years in different phases marked by the consequences of the vaccinations, the authors proposed seven questions for the understanding of polio for which they then searched for answers. Some of them allowed a connection to be formed between the articles in the present dossier and problems present in the struggle against polio.

One of the conditions which has determined the greater or lesser possibility of eradication of the polio virus has been the seasonality. Tropical climates allow for much longer periods when the transmission of the virus flourishes and in competition with other enteroviruses, at the time that the attenuated oral vaccine was at that moment more temperature sensitive than in the present. That presented major difficulties in many countries for immunization of the population only through the system of campaigns and a greater risk of the reintroduction of the virus. The persistence of wild poliomyelitis would be determined by viral epidemiology (the absence of seasonality in tropical countries, the coexistence with diarrheal diseases, high density population and bad sanitary health services, which facilitates transmission), the failure of the oral vaccine (for its own coexistence with frequent diarrhea due to the enterovirus and for the lower efficiency of the trivalent inoculation) and finally, for the material difficulty of vaccination, but also for ideological resistance.

It still hasn't been the object of an adequate historical analysis other than the problems identified by Nathanson and Kew and that which only begins to supply information in the present century. It deals with the epidemic outbreaks produced by the vaccine-derived poliovirus. Although the events in Egypt are documented since 1988, it will be the event on the island of Hispaniola (Haiti and the Dominican Republic), in 2000 and 2001, which is the first to arouse interest, while

---

Ocaña, "History of health, a valuable tool in public health", *Journal of Epidemiology and Community Health*, 55 (2001), pp. 667–673, p. 667.

23 Neal Nathanson and Olen M. Kew, "From Emergence to Eradication: The Epidemiology of Poliomyelitis Deconstructed", *American Journal of Epidemiology* 172 (2010), 1213–1229. Nathanson, from Global Health Program Office, School of Medicine, University of Pennsylvania, had published, together with Martin, an article in 1979 in which they question some epidemiological characteristics of poliomyelitis (Neal Nathanson and J.R. Martin, "The epidemiology of poliomyelitis: enigmas surrounding its appearance, epidemicity, and disappearance", *American Journal of Epidemiology*, 110(6) (1979), 672–692). Thirty years later, they revisit those questions search for an explanation in history.

the most serious are produced in Nigeria from 2005.<sup>24</sup> We must realize that the cases of poliomyelitis which allowed the identification of these outbreaks were cases of poliomyelitis that proceeded with paralytic forms and it is estimated that the vaccine-associated paralytic poliomyelitis is one case in every 2.5 million administered doses, though the risk does rise by some two thousand times in situations of immunodeficiency.<sup>25</sup> We would find ourselves therefore, with new forms of the poliovirus circulating which have recovered their virulence and infective capacity. The fact that the oral vaccine itself provides immunity from these derived-polioviruses directs the offense strategy to increase vaccination in order to achieved full coverage of the population.<sup>26</sup> However, we now confront a new problem: the eradication of polio will not be so if we substitute the wild poliovirus for other vaccine-derived poliovirus. This leads the authors to consider the final problem, which will be the post-eradication strategy and which would have to go through a substitution of the oral vaccination for the dead virus injectable vaccine, more expensive and more complex in its administration, although all the research is currently directed towards obtaining a cheaper form, combined with other viruses and an intradermal application.

On the contrary, its epidemiological perspective leaves out of its objectives the analysis of one of the most serious problems currently in polio: its long term repercussions. Beyond the crippling immediate consequences produced by the virus, the awareness of the existence of post-polio syndrome confronts us with a reality with important public health implications, especially in societies with scarce social sanitary coverage that jeopardizes the quality of life of affected people.

## The History of Polio, History of the Present

From what we have seen above we can infer that the historical study of poliomyelitis is a rich model in the history of illness steeped in complexity and with a current interest for public health: we find ourselves before a recent pandemic, of grand dimensions which has become the objective for the development of a major global scale public health program to achieve its eradication, which is why historical analysis is compulsory before proposing new interventions of such a magnitude in

---

24 Michael B.A. Oldstone, *Viruses, Plagues, and History. Past, Present, and Future* (New York, 2010), pp. 159–195, p. 160. Bernard Seytre and Mary Shaffer, *The death of a disease: a history of the eradication of poliomyelitis* (New Brunswick, 2005), pp. 132–147.

25 Jeffrey I. Cohen, “Enterovirus y reovirus”, in A. Fauci et al., eds, *Harrison Principios de Medicina Interna* (Madrid, 2012, 17 ed.), I:1208–1213, p. 1209.

26 José Elías García-Sánchez, Enrique García-Sánchez, Enrique García-Merino and María José Fresnadillo-Martínez, “La polio, el largo camino hacia el final de la partida”, *Enfermedades Infecciosas y Microbiología Clínica*. In print. Cited 2015 Mar 17. Available from <http://dx.doi.org/10.106/j.eimc.2014.10.005>



other diseases. In an attempt to reach this goal problems have arisen and challenges have been faced which make us pause for reflection on eradication, epidemiology and public health.

Poliomyelitis doesn't only grant us detailed historical demographic studies, but also constitutes an excellent field to study the social construction of the illness and the power relationships, the expert knowledge and the professionalism. The history of medical technology has shown itself to be especially effective when applied to poliomyelitis either in the role of vaccine, iron lung or orthopedic devices. As generating disease of motor disability is a subsidiary of fruitful approaches from disability studies, they are intimately linked to the history of the body and gender studies.<sup>27</sup> If we join to this the peculiarity that many of who suffered from the infection are still alive, polio has invited a focused history from experience and illness narratives.<sup>28</sup>

On the whole, these implications of the history of poliomyelitis derives its framework in the history of the present.<sup>29</sup> Without getting involved in the debates about the special historicity of the present, the definition of the temporal significance of this historical perspective or the place of memory in history and the role of witness (to quote only some controversial aspects), it is easy to understand that the researcher who deals with poliomyelitis delves into experienced history,<sup>30</sup> in which the illness, its consequences and the sufferers are current. That persistence of polio or those who live with the after-effects underline that concept of the history of the present as an analysis of ongoing processes, inconclusive history or under construction. Principally, those affected people, but including those who are connected professionally or emotionally, who, conscious of being historical subjects and having valuable memories, claim the right to question the significance of their historical action.<sup>31</sup> The acceptance of the experience and subjectivity are intimately entwined with the transformation of the relationship between doctor and patient, with the incorporation of the expert patient knowledge.<sup>32</sup> Post-polio syndrome is

---

27 José Martínez-Pérez, "Presentación: la poliomyelitis como modelo para el estudio de la enfermedad en perspectiva histórica", *Asclepio*, 61(1) (2009), 7–21.

28 Roy Porter, "The Patient's View: Doing Medical History from Below", *Theory and Society*, 14(2) (1985), 175–198.

29 Juan Antonio Rodríguez-Sánchez, "La historia de la poliomiélitis, historia del presente", *Temperamentvm*, 16 (2012). Cited 2013 Jan 30. Available from: <http://www.index-f.com/temperamentum/tn16/t2712.php>

30 "Historia vivida", according to Aróstegui (Magdalena González, "La teorización de Julio Aróstegui sobre la historia del tiempo presente como historia vivida", *Hispania Nova*, 13 (2015), 126–133.

31 Josefina Cuesta Bustillo, "La historia del tiempo presente: estado de la cuestión", *Studia Historica. Historia Contemporánea*, 1 (1983), 227–241.

32 Juan Antonio Rodríguez-Sánchez, "La persona enferma como experta: los cambios sociosanitarios promovidos por el asociacionismo polio-postpolio en España", *Estudios do Século XX*, 12 (2012), 104–122. M. Siegler, "La relación médico-paciente en la era de la medicina de

probably the most illuminating case, where the history of the present as a space of confluence between past and future acquires its sense, between memory and expectations<sup>33</sup> and where the social demand for a commitment from the historian to develop critical thinking is perceived with greater clarity.

## The History of Poliomyelitis in Ibero-America

In the present dossier we approach the history of poliomyelitis in a vast, diverse geographical space while having strong historical and cultural nexuses, made up of the countries of the Iberian Peninsula and by those of the Atlantic coast in South America. The presence of the illness (its incidence, significance and imaginaries), its outbreaks and the fight against it (especially the prevention through vaccination campaigns) are studied in Argentina, Uruguay and Brazil, Portugal and Spain, between 1943 and the present. In those articles how the objective of control and eradication of poliomyelitis is shaped and its relation to the global programs and the consequences of these achievements in the general population and in affected people in particular are analyzed.

On the Iberian Peninsula diverse research projects have been under development since 2005, coordinated by Rosa Ballester, on the history of polio<sup>34</sup> and into which they have been integrating eight Spanish universities and two Portuguese ones. There poliomyelitis has been approached from diverse perspectives and historical angles in which the scientific, professional and social repercussions of the disease, contextualized with the European and international framework have been contemplated.<sup>35</sup>

---

gestión”, in *Limitación de prestaciones sanitarias* (Madrid, 1997), pp. 44–64. J. Jovell, “El paciente del siglo XXI”, *Anales del Sistema Sanitario de Navarra*, 29: supl. 3 (2006), 85–90.

33 François Bedarida, “Definición, método y práctica de la Historia del Tiempo Presente”, *Cuadernos de Historia Contemporánea*, 20 (1998), 19–27. Julio Aróstegui, *La historia vivida. Sobre la historia del presente* (Madrid, 2004), p. 102: the present would be the history experienced by every subject and by their social collective, and it extends to their past perception and the expectation about their own future.

34 *La poliomiélie en la España del siglo XX: repercusiones científicas, profesionales y sociales*. Funding Entity: MCYT. Proyectos I+D. Reference: HUM2005–073788–C03. Duración: 2005–2008; *Enfermedades emergentes y comunidades de pacientes*. Funding Entity: MICIIN. Proyectos nacionales de Promoción del Conocimiento. Plan Nacional de I+D+I. Duración: 2009–2012. Reference: HAR2009–14068–C03. *El reto de la erradicación de la poliomiélie y la amenaza del síndrome post-polio: estrategias nacionales y acciones globales en la lucha contra la enfermedad y la discapacidad (1963–2010)*. Funding Entity: MINECO. Duración: 2013–2015.

35 The results of these projects have been published in two dossiers in renamed specialized magazines (José Martínez-Pérez, coord., “La poliomiélie y sus contextos: experiencias colectivas e individuales ante la enfermedad en el siglo XX”, *Asclepio*, 61(1) (2009), 7–192; Rosa Ballester and María Isabel Porras, eds, “Políticas, respuestas sociales y movimientos asociativos

In contrast, the eradication of poliomyelitis in the Americas Region in 1994 has attracted an disproportionate amount of attention from historians, with great attention paid to northern countries and much less to the rest, without this level of disinterest being justified by a lower rate of incidence. What is clear is the fact that in the United States the epidemic outbreaks were early, intense and successive for over than half a century which marked that society with a cultural imprint reaffirmed by the figure of a president, Franklin Delano Roosevelt, affected by the illness. But it is equally true that since the 30s, and fundamentally, in the 50s there existed epidemics of special virulence in the Southern Cone. Thus the studies carried out by Dilene Raimundo and the development team demonstrated, from 2002, the project “A história da poliomielite e de sua erradicação no Brasil”, whose results were captured in diverse publications among them one which highlights a group effort, the first of its kind, which collected research from diverse authors about Brazil, Peru, Portugal, Spain and Pakistan.<sup>36</sup>

Another group effort arose from a round table discussion held a year later during the Congress of Spanish Society of the History of Medicine, coordinated by Adriana Alvarez, Maria Isabel Porras and Maria Jose Baguena, entitled “International perspectives of health in Latin America. Programs, methods and local experiences in the struggle against poliomyelitis (1930–1960)”, during which the cases from Costa Rica, Brazil, Mexico, Cuba and Argentina were analysed.<sup>37</sup>

Precisely it is Argentina, the country which, along with Cuba and the aforementioned Brazil, has provoked the most interest in historians, especially centered on the epidemic outbreaks and the publically developed policies to fight against the infection, before and after the emergence of the vaccine, with the work of Karina Ramacciotti, the already mentioned Alvarez and Daniela Testa, who focus on the imaginaries and social response to the affected people with poliomyelitis sequelae.<sup>38</sup> Cuba’s case is of obvious interest, being the first country to

---

frente a la poliomielitis: la experiencia europea”, *Dynamis* 32(2) (2012), 273–414) and collective books (María Isabel Porras Gallo, Mariano Ayarzagüena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista* (Madrid, 2013).

36 Dilene Raimundo de Nascimento, org., *A história da poliomielite* (Rio de Janeiro, 2010).

37 Adriana Álvarez, María Isabel Porras Gallo and María José Báguena, coords., “Perspectivas internacionales de la salud en la América Latina. Programas métodos y experiencias locales en la lucha contra la poliomielitis (1930–1960)”, in María Isabel Porras et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica* (Ciudad Real, 2011), pp. 233–261.

38 Karina Inés Ramacciotti, “Las sombras de la política sanitaria durante el peronismo: los brotes epidémicos en Buenos Aires”, *Asclepio*, 58(2) (2006), 115–138. Adriana Álvarez, “Parálisis y acción’: el caso argentino frente a los brotes de poliomielitis de mediados del siglo XX”, in María Isabel Porras et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica* (Ciudad Real, 2011), pp. 259–261. Daniela Testa, “Poliomielitis: la ‘herencia maldita’ y la esperanza de la rehabilitación. La epidemia de 1956 en la ciudad de

apply mass campaigns of the oral vaccine in 1962 and in so doing eradicated polio that same year.<sup>39</sup> Once again epidemiology and vaccination are the focal point of interest.

In spite of Chile,<sup>40</sup> Peru,<sup>41</sup> Costa Rica<sup>42</sup> and Mexico<sup>43</sup> also having something to say in the history of polio, its battle and its eradication, the lack of attention which a large part of the Americas region receives remains puzzling, despite pioneering the eradication of the disease. The encyclopedic work of Kohn makes reference to not a single epidemic outbreak in Ibero-America (for Spain or Portugal either),<sup>44</sup> the Cambridge World History of Human Disease hardly dedicates a paragraph to the mention of vaccination programs in Argentina, Brazil, Chile, Costa Rica, Cuba, Nicaragua and Paraguay<sup>45</sup> and even the great and voluminous work of Smallman-Raynor and Cliff muster only twelve pages of information about vaccination in Latin America and the Caribbean, although it does include some references to epidemic outbreaks on previous pages.<sup>46</sup> Perhaps the only point of attention,

---

Buenos Aires”, *Instersticios*, 5(2) (2011), 309–323; Daniela Testa, “La lucha contra la poliomielitis: una alianza médico-social, Buenos Aires, 1943”, *Salud Colectiva*, 8(3) (2012), 299–314; Daniela Testa, “*Curing by doing*: la poliomielitis y el surgimiento de la terapia ocupacional en Argentina, 1956–1959”, *História, Ciências, Saúde – Manguinhos*, 20(4) (2013), 1571–1584; Daniela Testa, “El síndrome pos-polio y sus anudamientos en el pasado”, *Instersticios*, 8(1) (2014), 233–248.

39 However, the works of Más Lago and Enrique Beldarraín speak of subsequent cases of unvaccinated children, the suspicion of interruption of wild poliovirus circulation in 1967 and its confirmation from 1970. P. Más Lago, “Eradication of poliomyelitis in Cuba: a historical perspective”, *Bulletin of the World Health Organization*, 77(8) (1999), 681–687. Enrique Beldarraín, “Poliomyelitis and Its Elimination In Cuba: An Historical Overview”, *MEDICC Review*, 15(2) (2013), 30–36. Cited 2014 Jan 23- Available from <http://www.medicc.org/mediccreview/index.php?issue=24&id=302&a=va>

40 Enrique Laval, “Anotaciones para la historia de la poliomielitis en Chile”, *Revista Chilena de Infectología* 24(3) (2007), 247–250.

41 Deepak Sobti, Marcos Cueto and Y. He, “A public health achievement under adversity: the eradication of poliomyelitis from Peru, 1991”, *American Journal of Public Health*, 2014, 104(12), 2298–2305.

42 Ana Paulina Malavassi Aguilar, “Representaciones sobre la epidemia de poliomielitis en el periódico *La Nación*. Costa Rica, 1954”, in María Isabel Porrás et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica* (Ciudad Real, 2011), pp. 237–239.

43 Ana María Carrillo, “Vacunación y educación higiénica en la campaña contra la poliomielitis en México”, in María Isabel Porrás et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica* (Ciudad Real, 2011), pp. 247–251.

44 George C. Kohn, *Encyclopedia of Plague and Pestilence: From Ancient Times to the Present* (New York, 1995).

45 Kenneth F. Kiple, ed., *The Cambridge World History of Human Disease Past and Present* (Cambridge, 1993), p. 949. Kenneth F. Kiple, ed., *The Cambridge Historical Dictionary of Disease* (Cambridge, 2003).

46 Mathew Smallman-Raynor and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication* (Oxford, 2006), pp. 511–523.

embedded in triumphalist rhetoric, has been the frequent inclusion of the photographs of Peruvian child Luis Fermin Tenorio as the last affected soul in the Americas Region. The necessity for new studies are therefore confirmed, and above all, publications that halt the concealment of the sanitary situation in non-English speaking countries.<sup>47</sup>

## Polio: Towards a Comparative History of the Present Time

The history of the present was given incentive by the resurgence, from the 70s of the last century, of a new political history in which reflection on power, beyond that of the institutionalized, was bound with society and culture. The history of poliomyelitis and, more concretely, of the international projects to combat it is an appropriate theme for approximations in which the tensions produced between the international sanitary organizations and their policies and the application of the same on a national level are explored. This dialogue between local and international levels is also produced in the universalization of scientific knowledge. In his study of poliomyelitis in the Argentinian province of Cordoba, Adrián Carbonetti analysis in this dossier the role of local social factors in the autochthonous production of expert knowledge. The acceptance of foreign knowledge on poliomyelitis (that is to say from North American and European science) is not static, producing a fresh signification of this and the creation of their own research strategies.

However, the most emphasized characteristic of the sanitary policies with regards to poliomyelitis was the adoption of international commitments in the fight against the same one that they led, in 1988, the ambitious global eradication (the Global Polio Eradication Initiative), which Ballester, Porras and Baguena analyse in their article on the Spanish case in its European context. Various talking points are produced on international bodies which affect the strategies to combat poliomyelitis: the WHO's own composition meant that up to the 60s global eradication projects were not established (smallpox being the first, successful and, as such, encouraging), a composition that was also influential in the commitment by the Primary Healthcare signed in Alma-Ata in 1978 and partially failed, with inevitable consequences in the form of vaccination and the organization of

---

<sup>47</sup> Three different research networks are focused on History of diseases (which include polio): Red de Estudios Histórico-Comparativos de la Medicina y la Salud Pública Latinoamericanas, Red de Viejas y Nuevas Enfermedades de la Asociación Latino-Americana de Población y la Red Iberoamericana de Investigación en Historia de la Poliomiélitis y el Síndrome Post-Polio.

epidemiological security.<sup>48</sup> One final point to consider is one which arises from the WHO crisis in the 80s and drives a progressive increase in nongovernmental funding, a very significant fact in the participation of different organizations in the eradication of polio (National Governments in coordination with the four spearheading partners -WHO, UNICEF, Rotary International and the Centers for Disease Control and Prevention- to which others can be added, such as the World Bank or the Bill & Melinda Gates Foundation) or in the Global Alliance for Vaccines and Immunization (GAVI).<sup>49</sup> In our case the role conducted by the Pan American Health Association (PAHO) acquires a special interest, as much in the heart of the WHO as in its work for the eradication of polio in the Americas Region (even facing its criteria to those of the international bodies), the first to achieve the certificate in 1994.<sup>50</sup> This contextualization of the Spanish case with the European and Global strategies allow a reflection on the necessity to go beyond of the collective studies to carry out comparative studies which permit the analysis of the role of local determining factors and the acceptance and application of global strategies, their adaptation and results obtained. Although the national studies can illustrate many of these aspects, it is the comparative perspective which detects critical elements for the research. The well-known article by Lindner and Blume about the development of vaccines (IPV and OPV) and the adoption of one kind or another in the United Kingdom (England and Wales), the Netherlands and West Germany, shows three different processes of introduction and use. Their analysis of the intensity of the epidemic, organization of the health services and its financing, the production (state or private) of the vaccine and the activities (scientific and political) towards it, international relations, and above all, the existence of prior national developments with respect to the illness and the vaccination are some of the elements which authors claim enrich the comparative studies.<sup>51</sup>

---

48 Marcos Cueto, “Los orígenes de la Atención Primaria de Salud y la Atención Primaria Selectiva de Salud”, in Marcos Cueto and Víctor Zamora, eds, *Historia, Salud y Globalización* (Lima, 2006), pp. 27–58.

49 Theodore M. Brown, Marcos Cueto and Elizabeth Fee, “The World Health Organization and the Transition From ‘International’ to ‘Global’ Public Health”, *American Journal of Public Health*, 96(1) (2006), 62–72.

50 Miguel Armando Mosquera Gordillo, Natalia Barón Cano and Rosa Ballester Añón, “El camino hacia la erradicación de la poliomielitis a través de la Organización Panamericana de la Salud”, *Revista Panamericana de Salud Pública*, 36(3) (2014), 185–192. Lee Hampton, “Albert Sabin and the Coalition to Eliminate Polio from the Americas”, *American Journal of Public Health*, 99(1) (2009), 34–44. Marcos Cueto, *El valor de la salud. Una historia de la OPS* (Washington, 2004).

51 Ulrike Lindner and Stuart S. Blume, “Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955–1965”, *Medical History*, 50 (2006), 425–446.

For the comparative polio study in Ibero-America, despite the study being pioneered for Brazil and Peru, aforementioned,<sup>52</sup> and others for the Iberian Peninsula,<sup>53</sup> a specific proposal still doesn't exist, although there exists a framework with a solid scientific foundation and meticulously organized by an ample international team, coordinated by Emilio Quevedo, for the comparative study of public health, health professions and their relationship with society,<sup>54</sup> Adriana Alvarez was appointed to this project, and in his article about poliomyelitis in Argentina and Uruguay, highlights the complexity of comparative studies between countries which show marked differences themselves internally according to geographical areas. Through the analysis of health policies, vaccination programs and epidemiological data, we can compare the evolution of the illness in both countries during the governments of Peron and Batlle and their great epidemic strategies to combat the outbreaks of the mid 50s.

Furthermore, from the comparative perspective the representation of poliomyelitis and post-polio syndrome are tackled in the Spanish-Portuguese press by Guerra and Rodriguez –Sanchez. If contemporary history has always counted on the press as a relevant source, then the history of the present finds facts about the influence in its public and political agendas, with the effect of a configuration of identities. Post-polio Syndrome, dealt with by the comparative study, exemplifies the vicious circles established: the absence of collectives and social movements for polio-affected people leads to their invisibility in the Portuguese press and this disappearance causes a spread of misinformation across public society (and worse still, of the people affected) about the existence of the syndrome. To this must be

---

52 Dilene Raimundo do Nascimento, Marcos Cueto, Eduardo Ponce Maranhão and Deepak Sobti, “A erradicação da poliomielite na América Latina: comparando Brasil e Peru”, in Dilene Raimundo de Nascimento, org., *A história da poliomielite* (Rio de Janeiro, 2010), pp. 161–176.

53 Sandrine Martins Pinto, Inês Guerra, Juan Antonio Rodríguez-Sánchez, João Rui Pita y Ana Leonor Pereira, “De las campañas de vacunación al calendario vacunal: el Programa Nacional de Vacinação português y las Campañas Nacionales de Vacunación Antipoliomielítica en España (1963–1976)”, in Ricardo Campos Marín, Ángel González de Pablo, María Isabel Porras Gallo y Luis Montiel, eds, *Medicina y poder político* (Madrid, 2014), pp. 203–209. Juan Antonio Rodríguez-Sánchez, Rosa Ballester Añón and Inês Guerra Santos, “El movimiento asociativo: una perspectiva internacional, nacional y de los casos de Madrid, Valencia y Castilla – La Mancha”, in María Isabel Porras Gallo, Mariano Ayarzagüena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista* (Madrid, 2013), pp. 233–257. João Rui Pita and Juan Antonio Rodríguez-Sánchez, “Actitudes ante la polio en España y Portugal: estudio comparativo”, in Teresa Ortiz et al., eds, *La experiencia de enfermar en perspectiva histórica* (Granada, 2008), pp. 331–334.

54 Emilio Quevedo, Mario Hernández, Claudia Cortés and Juan Carlos Eslava, “Un modelo para armar: Una propuesta metodológica para abordar el estudio comparativo de la historia de la salud pública, de las profesiones de la salud y de sus relaciones de doble vía con la sociedad”, *Revista de Ciencias de la Salud*, 11(3) (2013), 295–321.

added its effect in relation to social movements and in relation to the creation and reconstruction of identities.

## Memory, Testimony and History of Polio in Light of Post-Polio Syndrome

In fact, a characteristic of the history of the present is the coexistence of territories which are troublesome to demarcate: history, investigative journalism and memory narratives<sup>55</sup>. Poliomyelitis has not only been common to its focus, but it has illustrated them prolifically. The vaccines, their trials and the incidents during their application has given rise to controversies that have elicited approaches from investigative journalism which have exalted the figure of Jonas Salk<sup>56</sup> or has related Koprowski's trials with the origin of HIV,<sup>57</sup> linked diverse cancers with the contamination of the vaccines by the SV40,<sup>58</sup> or even in the poliomyelitis outbreaks from the vaccine-derived polioviruses.<sup>59</sup> In such cases, history and journalism can, when the approximations are rigorous, be very close to the mark: share multiple sources, respond to social demand, and contrast documents and testimonies in search of their veracity.<sup>60</sup>

However, an extant illness, whose survivors have been scarred by paralytic effects, invite us to convert their memory into one of the pillars of history. The autobiographical narratives have frequently interlaced in an effort to recover a collective memory like in the cases of Black<sup>61</sup> and Shell,<sup>62</sup> which acquired major historical aspiration in that of Sass<sup>63</sup> and Wilson<sup>64</sup> coming from the fulfillment and

---

55 Montserrat Huguet Santos, "Historia del Tiempo Presente e Historia de las Relaciones Internacionales", *AYER*, 42 (2001), 43–69.

56 Jeffrey Kluger, *Splendid Solution. Jonas Salk and the Conquest of Polio* (New York, 2004)

57 Edward Hooper, *The River: A Journey to the Source of HIV and AIDS* (Boston, 1999).

58 Debbie Bookchin and Jim Schumacher, *The Virus and the Vaccine. Contaminated Vaccine, Deadly Cancers, and Government Neglect* (New York, 2004). A review in the scientific literature: Michele Carbone, Paola Rizzo and Harvey I. Pass, "Simian virus 40, poliovaccines and human tumors: a review of recent developments", *Oncogene*, 15 (1997), 1877–1888.

59 Bernard Seytre and Mary Shaffer, *The death of a disease: a history of the eradication of poliomyelitis* (New Brunswick, 2005).

60 Montserrat Huguet Santos, "Historia del Tiempo Presente e Historia de las Relaciones Internacionales", *AYER*, 42 (2001), 43–69.

61 Kathryn Black, *In the Shadow of Polio. A Personal and Social History* (Cambridge, Mass., 1996).

62 Marc Shell, *Polio and its Aftermath. The Paralysis of Culture* (Cambridge, Mass., 2005). *Cfr.* Rosa Ballester, "Entre la metáfora y la realidad. Discapacidad e identidad en la historia de la poliomiélitis", *Dynamis*, 28 (2008), 419–425.

63 Edmund J. Sass, *Polio's Legacy. An Oral History* (Lanham, Maryland, 1996).

64 Daniel J. Wilson, *Living with Polio. The Epidemic and its Survivors* (Chicago, 2005).



analysis of interviews of affected people<sup>65</sup>. Memory archives as a baseline for an oral history of poliomyelitis have been frequent in United States<sup>66</sup> and Canadian<sup>67</sup> historiography, making the experience – including the emotions – one of the most enriching aspects in the history of the illness. Adding to this as much the contributions framed as historical research or as journalistic research have been developed on many occasions by people affected by polio, incorporating new nuances on motivation and subjectivity, memory and history, commitment and activism.<sup>68</sup>

Abundant motives hamper our field of research, the Ibero-American space, we count on autobiographical publications, and moreover there are developing projects, many of whose objectives are articulated in an oral history setting. Dilene Raimundo has led some of these projects<sup>69</sup> which have generated an archive of testimonials available online.<sup>70</sup> Her article in this dossier concerning the eradication of poliomyelitis in Brazil tells of one of these testimonies to focus on one of the aspects which usually serve as a corollary in the majority part of the historical accounts on poliomyelitis: post-polio syndrome. The threat of the syndrome gravitates in almost every work centered on the testimonies, establishing the worry for those, who having fought for the consideration of the disability as functional diversity, become ill once more.<sup>71</sup>

---

65 The testimonies of scientists are usually written memoirs published in collective works: Anne-Marie Moulin, dir., *L'aventure de la vaccination* (Paris, 1996). Thomas M. Daniel and Frederick C. Robbins, eds, *Polio* (Rochester, 1997). Stanley A. Plotkin, ed., *History of Vaccine Development* (New York, 2011).

66 Tony Gould, *A Summer Plague. Polio and its Survivors* (New Haven, 1995). Julie Silver and Daniel J. Wilson, *Polio Voices. An Oral History from the American Polio Epidemics and Worldwide Eradication Efforts* (Westport, Connect, 2007).

67 Sally Aitken, Helen D'Orazio and Stewart Valin, eds, *Walking Fingers. The Story of Polio and Those Who Lived with It* (Georgetown, Ontario, 2004).

68 Serve as examples Aitken, Wilson, Smith, Gould, Shell or Sass.

69 A história da poliomielite e de sua erradicação no Brasil (Programa Estratégico de Pesquisa da Casa de Oswaldo Cruz, Conselho Nacional de Pesquisa de Brasil). A erradicação da poliomielite. Uma história comparada: Brasil e Peru (Edital Universal 01/2002-CNPq).

70 Anna Beatriz de Sá Almeida, Laurinda Rosa Maciel and Dilene Raimundo do Nascimento, *Memórias da Poliomielite: acervo de depoimentos orais*. 2005. Available from: <http://www.bvspolio.coc.fiocruz.br/polio/brasil/acervo/memoriaPoliomielite/index.htm>.

71 Heather Green Wooten, *The Polio Years in Texas. Battling a Terrifying Unknown* (Texas, 2009). Sally Aitken, Helen D'Orazio and Stewart Valin, eds, *Walking Fingers. The Story of Polio and Those Who Lived with It* (Georgetown, Ontario, 2004). Julie Silver and Daniel J. Wilson, *Polio Voices. An Oral History from the American Polio Epidemics and Worldwide Eradication Efforts* (Westport, Connect., 2007). Daniel J. Wilson, *Living with Polio. The Epidemic and its Survivors* (Chicago, 2005), pp. 228–251. Edmund J. Sass, *Polio's Legacy. An Oral History* (Lanham, Maryland, 1996). Marc Shell, *Polio and its Aftermath. The Paralysis of Culture* (Cambridge, Mass., 2005), pp. 206–210. Tony Gould, *A Summer Plague. Polio and its Survivors* (New Haven, 1995).

If the problems in achieving an authentic eradication of poliomyelitis make it necessary to revisit the past, post-polio syndrome presents one of the major current challenges that should be approached from the point of view of the stories of the people who have lived through the illness and its aftermath, as well as the social significance which the disease has had. Post-polio syndrome exceeds the mere medical and scientific pursuit in that it influences some key elements of the cultural construction of polio in western society: if the person with poliomyelitis sequelae has symbolized the triumph of effort, of will, of the mind over body (and so they have individually assumed this continuous challenge to demonstrate their capacity), the appearance of the syndrome is borne as a failure, a setback and a loss of meaning for the vital project. However, in contrast to that society which is bending over backwards to find a solution to the threat which children suffered and to assist in their rehabilitation, the person with post-polio syndrome confronts obscurity and abandonment in many parts of the world. The necessity to complete this process of eradication, the much announced “endgame”, diverts attention from the consequences of polio that linger on, affecting the world free of polio.<sup>72</sup> Exclusively in this context is it possible to conceive of a syndrome that (in spite of being extensively studied by Dalakas and Halstead and internationally debated since the 80s)<sup>73</sup> wasn’t included in the International Classification of Diseases until the year 2010,<sup>74</sup> and to all intents and purposes, faced with the problems of low prevalence diseases.<sup>75</sup> Similarly, it is the people affected who lead social movements in which the role of the expert patient is revalidated, with the help of new virtual social networks, search for and organize the information that many health professionals worldwide are ignorant of.

Poliomyelitis, despite the continually strengthening perception of it as an illness of the past, continues to cause problems for the present public health system and challenges for the immediate future. The answers, more than in any other case, pass necessarily through interdisciplinary areas in which history provides vital keys and can still illuminate multiple aspects open for investigation.

---

72 Nora Ellen Groce, Lena Morgan Banks and Michael Ashley Stein, “Surviving polio in a post-polio world”, *Social Science & Medicine* 107 (2014), pp. 171–178.

73 Tony Gould, *A Summer Plague. Polio and its Survivors* (New Haven, 1995), pp. 209–217.

74 International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10 Version:2010). Available from: <http://apps.who.int/classifications/icd10/browse/2010/en> Chapter VI. Diseases of the nervous system (G00–G99). Systemic atrophies primarily affecting the central nervous system (G10–G14). G14 Postpolio Syndrome <http://apps.who.int/classifications/icd10/browse/2010/en#/G10-G14> Polio sequelae are codified as B91.

75 Marc Shell, *Polio and its Aftermath. The Paralysis of Culture* (Cambridge, Mass., 2005).

## References

- Sally Aitken, Helen D’Orazio and Stewart Valin, eds, *Walking Fingers. The Story of Polio and Those Who Lived with It*. (Georgetown, 2004).
- Álvarez, Adriana, “Parálisis y acción’: el caso argentino frente a los brotes de poliomiélitis de mediados del siglo XX,” pp. 259–261 in María Isabel Porras et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica*. (Ciudad Real, 2011).
- Álvarez, Adriana, María Isabel Porras Gallo and María José Báguena, coords., “Perspectivas internacionales de la salud en la América Latina. Programas métodos y experiencias locales en la lucha contra la poliomiélitis (1930–1960),” pp. 233–261 in María Isabel Porras et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica*. (Ciudad Real, 2011).
- Julio Aróstegui, *La historia vivida. Sobre la historia del presente*. (Madrid, 2004).
- Ballester, Rosa, “Entre la metáfora y la realidad. Discapacidad e identidad en la historia de la poliomiélitis,” *Dynamis* 28 (2008), 419–425.
- Rosa Ballester and María Isabel Porras, eds, “Políticas, respuestas sociales y movimientos asociativos frente a la poliomiélitis: la experiencia europea,” *Dynamis* 32(2) (2012), 273–414.
- Bedarida, François, “Definición, método y práctica de la Historia del Tiempo Presente,” *Cuadernos de Historia Contemporánea* 20 (1998), 19–27.
- Beldarraín, Enrique, “Poliomyelitis and Its Elimination” In Cuba: An Historical Overview,” *MEDICC Review* 15(2) (2013), 30–36.
- Berridge, Virginia, “History in Public Health: a New Development for History?,” *Hygiea Internationalis* 1(1) (1999), 23–35.
- Kathryn Black, *In the Shadow of Polio. A Personal and Social History*. (Cambridge, Mass., 1996).
- Debbie Bookchin and Jim Schumacher, *The Virus and the Vaccine. Contaminated Vaccine, Deadly Cancers, and Government Neglect*. (New York, 2004).
- Brown, Theodore M., Marcos Cueto and Elizabeth Fee, “The World Health Organization and the Transition From ‘International’ to ‘Global’ Public Health,” *American Journal of Public Health* 96(1) (2006), 62–72.
- Carbone, Michele, Paola Rizzo and Harvey I. Pass, “Simian virus 40, poliovaccines and human tumors: a review of recent developments,” *Oncogene* 15 (1997), 1877–1888.
- Carrillo, Ana María “Vacunación y educación higiénica en la campaña contra la poliomiélitis en México,” pp. 247–251 in María Isabel Porras et al., eds,

- Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica.* (Ciudad Real, 2011).
- Cello, J., A.V. Paul, E. Wimmer, “Chemical Synthesis of Poliovirus cDNA: Generation of Infectious Virus in the Absence of Natural Template,” *Science* 297(5583) (2002), 1016–1018.
- Cohen, Jeffrey I. “Enterovirus y reovirus,” I:1208–1213 in A. Fauci et al., eds, *Harrison Principios de Medicina Interna*. Madrid, 2012, 17 ed.
- Cuesta Bustillo, Josefina, “La historia del tiempo presente: estado de la cuestión,” *Studia Historica. Historia Contemporánea* 1 (1983), 227–241.
- Marcos Cueto, *El valor de la salud. Una historia de la OPS.* (Washington, 2004).
- Cueto, Marcos, “Los orígenes de la Atención Primaria de Salud y la Atención Primaria Selectiva de Salud,” pp. 27–58 in Marcos Cueto and Víctor Zamora, eds, *Historia, Salud y Globalización.* (Lima, 2006).
- Thomas M. Daniel and Frederick C. Robbins, eds, *Polio.* (Rochester, 1997).
- Dowdle, Walter R. “The principles of disease elimination and eradication,” *Bulletin of the World Health Organization* 76: Suppl. 2 (1998), 22–25.
- European Centre for Disease Prevention and Control, “Suspected outbreak of poliomyelitis in Syria: Risk of importation and spread of poliovirus in the EU,” *Rapid Risk Assessment*. 23 October 2013. Cited 2014 Jan 17. Available from:  
<http://www.ecdc.europa.eu/en/publications/Publications/RRA%20poliomyelitis%20Syria%2021%2010%202013.pdf>.
- European Centre for Disease Prevention and Control, “Expert consultation on scientific evidence linked to polio virus in Israel and Syria,” *Meeting Report*. 5 November 2013. Cited 2014 Jan 17. Available from:  
<http://www.ecdc.europa.eu/en/publications/Publications/Expert%20consultation%20mtg%20report%20-%20polio%20Israel%20Syria%20-%20final.pdf>.
- García-Sánchez, José Elías, Enrique García-Sánchez, Enrique García-Merino and María José Fresnadillo-Martínez, “La polio, el largo camino hacia el final de la partida,” *Enfermedades Infecciosas y Microbiología Clínica*. In print. Cited 2015 Mar 17. Available from <http://dx.doi.org/10.106/j.eimc.2014.10.005>
- González, Magdalena “La teorización de Julio Aróstegui sobre la historia del tiempo presente como historia vivida,” *Hispania Nova* 13 (2015), 126–133.
- Tony Gould, *A Summer Plague. Polio and its Survivors.* (New Haven, 1995).
- Groce, Nora Ellen, Lena Morgan Banks and Michael Ashley Stein, “Surviving polio in a post-polio world,” *Social Science & Medicine* 107 (2014), 171–178.
- Hampton, Lee “Albert Sabin and the Coalition to Eliminate Polio from the Americas,” *American Journal of Public Health* 99(1) (2009), 34–44.
- Heymann, D. and Q. Ahmed, “The polio eradication end game: what it means for Europe,” *Euro Surveillance*, 19(7) (2014), 1–7. Cited 2014 Mar 5. Available

from: <http://www.eurosurveillance.org/images/dynamic/EE/V19N07/art20702.pdf>

- Edward Hooper, *The River: A Journey to the Source of HIV and AIDS*. Boston, 1999.
- Huguet Santos, Montserrat, “Historia del Tiempo Presente e Historia de las Relaciones Internacionales,” *AYER* 42 (2001), 43–69.
- Jovell, J., “El paciente del siglo XXI,” *Anales del Sistema Sanitario de Navarra* 29: supl. 3 (2006), 85–90.
- Kaliner, E., J. Moran-Gilad, I. Grotto, E. Somekh, E. Kopel, M. Gdalevich, E. Shimron, Y. Amikam, A. Leenthal, B. Lev and R. Gamzu, “Silent reintroduction of wild-type poliovirus to Israel, 2013 – Risk communication challenges in an argumentative atmosphere,” *Euro Surveill*, 19(7) (2014), 1–7. Cited 2014 Mar 5. Available from: <http://www.eurosurveillance.org/images/dynamic/EE/V19N07/art20703.pdf>
- Kenneth F. Kiple, ed., *The Cambridge World History of Human Disease Past and Present*. (Cambridge, 1993).
- Kenneth F. Kiple, ed., *The Cambridge Historical Dictionary of Disease*. Cambridge, 2003.
- Jeffrey Kluger, *Splendid Solution. Jonas Salk and the Conquest of Polio*. New York, 2004.
- George C. Kohn, *Encyclopedia of Plague and Pestilence: From Ancient Times to the Present*. (New York, 1995).
- Koprowski, Hilary and Stanley Plotkin, “Histoire alternative du vaccin oral,” pp. 299–310 in Anne-Marie Moulin, dir., *L’aventure de la vaccination*. (Paris, 1996).
- Koprowski, Hilary and Stanley Plotkin, “History of Koprowski Vaccine Against Poliomyelitis,” pp. 155–166 in Stanley A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).
- Laval, Enrique, “Anotaciones para la historia de la poliomiélitis en Chile,” *Revista Chilena de Infectología* 24(3) (2007), 247–250.
- Lindner, Ulrike and Stuart S. Blume, “Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955–1965,” *Medical History*, 50 (2006), 425–446.
- Malavassi Aguilar, Ana Paulina, “Representaciones sobre la epidemia de poliomiélitis en el periódico *La Nación*. Costa Rica, 1954,” pp. 237–239 in María Isabel Porras et al., eds, *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica*. (Ciudad Real, 2011).
- Martínez-Pérez, José, “Presentación: la poliomyelitis como modelo para el estudio de la enfermedad en perspectiva histórica,” *Asclepio* 61(1) (2009), 7–21.

- José Martínez-Pérez, coord., “La poliomiélitis y sus contextos: experiencias colectivas e individuales ante la enfermedad en el siglo XX,” *Asclepio* 61(1) (2009), 7–192.
- Más Lago, P., “Eradication of poliomyelitis in Cuba: a historical perspective,” *Bulletin of the World Health Organization* 77(8) (1999), 681–687.
- Melnick, Joseph L., “The Picornaviruses,” pp. 147–188 in F. Fenner and A. Gibbs, eds, *Portraits of Viruses. A History of Virology*. (Basel, 1988).
- Melnick, Joseph and Stanley Plotkin, “Oral Polio Vaccine and the Results of Its Use,” pp. 167–177 in Stanley A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).
- Modin, J.F., “Poliovirus,” pp. 2305–2315 in G.L. Mandell, J.E. Bennett and R. Dolin, *Enfermedades Infecciosas. Principios y Práctica*. (Madrid, 2002, 5 ed.).
- Mosquera Gordillo, Miguel Armando, Natalia Barón Cano and Rosa Ballester Añón, “El camino hacia la erradicación de la poliomiélitis a través de la Organización Panamericana de la Salud,” *Revista Panamericana de Salud Pública*, 36(3) (2014), 185–192.
- Anne-Marie Moulin, dir., *L’aventure de la vaccination*. Paris, 1996.
- Dilene Raimundo do Nascimento, org., *A história da poliomiélite*. (Rio de Janeiro, 2010).
- Nascimento, Dilene Raimundo do, Marcos Cueto, Eduardo Ponce Maranhão and Deepak Sobti, “A erradicação da poliomiélite na América Latina: comparando Brasil e Peru,” pp. 161–176 in Dilene Raimundo de Nascimento, org., *A história da poliomiélite*. (Rio de Janeiro, 2010).
- Nathanson, Neal and J.R. Martin, “The epidemiology of poliomyelitis: enigmas surrounding its appearance, epidemicity, and disappearance,” *American Journal of Epidemiology* 110(6) (1979), 672–692.
- Nathanson, Neal and Olen M. Kew, “From Emergence to Eradication: The Epidemiology of Poliomyelitis Deconstructed,” *American Journal of Epidemiology* 172 (2010), 1213–1229.
- Paul A. Offit, *The Cutter Incident. How America’s First Polio Vaccine Led to the Growing Vaccine Crisis*. (New Haven, 2005).
- Michael B.A. Oldstone, *Viruses, Plagues, and History. Past, Present, and Future*. (New York, 2010).
- David M. Oshinsky, *Polio: An American Story*. (New York, 2005).
- John R. Paul, *A History of Poliomyelitis*. (New Haven, 1971).
- Perdiguero, E., J. Bernabeu, R. Huertas, E. Rodríguez-Ocaña, “History of health, a valuable tool in public health,” *Journal of Epidemiology and Community Health* 55 (2001), 667–673.
- Pinto, Sandrine Martins, Inês Guerra, Juan Antonio Rodríguez-Sánchez, João Rui Pita y Ana Leonor Pereira, “De las campañas de vacunación al calendario vacunal: el Programa Nacional de Vacinação português y las Campañas



- Nacionales de Vacunación Antipoliomielítica en España (1963–1976),” pp. 203–209 in Ricardo Campos Marín, Ángel González de Pablo, María Isabel Porras Gallo y Luis Montiel, eds, *Medicina y poder político*. (Madrid, 2014).
- Pita, João Rui and Juan Antonio Rodríguez-Sánchez, “Actitudes ante la polio en España y Portugal: estudio comparativo,” pp. 331-334 in Teresa Ortiz et al., eds, *La experiencia de enfermar en perspectiva histórica*. (Granada, 2008).
- Stanley A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).
- Porter, Roy, “The Patient’s View: Doing Medical History from Below”, *Theory and Society* 14(2) (1985), 175-198.
- María Isabel Porras Gallo, Mariano Ayarzagüena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista*. (Madrid, 2013).
- Quevedo, Emilio, Mario Hernández, Claudia Cortés and Juan Carlos Eslava, “Un modelo para armar: Una propuesta metodológica para abordar el estudio comparativo de la historia de la salud pública, de las profesiones de la salud y de sus relaciones de doble vía con la sociedad,” *Revista de Ciencias de la Salud* 11(3) (2013), 295-321.
- Racaniello, V.R., “One hundred years of poliovirus pathogenesis,” *Virology*, 344 (2006), 9-16.
- Ramacciotti, Karina Inés, “Las sombras de la política sanitaria durante el peronismo: los brotes epidémicos en Buenos Aires”, *Asclepio* 58(2) (2006), 115-138.
- Rodríguez-Sánchez, Juan Antonio, “La persona enferma como experta: los cambios sociosanitarios promovidos por el asociacionismo polio-postpolio en España”, *Estudios do Século XX* 12 (2012), 104-122.
- Rodríguez-Sánchez, Juan Antonio, “La historia de la poliomiélitis, historia del presente”, *Temperamentum* 16 (2012). Cited 2013 Jan 30. Available from: <http://www.index-f.com/temperamentum/tn16/t2712.php>
- Rodríguez-Sánchez, Juan Antonio, Rosa Ballester Añón and Inês Guerra Santos, “El movimiento asociativo: una perspectiva internacional, nacional y de los casos de Madrid, Valencia y Castilla – La Mancha,” pp. 233-257 in María Isabel Porras Gallo, Mariano Ayarzagüena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista*. (Madrid, 2013).
- Naomi Rogers, *Dirt and Disease: Polio before FDR*. (New Brunswick, 1992).
- Charles Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine*. (New York, 1992).
- Sabin, Albert B., “Oral poliovirus vaccine: history of its development and use and current challenge to eliminate poliomyelitis from the world,” *Journal of Infectious Diseases* 151(3), 1985, 420-436.
- Edmund J. Sass, *Polio’s Legacy. An Oral History*. (Lanham, Maryland, 1996).

- Bernard Seytre and Mary Shaffer, *The death of a disease: a history of the eradication of poliomyelitis*. (New Brunswick, 2005).
- Marc Shell, *Polio and its Aftermath. The Paralysis of Culture*. (Cambridge, Mass., 2005).
- Siegler, M., “La relación médico-paciente en la era de la medicina de gestión,” pp. 44-64 in *Limitación de prestaciones sanitarias*. (Madrid, 1997).
- Julie Silver and Daniel J. Wilson, *Polio Voices. An Oral History from the American Polio Epidemics and Worldwide Eradication Efforts*. (Westport, Connect, 2007).
- Mathew Smallman-Raynor and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication*. (Oxford, 2006).
- Sobti, Deepak, Marcos Cueto and Y. He, “A public health achievement under adversity: the eradication of poliomyelitis from Peru, 1991,” *American Journal of Public Health*, 2014, 104(12), 2298-2305.
- Sundin, Jan, “Why Hygiea Internationalis?,” *Hygiea Internationalis* 1(1) (1999), 5-7.
- Testa, Daniela, “Poliomyelitis: la ‘herencia maldita’ y la esperanza de la rehabilitación. La epidemia de 1956 en la ciudad de Buenos Aires,” *Instersticios* 5(2) (2011), 309-323.
- Testa, Daniela, “La lucha contra la poliomyelitis: una alianza médico-social, Buenos Aires, 1943,” *Salud Colectiva* 8(3) (2012), 299-314.
- Testa, Daniela, “*Curing by doing*: la poliomyelitis y el surgimiento de la terapia ocupacional en Argentina, 1956-1959,” *História, Ciências, Saúde – Manguinhos* 20(4) (2013), 1571-1584.
- Testa, Daniela, “El síndrome pos-polio y sus anudamientos en el pasado,” *Instersticios* 8(1) (2014), 233-248.
- Vargha, Dora, “Between East and West: Polio Vaccination across the Iron Curtain in Cold War Hungary,” *Bulletin of the History of Medicine* 88(2) (2014), 319-343.
- Daniel J. Wilson, *Living with Polio. The Epidemic and its Survivors*. (Chicago, 2005).
- Heather Green Wooten, *The Polio Years in Texas. Battling a Terrifying Unknown*. Texas, 2009.
- World Health Organization, *Polio Eradication & Endgame Strategic Plan 2013-2018*. Geneva, 2013. Cited 2014 Mar 23. Available from [http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP\\_EN\\_US.pdf](http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP_EN_US.pdf)



## Acknowledgements

This work has been carried out as part of Project HAR2012-39655-C04-03 of the Spanish Ministry of Innovation, Economy and Competitiveness (MINECO) and SA359A12-1 and SA251U14 (Junta de Castilla y León).



# Poliomyelitis in the City of Córdoba: Morbidity, Knowledge and the Research Performed by a Medical Elite in Argentina's Interior, 1943–1953

Adrián Carbonetti, Lila Aizenberg and  
María Laura Rodríguez

## Introduction

The complex problems presented by the production of medical knowledge in Argentina during the middle decades of the twentieth century have been sidestepped by the nation's historiographers.<sup>1</sup> Some studies begin their examination of these questions by describing the situation in Buenos Aires and focusing on its medical elite. Others describe and quantify the medical community's familiarity with this disease, or the lack thereof, during this time period.<sup>2</sup> The lack of interest in the medical outlooks and scientific perspectives of Argentina's foremost doctors as they related to polio's symptoms, origin, causes and development has been linked to a narrative which describes "victories" as "rare" in the fight against poliomyelitis. While this article acknowledges that this undertaking is exploratory in nature and seeks to put forth its own questions and hypotheses,

---

1 The aftereffects suffered by children seriously affected by infantile paralysis, which include physical defects in their extremities and in their cores caused by irreparable damage to their neuromuscular systems — have been the subject of important studies. These interrogated how — and at what speed — the scientific community and Argentine society, represented here by federal institutions and others operating at a local level in the city of Buenos Aires, shaped their responses to this disease over the long term. D. Testa. "Poliomielitis: La herencia maldita y la esperanza de la rehabilitación. La Epidemia de 1956 en la Ciudad de Buenos Aires", *Intersticios*. Vol. 5 (2011). pp. 299–213 C. Ferrante. "Rengueando el estigma: Modos de ser, pensar y sentir (se) discapacitado construidos desde la práctica deportiva adaptada", *RBSE*, 9(27) (2010). pp. 909–1902.

2 K. Ramaciotti. *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Thesis defended at the Facultad de Ciencias Sociales de la Universidad de Buenos Aires, (Buenos Aires, 2008).

it rejects interpretations that seek only to collect, organize, and classify “scientific successes.” Nor is it interested in reconstructing “errors” and “omissions” in order to label them scientific detours.<sup>3</sup> With this in mind, we aim to rescue a universe of scientific production whose results were published locally by the foremost members of the medical profession in the province of Córdoba. We will do this by analyzing medical articles published in the *Revista Médica de Córdoba* and the *Revista de la Universidad Nacional de Córdoba* that examine Argentina’s fatal polio cases at various points in time between the years 1943 and 1952. Because we understand that scientific progress can also be said to possess its own epidemiological and historic characteristics, this article will interrogate the links between medical research and the particularities of local morality rates. Our article will interrogate the connections between local medical science and knowledge produced in leading European countries, particularly in Sweden, and the United States. It will consider the kind of articles that were published in Córdoba, the sort of research was conducted there, and the link between knowledge produced elsewhere and local variables associated with the development of poliomyelitis. It should be understood that the receptive attitude displayed by members of the local medical community in Córdoba is closely linked to the sporadic appearance of fatal polio cases in the region from 1943 to 1952: the yearly totals of deaths attributed to this condition varied from year to year until the outbreak of an epidemic in 1952. This article will also comment on the city’s experience with massive immunization, both with the Salk vaccine, which contained killed viruses, and with the more efficient Sabin vaccine of 1963, both of which were, of course, named for eminent American scientists whose discoveries led to the initiation of the controlled phase of this disease epidemic.<sup>4</sup> However, this article will not lose sight of the fact that although the biomedical science developed in Argentina was, from the nation’s founding, influenced by European scientists and European scientific discoveries, the processes by which this knowledge was received cannot be considered static.<sup>5</sup> Our reading of these events holds that, along with the production dynamic of knowledge relating to poliomyelitis, other processes for the acquisition of knowledge were also emerging at this time at the local level. These processes are noteworthy because they involved investigative

---

3 S.Caponni. “Epistemología, Historia de las Ciencias y Saber médico”, *Episteme*, v. 11, Nro. 23, (2006) p. 59.

4 D. Testa. “Poliomielitis: La herencia maldita y la esperanza de la rehabilitación. La Epidemia de 1956 en la Ciudad de Buenos Aires”, *Intersticios: Revista Sociológica de Pensamiento Crítico*. Vol. 5 (2011), p. 309.

5 H. Vessuri “El crecimiento de una comunidad científica en argentina”, *Cad.Hist.Fil.Ci.*, Serie 3, V 5, (1995), p. 174.

strategies that raised questions about a number of social issues, including some related to mortality, in an environment that would prove important to the study and development of medical science.

## The City of Córdoba: The State, Medicine, and Poliomyelitis

The city of Córdoba, which is the capital of the province that bears the same name, is located in the northeast corner of Argentina's lowland coastal region. Throughout its history, the city has served as a nerve center and a communications hub connecting the country's coastal provinces to its northern and northeastern regions. Córdoba had been an indispensable center for commerce originating in Argentina's northern and central provinces during the colonial era and the early days of the Argentine republic, but when Argentina's coastal lowlands became a major producer of raw materials and participant in the international markets that traded them during the closing decades of the 19<sup>th</sup> century, the city became better established in this role. At the same time, encroachment upon desert lands belonging to native tribes and the growth of transatlantic immigration transformed the city into an administrative center with dominion over a wide swath of southern Córdoba province, whose growth was likewise spurred by these phenomena. Taken together, these factors lent the city a rare dynamism: the city and its structures underwent a rapid modernization.<sup>6</sup>

When the city underwent a remarkable period of growth during the middle decades of the twentieth century, this state of affairs shifted, but, in some ways, became more firmly entrenched. In demographic terms, the population of the city of Córdoba nearly doubled during the period described in our study. According to official estimates, the city's population grew from 296,310 in 1944 to 420,531 in 1951.<sup>7</sup> This population growth was matched by record growth in the area's production capacity. According to Dadone, macroeconomic values recorded after 1950, such as those relating to the production of value-added products, show that the process of industrialization

---

6 W. Ansaldi. *Industria y urbanización, Córdoba, 1880–1913*, Universidad Nacional de Córdoba, Mimeo, (Córdoba, 1977), pp. 469–477.

7 Report of the Dirección General de Estadística Censos e Investigación, Ministerio de Hacienda, Economía y Previsión Social de la Provincia de Córdoba, Quinquenio 1944–1948. Published in 1953. Report of the Dirección General de Estadística Censos e Investigación, Ministerio de Hacienda, Economía y Previsión Social de la Provincia de Córdoba, 1949–1951. Published in 1953.

was advancing “faster than the national rate” and more independently “as compared to the rest of the country’s other large industrial centers.”<sup>8</sup>

Córdoba’s long-term development was not, however, accompanied by the formulation of concrete responses to illnesses, particularly poliomyelitis. The condition of its public health system was defined by the relative absence of state intervention, though this might, of course, be attributed to an underdeveloped sanitation system and a general lack of understanding of the disease under discussion. As for sanitation policies, we have evidence of only a few actions carried out by the federal government after the beginning of the epidemic. As in 1946, these were typically control and prevention measures, such as *cordons sanitaire*, the disinfection and fumigation of stores, homes, schools, theaters, moviehouses, and the sewer system, the incineration of any wastes or domestic items that might carry infection, and the demolition of houses. That year also marked the first time that Argentine poliomyelitis patients were treated with streptomycin and sulphonamides.<sup>9</sup>

The resources available in Córdoba to fight poliomyelitis during the time period described in this report were limited to the Infantile Paralysis Section of the Hospital de Niños, which was, at the time, the only institution in the entire province dedicated to treating the disease.<sup>10</sup> Relatively underequipped for this task, it focused its activities on alleviating the effects that the disease left in its wake. It should be noted that during the time period described by this study, which corresponds broadly to Argentina’s era of Peronist rule (1946–1955), no significant improvements to the situation described herein were to take place.

During the time period described in this report, institutions in Córdoba devoted to medical science experienced significant development and carried out a significant amount of specialized research, a fact which provides a stark contrast to the state of affairs described above. Córdoba began to play a significant role in medical affairs during the latter part of the nineteenth century, a period which saw the founding and subsequent growth of the School of Medical Sciences at the Universidad Nacional de Córdoba. The founding of this institution goes beyond mere anecdote: it was the first center

---

8 This is in line with “(...) the type of industries that make up the bulk of the activity in this sector is more dynamic [in the local case]. A .Dadone. “Cien de la industrialización en Córdoba 1873–1973”, *Revista de Economía Banco de la provincia de Córdoba*, n 24, (1974). p. 155

9 K. Ramaciotti. *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Thesis defended at the Facultad de Ciencias Sociales de la Universidad de Buenos Aires, (Buenos Aires, 2008). p. 191.

10 L.A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p. 293.

for medical instruction of its kind to be founded in Argentina's interior. Furthermore, the school served as both an important research center and a point of interaction for the region's medical professionals and medical scientists.<sup>11,12</sup> The medical professionals that gathered there, who could be considered members of an elite, were both interested in and inspired by the idea that science could be advanced through the accumulation of medical knowledge. At no point was this more evident than when a few noted teaching doctors founded *La Revista del Círculo Médico de Córdoba* during the first decade of the twentieth century in the hopes of advancing both their profession and science itself.<sup>13</sup> Their aspirations' influence on the activities of Córdoba's doctors would become even more pronounced during the nineteen thirties, when the journal gained prominence in the local medical publishing field and was incorporated into the Universidad Nacional de Córdoba.<sup>14</sup> In 1943, another periodical, *La Revista de la Facultad de Medicina de Córdoba* appeared. Both of these publications served as the "powerhouses" for an effort to increase the visibility and influence of Córdoba's best medical professionals in the field of Argentine medicine by opening up spaces for medical research and debate.

It was in this context that Córdoba's first polio epidemic occurred. While poliomyelitis was not unknown in the city, it had, by 1943, become endemic, and several locations in the province's interior had suffered epidemics of the disease, most notably Cruz del Eje, which is located in the province's northeast. A consistent rise in fatal cases attracted the concern of Córdoba's doctors, who initiated projects to better understand every aspect of the disease, including its nosological, epidemiological, clinical, and therapeutic character. This study will address the perspectives taken by the studies and scientific work produced by individuals and institutions in the city of Córdoba and will examine the issues they raise. It will focus on the time elapsed between the polio epidemic that Córdoba suffered in 1943 and the epidemic that broke out in the city in 1952, which was, in terms of fatalities, the more serious of the

---

11 Besides the Escuela de Medicina de la Universidad de Buenos Aires, the Facultad de Medicina de Córdoba, which was founded in 1878, was, during this period, the only institution in the country that trained doctors. Its graduates usually went on to settle in various parts of the country's interior. M.L. Rodríguez. "Perspectivas en torno a la consolidación de la elite médica de Córdoba. Epidemias y Estado, 1878–1923". Undergraduate thesis, Facultad de Historia, Universidad Nacional de Córdoba, (Córdoba. 2006). p. 87.

12 M.L. Rodríguez. *La medicalización de la ciudad de Córdoba en tiempos epidémicos: conceptos, saberes e intervenciones 1878–1927*. Editorial de la Municipalidad de Córdoba, (Córdoba, 2011). p. 56.

13 *Revista Círculo Médico de Córdoba*, Enero y Febrero, Año VIII, Nro. 3. (1920), p. 50.

14 *Revista Círculo Médico de Córdoba*, Abril y Mayo, Año XVI, Nro. 1, (1928), p. 60.

two. It will examine articles written by both doctors and teachers at the Facultad de Ciencias Médicas of the Universidad Nacional de Córdoba and analyze both their authors' perspectives on the pathology of this disease and the research practices they employed while investigating it.

## Poliomyelitis According to Córdoba's Doctors: A Reconstruction of Knowledge

Rosenberg makes the observation that a disease does not exist until society has agreed on its name, its symptoms, and its forms of treatment. This is to say that disease, from a social perspective, is a social and historical construction produced by science and society.<sup>15</sup> We must also add something else to this statement: the fact that disease is constructed historically does not, in itself, determine the specific concerns of medical science or the way that its investigations into these concerns develop. This appears to be the case with poliomyelitis in Córdoba: it is worth remembering that the city had, since the end of the nineteenth century, been home to a university with a medical school that carried out basic research. This constitutes a very significant track record, and it also bears mentioning that, beginning in 1915, when Salversan proved impossible to import, the Facultad de Medicina de Córdoba made continual efforts to develop an alternative cure for syphilis. Dr. Aparicio, referring to this issue, noted that, “the earliest Salversan trials date to 1913 in regards to syphilis in the nervous system. However, in 1915, we began trials using intravenous mercury cyanide.”<sup>16</sup> It is particularly illuminating to refer to local studies on contagious diseases such as tuberculosis, whose study inspired the founding of a professorship and an institute devoted to the advancement of phthisiology in the early nineteen thirties.<sup>17</sup> Generally speaking, a review of the subjects discussed in the only medical journal published in the region during that era, *La Revista Médica de Córdoba*, reveals a marked interest in the

---

15 C.E Rosenberg. “Disease in History: Frames and Framers”. *The Milkbank Quarterly*, 67, Suppl. 1, (1989).p. 1.

16 M. L Rodriguez. “Perspectivas en torno a la consolidación de la elite médica de Córdoba. Epidemias y Estado, 1878–1923”. Undergraduate thesis, Facultad de Historia, Universidad Nacional de Córdoba (Córdoba, 2006). p. 35.

17 A.. Carbonetti. “El sistema sanitario en la provincia de Córdoba, 1880–1926”, *Dynamis*, vol. 25, (2005). p. 87–116.

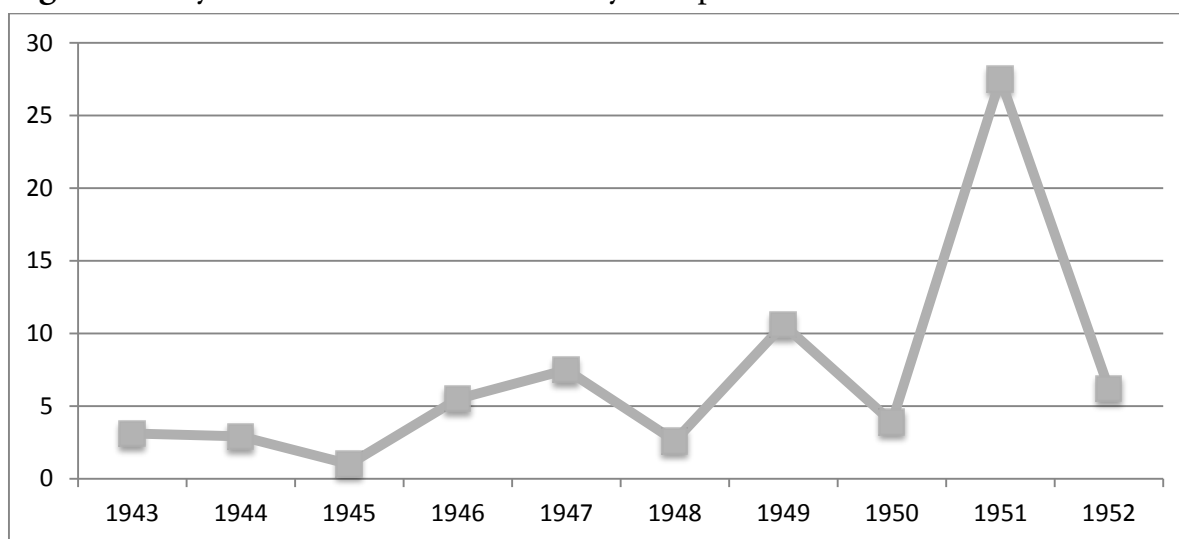


clinical and epidemiological study of the diseases that most affected the population of the city and province of Córdoba.<sup>18</sup>

Even so, specifically medical thinking about poliomyelitis in Córdoba has a relatively short history. Papers on the subject published by local doctors prior to 1943 are almost unknown. It hardly seems surprising that the study of poliomyelitis received a limited amount of attention, since the disease affected relatively few patients. Between 1943 and the epidemic that took place in Cruz del Eje in 1946–1947, only seventy cases were reported each year. The number of patients affected rose to just 164 during the epidemic of 1951–1952, according to research carried out by Luis Alberto Lezama, who was, at the time, a technical assistant in the traumatology and orthopedics department of the Universidad Nacional de Córdoba.<sup>19</sup>

If the small amount of cases reported per year might be considered one factor that could explain why so few articles on the disease were written, the connection between low mortality rates and a low level of research years leading up to 1953 seems stronger, particularly in terms of epidemiology. The following chart shows the number of polio deaths reported in the years between 1943 and 1952.

**Figure 1:** City of Córdoba. Polio mortality rate per 100,000 residents.



**Source:** In-house production based on: Lezama, Luis Alberto (1954): “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, Córdoba, Argentina.

18 M.L.Rodríguez. “Perspectivas en torno a la consolidación de la elite médica de Córdoba. Epidemias y Estado, 1878–1923”. Undergraduate thesis, Facultad de Historia, Universidad Nacional de Córdoba, (Córdoba, 2006). p. 35.

19 L.A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (Córdoba, 1954).p.302.

In 1944, Guillermo Allende and Oscar Malvarez, two doctors associated with the Chair of Traumatology and Orthopedics, wrote an article that appeared in the *Revista de la Facultad de Ciencias Médicas* of the Universidad Nacional de Córdoba titled “Spinal Poliomyelitis (Heine-Meidin Disease)” which attempted to describe the symptomology and treatment of both the acute phase and the convalescence period of this disease.<sup>20</sup> In general terms, we might consider these studies to be another product of Argentina’s concern about the increase in its polio-related deaths, which totaled 2,280 in 1942 and 1943.<sup>21</sup> Though the authors “display an understanding” of the concerns that infantile paralysis had generated among the public, they were also forthright about their doubts that both their countries and their region’s leading doctors had about the ability of prophylactic measures to prevent infection and break the chain of contagion. Still, despite acknowledging the public’s concern with polio and its prophylaxis, the article sidesteps the impact that the disease had had on the city and province of Córdoba and on Argentina in general, even though mortality statistics that described the disease’s effects were available for all of these jurisdictions.<sup>22</sup> Instead, it describes research that had been carried out in the United States, and, especially, Sweden. It describes a number of existing orthopedic treatments and refers to the “treatment of known aftereffects” and the “correction of deformities” without alluding to what treatment technologies might have been available in Córdoba or to the work that had been done in this field by local pediatricians or by specialists at the province’s own school of medicine.<sup>23</sup>

Similarly, when considering questions of etiology and epidemiology, the article seems to depend entirely on research carried out in first-world nations,

---

20 L.A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (Córdoba, 1954). p. 302.

21 K. Ramaciotti. *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Thesis defended at the Facultad de Ciencias Sociales de la Universidad de Buenos Aires, (Buenos Aires, 2008). p. 203.

22 Although the articles analysed do not use statistical data, statistical production has been always an activity conducted by the Province. At least since the beginning of the twentieth century there were various Statistical Yearbooks of the Province made by the governments of these years. According to the documents consulted, this activity developed by the Department of Statistics did not stop between 1943 and the early peronist years. In 1952 the Secretary of Statistics and Census was created by law as part of the Ministry of Finance, Economy and Social Welfare with an effort to rationally centralize" (...) the implementing of statistical service of the Province". Collection of Laws of the Legislature of the Province of Córdoba, 1952, Volume 32, p. 113.

23 G. Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 4.

most notably the United States. This goes beyond mere reference: the article seems to be a perfect reproduction of knowledge produced elsewhere and lacks even a single mention of any clinical or statistical data. In etiological terms, it is clear that the authors have made the doubts expressed by foreign researchers their own. When discussing the progress of poliomyelitis as it relates to age, the authors “observe” that the disease is most fatal to patients between one and five years old, though this statement is not backed up by any analyses made locally or, for that matter, in any part of Argentina. They go on to assert that the incidence of the disease is increasing in older children, though they neither provide any locally sourced information about polio’s prevalence in this age group nor provide an explanation for this trend based on observations of epidemiologically significant behaviors. When discussing the disease’s epidemiology, they limit themselves to reproducing conjectures made by American doctors, such as “the fact that the clear majority of polio patients belong to this age group leads us to suspect a late acquisition of a spontaneous and endogenous immunity brought about by growth and perhaps by hormonal factors of a sexual nature.” They cite a similar cause when explaining why males predominate in polio’s patient group.<sup>24</sup>

The section that discusses factors that contribute to the development of polio’s acute phase perhaps best demonstrates the privileged place that scientific studies originating from economically dominant countries occupy in this article. Since doctors in the United States had emphasized the significance of muscle fatigue and chills as contributing factors, the authors do, too. They illustrate this point by describing the treatment of “a beautiful twelve-year-old girl who had recently undertaken a vigorous gymnastics program in preparation for a dance class and had bathed in a public pool the day before she suffered her attack.”<sup>25</sup>

A review of the authors’ research methods also suggests that they ignored their own experiences or any variables introduced by the local epidemiological environment. They avoid discussing or questioning why the number of polio cases in Córdoba had increased, sketching out an ambiguous argument by claiming that it was “logical to suppose, looking back to when cases were sporadic, compared to the more recent epidemics, that the germ has grown progressively more virulent or that the human organism has lost its immunity

---

24 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 6.

25 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 6.

against it.”<sup>26</sup> Of course, the authors neither conceptualize nor discuss the term “epidemic” and refer instead to American or European cases. In these places, however, polio was not discussed as a global phenomenon.

These authors employed similar types of strategies when they considered the way in which the virus spread. In a later paragraph, they link contagion with healthy carriers and ask if these individuals spread the disease directly or through some other vector. When considering this question, they refer only to studies carried out at Yale University which had succeeded in infecting monkeys using the papillae of flies taken from epidemic-stricken areas and in isolating the virus on the feet of flies and mosquitos.<sup>27</sup> As for the nosology and epidemiology of polio’s spread, they write that, “current thinking leads us to believe that the virus passes directly from the sick to the healthy. In a small number of cases, the fly acts as the principal intermediary: it carries the sick individual’s virus from his feces or waste, or from contaminated water, and infects another individual, either through direct contact or through the contamination of water, milk, vegetables, etc.”<sup>28</sup> However, despite this battery of conjectures, the authors do not venture to make any recommendations about prophylaxis: “We must note, unfortunately, that we do not possess the necessary means with which to effect a successful prophylaxis, since the virus’s point of entry remains unknown and we cannot determine which children are most susceptible to contagion by this disease.”<sup>29</sup>

Another fundamental aspect of poliomyelitis emphasized by doctors of the time was the connection between social class and the incidence of infantile paralysis. It was originally believed that this disease affected wealthier populations and that the children of the poor were immune. Two professors who taught at the Facultad de Ciencias Médicas of the Universidad Nacional de Córdoba, Dr. González Alvarez and Pedro Luque, expanded upon this theme in an article they published in 1946 that they titled “Epidemiology and

---

26 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 7.

27 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 7.

28 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 8.

29 Allende, Guillermo and O. Malvarez. “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (1944), p. 8.

Prophylaxis in Heine-Medin Disease.”<sup>30</sup> Despite its title, the authors of this article, like the authors of the one that was discussed previously, based their work on a series of studies that had been carried out abroad. The scientists they chose to discuss were again American or European, and often Swedish. In this case, the authors accepted as valid the conclusions drawn by epidemiological studies carried out by Lyon, Huntington, and Price, who had drawn nosological maps for the disease that showed that poliomyelitis was found predominantly in poor areas that lacked facilities for personal and public hygiene and in which flies were abundant.<sup>31</sup> The article did not even mention the existence of the city of Córdoba or its social organization, though it did advance certain criticisms that grew out of preconceived notions about the inadequate hygienic habits of the working classes. It recommended the hospitalization of working-class children because it would allow doctors to study them in isolation, since “when it comes to children who come from working-class backgrounds, this step will allow them to receive therapeutic treatment, which might be decisive in the outcome of their cases.”<sup>32</sup>

## Poliomyelitis in the City of Córdoba: Toward an Affirmation of the Local

It might have taken a minor polio epidemic in 1949 and 1950 and another, more serious, epidemic in 1951 and 1952 to convince Córdoba’s scientists to begin epidemiological studies whose research drew on both knowledge about poliomyelitis that originated in better-developed countries and from their own experience of Córdoba’s situation. To this end, the *Revista de la Facultad de Ciencias Médicas* published a very interesting article by Dr. Luis Lezama titled “Infant Paralysis in the City of Córdoba” in 1953.

The level of epidemiological specificity that this article displays suggests a clear break from earlier works, which were clearly bibliographical in nature or were merely intended to systematize or recapitulate global findings about the disease. In contrast, this article uses local variables to explain the distribution

---

30 F.González Alvarez y P. Luque. “Epidemiología y Profiaxis de la enfermedad Heine Medin”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año III, Octubre-Diciembre Nro. 4, (1946), p. 27.

31 F.González Alvarez y P. Luque. “Epidemiología y Profiaxis de la enfermedad Heine Medin”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año III, Octubre-Diciembre Nro. 4, (1946), p. 27.

32 F.González Alvarez y P. Luque. “Epidemiología y Profiaxis de la enfermedad Heine Medin”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año III, Octubre-Diciembre Nro. 4, (1946), p. 37.

of polio cases in Córdoba and the incidence of the disease among different social classes. It is even possible to argue, as we will, that this article went further: it moved an ongoing discussion about public sanitation, which had been a central issue for Argentina's doctors and politicians during that era, to center stage.

First of all, Dr. Lezama's article, which is based on clinical histories, is an excellent epidemiological study which breaks down poliomyelitis cases in the city of Córdoba by age and sex. In contrast with the aforementioned studies, the author uses these variables to develop an analysis in which he compares the information he collected with the experiences of doctors in other cities, such as Havana, Cuba, and in places like Florida and Connecticut.<sup>33</sup>

It is even more interesting to note that the doctor from Córdoba who wrote this article found important differences between what had taken place in Córdoba and what took place in these other locales. He determined, for example, that the children affected by poliomyelitis in Córdoba were, on average, younger than the children who had been affected by the disease elsewhere. Similarly, Dr. Lezama used the clinical histories of fifty local patients to reconstruct the symptoms they experienced during the epidemic of 1951–1952.<sup>34</sup> He used this information to develop a strikingly original analysis of the epidemiology of polio in the city of Córdoba. Specifically, working from the theory of oral and not aerosol contagion — a controversy which had already been discussed in other works, and particularly in the ones profiled above — the author drew a connection between the city's polio cases and the extent of its sewer and potable water services. His research was accompanied by maps that drew on his own research to illustrate the distribution of polio cases throughout the city and the city's own municipal maps, which illustrated the geographic extent of its sanitary services.<sup>35</sup> Dr. Lezama reached the following conclusion: “A higher rate of mortality is observed in zones that lack sewers and whose housing is served by cesspits, as can be observed in the city's

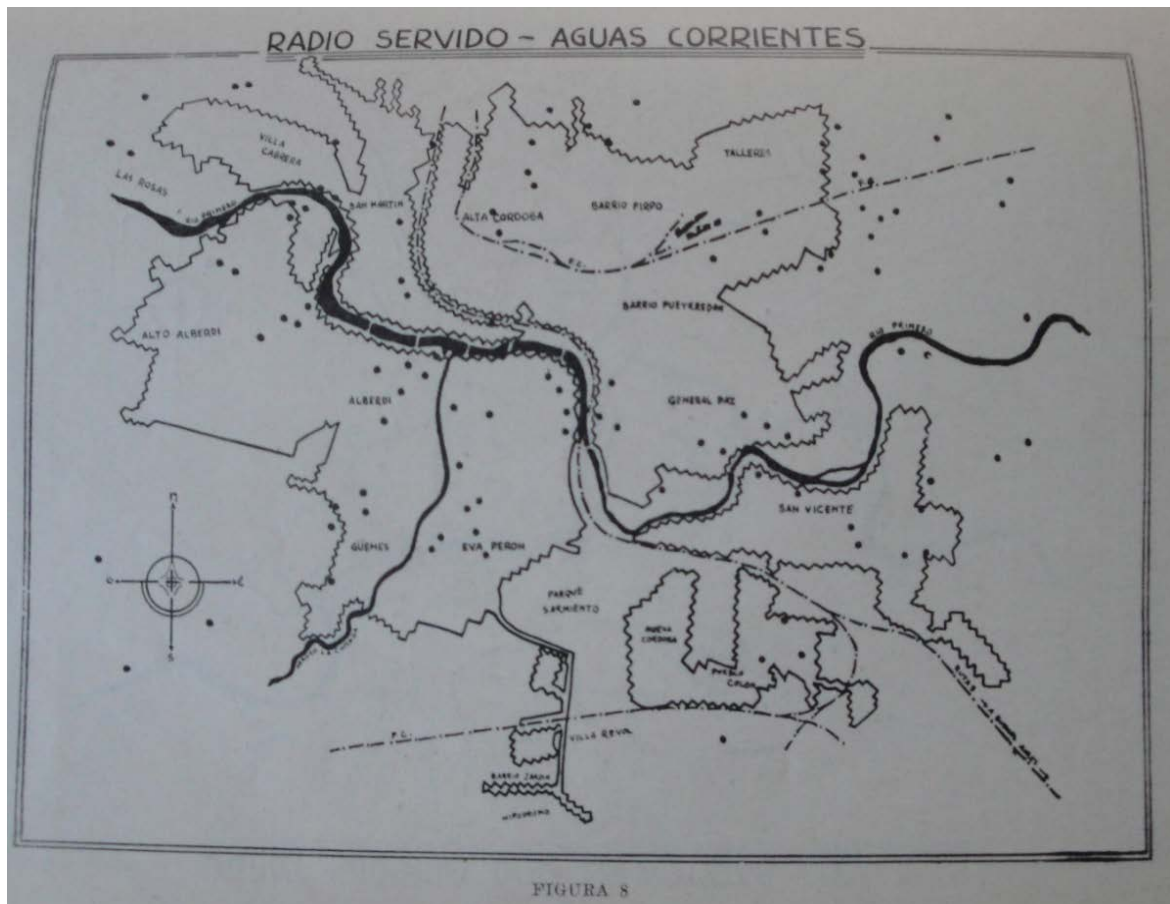
---

33 L.A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p. 293.

34 . A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p. 293.

35 . A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p. 293.

**Map 1:** Distribution of polio cases throughout the city of Córdoba's sanitary services



**Source:** Photograph of the map made by Dr. Lezama, Luis Alberto (1954): “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, Córdoba, Argentina.

eastern and southeastern neighborhoods, which are densely populated areas that lack sewers.”<sup>36</sup>

When this article’s findings are considered using its own investigative standards, we find that its own research does not establish a connection between the availability of potable water and polio cases in the city of Córdoba. We should note, however, that the doctor who compiled this report did so using clinical histories belonging to the Traumatology and Orthopedics department of the Hospital de Niños, which worked in cooperation with the Universidad Nacional de Córdoba’s nursing school, its Kinesiology and Rehabilitation department, and the chairs of Traumatology and Orthopedics

---

36 Lezama, Luis Alberto (1954): “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, Córdoba, Argentina, pp. 301–302.



**Map 2:** Incidences of polio with the distribution of running water and sewage services in the city of Córdoba



**Source:** Photograph of the map elaborated by Dr. Lezama, Luis Alberto (1954): “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de*

attached to its medical school. In 1953, the Hospital de Niños was the only institution equipped with these resources in Argentina’s north and north-central regions and so received poliomyelitis patients from a very significant portion of Argentina’s territory. However, the author’s decision to relate incidences of polio with the distribution of running water and sewage services in the city of Córdoba attempted to remedy a potentially distortive aspect of the disease’s mortality statistics by discounting cases that originated in the country’s other regions.<sup>37</sup>

While this article presented an exhaustive year-by-year analysis of polio-related deaths in the city of Córdoba from 1943 to 1952, it followed the lead of various hypotheses posited by American scientists and considered the ages at which patients in Córdoba had been affected by the disease, their races, the socioeconomic profile of the disease, and the area’s sanitary conditions. While we cannot definitively claim that this sort of research might have constituted part of an independent effort to increase the sum total of knowledge related to

---

<sup>37</sup> A. Lezama “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p. 310.



poliomyelitis, the question of whether this investigation constitutes the beginning of an autochthonous scientific culture remains open.

While the influence of European medical science on Argentina's medical sciences<sup>38</sup> and on the medical science developed in Córdoba is undeniable, and the processes of knowledge appropriation that can be seen to occur in Dr. Lezama's article make reference to scientific advancements made elsewhere. However, the article also puts local processes of reception and resignification into play. In this sense, we would argue both what is appropriated, in terms of knowledge, and the process of appropriation itself should be considered part of a dynamic process that mediates between information's initial reception and its subsequent diffusion in the local community.

Doctors, in effect, set a certain threshold that defined the epidemiology of infantile paralysis not in terms of any internationally recognized body of knowledge about poliomyelitis but in terms of the concepts and notions that shaped Argentina's thinking about the condition. From a medical point of view, the events that took place in Córdoba in 1951–2 were comparable to events that had occurred in New York in 1944, London in 1947, and in Berlin. If one uses the term as it was understood by the international standards that governed treatment of the disease, they constituted an epidemic.

The article under discussion analyzed data from the city of Córdoba and attempted to understand and analyze cases of poliomyelitis as they related to a number of factors. It then used information gleaned about these cases to raise awareness about the disease and to advocate for the declaration of a state of emergency. According to the standard that Dr. Lezama employed, an epidemic was thought to exist when the amount of cases recorded rose above the level of twenty per hundred thousand inhabitants: by 1951, the rate of infection was seven percent higher than what was considered epidemic level.<sup>39</sup>

During those years, such a declaration was no minor matter. The same year that Dr. Lezama's article was published, the state organism in charge of Argentina's hygienic standards, which was quite aware of the increase in the county's polio cases, referred to them as part of a "global epidemic wave." The government, however, was so determined remain uninvolved that at a press conference held on April 2<sup>nd</sup>, 1953, Argentina's health minister — going against the health standards used by Dr. Lezama — underlined his contention that the cases of poliomyelitis that had been reported in Córdoba did not

---

38 J. Buschini. "Una carrera profesional con espacio para la ciencia en la Argentina de la primera mitad del siglo XX: Ángel Roffo y la cancerología experimental", *Quiju*, vol. 14, núm. 2, (2012). pp. 267–293.

39 A. Lezama "La Parálisis infantil en la ciudad de Córdoba", *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (1954). p 305.

constitute an epidemic, since the rate did not reach one case per every ten thousand inhabitants.<sup>40</sup> As has often happened throughout the history of Argentine public health, the “public’s psychosis” was blamed on doctors who, armed with uncertain estimates, facilitated the spreading of “unfounded rumors.”<sup>41</sup> Of course, in this case, it was an Argentine doctor who was responding to a health issue with well-founded scientific arguments, made after conducting an investigation that sought to engage with both local perspectives and knowledge produced abroad. The doctor in question was also arguing that poliomyelitis was not just a medical problem, but, in the context of increasing mortality, a political one.

## Conclusions

Our article is only an initial approach to the issues surrounding the accumulated knowledge about poliomyelitis’s nosology and epidemiology as they relate to a series of events that took place in Argentina’s interior. Still, we believe it provides an opening into a number of questions that deserve more thorough investigation. The most significant of these questions refers to the complex interactions that took place between science and politics and between internationally recognized scientists and those native to Argentina and to Córdoba. It also calls into question the decisions taken and the viewpoints assumed by an exclusive medical elite that, even today, has succeeded in establishing a cognitive monopoly that successfully resists the pressures exerted upon it by both society and confers upon itself an air of legitimacy in the eyes of its fellow professionals.

Scientific logic itself leads us to conclude that the esteem with which the articles analyzed above that date from 1944 and 1946 viewed scientific developments made in Europe and North America refer to power dynamics and the transmission of knowledge from powerful countries to so-called peripheral jurisdictions. This article does not engage these questions directly, but, when considering these dynamics, it should be understood that scientific knowledge is not necessarily universal in character: it is produced through

---

40 K. Ramaciotti. *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Thesis defended at the Facultad de Ciencias Sociales de la Universidad de Buenos Aires, (Buenos Aires, 2008). p. 203.

41 K. Ramaciotti. *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Thesis defended at the Facultad de Ciencias Sociales de la Universidad de Buenos Aires, (Buenos Aires, 2008). p. 203.

local means, and its “universalization” is largely a project of power.<sup>42</sup> The relatively brief period of time that elapsed between the publishing of the articles examined in this report — two of which were published in the nineteen forties, and the last of which was published in 1953 — should remind us of the importance of investigating the local social variables particular to each environment. We have attempted in this article to show that one need not always search for a political shift to explain the differences that appear between one historical moment and another. Rather, we believe that it could be argued that we have observed a shift in the agenda of Córdoba’s leading doctors, who would later show themselves to be more receptive to poliomyelitis research as the city’s number of poliomyelitis cases rose. At first, Córdoba’s leading doctors barely seemed to recognize poliomyelitis as an investigative priority. They were later to reject this view and to join an investigative tradition that was then being developed in the province, one that was based in local epidemiological concerns. While their work did not contradict the universal practices or cognitive models that were being constructed and diffused at this time, the new spaces that were opened up after the polio outbreaks of 1949–1950 and 1951–2 seem to have been ideal environments for the construction of scientific research practices informed by both an international body of knowledge about poliomyelitis and by issues relevant to the city of Córdoba.

As we have previously suggested, we believe that the path taken by medicine as it developed in Córdoba both caused notable disruptions in the medical field in regards to the treatment of polio and questioned the legitimacy of larger, politically hegemonic structures. The exploratory character of this article implies limitations: these did not permit us to deepen our study of the dynamics we have described here. This article has, however, enabled us to highlight some historical evidence and make some general conjectures that allow for a deeper understanding of Córdoba’s experience and the complex relationships that create tension, not only on the local level, but also in national and perhaps even international contexts. In our opinion, it is important to carefully examine the way that these relationships are understood in both epidemiological and power-oriented political contexts.

Dr. *Adrián Carbonetti* is associate professor of the “Centro de Estudios Avanzados”, National University of Córdoba. Main Researcher at the “Consejo Nacional de Investigaciones Científicas y Técnicas” in Argentina.

---

<sup>42</sup> D. Hurtado de Mendoza. *La Ciencia Argentina. Un proyecto inconcluso: 1930–2000*, Edhasa, (Buenos Aires, 2010). p. 23.

Dr. *Lila Aizenberg* is post-doctoral fellow at the “Consejo Nacional de Investigaciones Científicas y Técnicas” in Argentina.

Dr. *María Laura Rodríguez* is assistant professor of the History Department, National University of Córdoba. Research Assistant at the “Consejo Nacional de Investigaciones Científicas y Técnicas” in Argentina.

## References

- Allende, G. and Malvarez, O., “Poliomielitis anterior”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año I, Marzo, Nro. 1, (Córdoba, 1944).
- Ansaldi, W., *Industria y urbanización, Córdoba, 1880–1913*, Universidad Nacional de Córdoba, Mimeo, Tesis Doctoral, (Córdoba, 1977).
- Arce, H., *El territorio de las decisiones sanitarias*, Ed. H. Macchi, (Buenos Aires, 1993).
- Armus, D., “Los médicos, profesiones, poder y prestigio”, *Cuadernos de Historia*, Popular Argentina, CEAL, (Buenos Aires, 1981).
- Buschini, J., “Una carrera profesional con espacio para la ciencia en la Argentina de la primera mitad del siglo XX: Ángel Roffo y la cancerología experimental”, en *Quiju*, vol. 14, núm. 2, (2012).
- Canguilhem, G., “O Objeto da Historia das Ciências, in: Carrilho, M M (org.) *Epistemologia: posições e críticas*, Fundação Gulbenkian. (Lisboa: 1991).
- Carbonetti, A., “El sistema sanitario en la provincia de Córdoba, 1880–1926”, *Dynamis*, vol. 25, (2005).
- Capponi, S., “Epistemologia, historia de las ciencias y saber médico”, *Episteme*, v. 11, Nro. 23. (2006)
- Collection of Laws of the Legislature of the Province of Córdoba, 1952
- Dadone, A., “Cien de la industrialización en Córdoba 1873–1973”, *Revista de Economía Banco de la provincia de Córdoba*, n ° 24, (Córdoba 1974).
- Ferrante, P., “Rengueando el estigma: Modos de ser, pensar y sentir (se) discapacitado construidos desde la práctica deportiva adaptada”, *RBSE*, 9(27), (2010).
- González Alvarez, F., and Luque, P., “Epidemiología y Profilaxis de la enfermedad Heine Medin”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año III, Octubre-Diciembre Nro. 4, (Córdoba, 1946).
- Hurtado de Mendoza, D., *La Ciencia Argentina. Un proyecto inconcluso: 1930–2000*, Edhasa. (Buenos Aires, 2010)
- Quintero Toro, C., “¿En qué anda la historia de la ciencia y el imperialismo? Saberes locales, dinámicas coloniales y el papel de los Estados Unidos en la ciencia en el siglo XX”, *Historia Crítica*, Nro. 31, (2006).
- Koyre, A., *Estudios de historia del pensamiento científico*, Editorial Siglo Veintiuno, (México, 1982).
- Lezama, L.A., “La Parálisis infantil en la ciudad de Córdoba”, *Revista de la Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba*, Año XII, Julio-Septiembre Nro. 3, (Córdoba, 1954).

- Rodriguez, M.L., *Perspectivas en torno a la consolidación de la elite médica de Córdoba. Epidemias y Estado, 1878–1923*. Tesis de Licenciatura en Historia. Universidad Nacional de Córdoba, (Córdoba, 2006).
- Rodriguez M.L., *La medicalización de la ciudad de Córdoba en tiempos epidémicos: conceptos, saberes e intervenciones 1878–1927*. Editorial de la Municipalidad de Córdoba. (Córdoba, 2011),
- Ramaciotti, K., *Las políticas sanitarias del primer peronismo: ideas, tensiones y prácticas*. Tesis defendida en la Facultad de Ciencias Sociales de la Universidad de Buenos Aires. (Buenos Aires, 2008),
- Report of the Dirección General de Estadística Censos e Investigación*, Ministerio de Hacienda, Economía y Previsión Social de la Provincia de Córdoba, 1944–1948. Published in 1953.
- Report of the Dirección General de Estadística Censos e Investigación*, Ministerio de Hacienda, Economía y Previsión Social de la Provincia de Córdoba, 1949–1951. Published in 1953.
- Rosenberg, C., “Disease in History: Frames and Framers, *The Milkbank Quarterly*, 67, Suppl. 1. (1989).
- Testa, D., “Poliomielitis: la “herencia maldita” y la esperanza de la rehabilitación. La epidemia de 1956 en la Ciudad de Buenos Aires. *Intersticios*, Vol. 5 (2). (2011).
- Vessuri, H., “El crecimiento de una comunidad científica en argentina”, *Cad.Hist.Fil.Ci., Campinas*; Serie 3, V 5, Nro. Especial. (1995)

# History of a Strategy to Eradicate Poliomyelitis in Uruguay and Argentina<sup>1</sup>

Adriana Alvarez

## Introduction

The outbreak of poliomyelitis in the early 1950s turned it into one of the most feared diseases in the twentieth century. The resulting deaths and the thousands of children and adults who were handicapped world-wide made it a real threat which was only controlled with the introduction of the vaccines developed by Jonas Salk and Albert Sabin.

This paper addresses the different health policies applied on both banks of the River Plate, starting in the 1950s. Soon after that, several Latin American countries, among which were Argentina and Uruguay, started oral vaccination programs. This paper attempts to answer questions related to the characteristics of the vaccination programs in each of the two countries and their relation to the degree in which the disease affected each of them. It is part of a more extensive research project dealing with the social, political and cultural consequences of the polio epidemics in twentieth-century Argentina with a view to understanding what happened in order to explain the present Post-Polio Syndrome (PPS).

Research has helped to reveal that the original project had to be reviewed since, unlike other pathologies, poliomyelitis shared similar events and circumstances in several Latin American countries, at least up to mid-twentieth century, and so it was necessary to connect the processes. Although Latin American countries have generally shown great progress in consolidating the history of health and disease, in the current research there is a tendency to prioritize regional and/or local aspects, thus losing sight of the contexts within which the processes developed.

Less than a decade ago, Serge Gruzinski supported the idea that the historian should have a broader vision of history, beyond the nation, and proposed that ‘connections’<sup>2</sup> since histories are multiple, plural, are connected among each other and can intercommunicate.

---

1 Translated by Cecilia Chapman.

2 Gruzinski Serge “Les mondes mêlés de la Monarchie catholique et autres connected histories”. *Annales: Histoire, Sciences Sociales* 56 (2001), 85–117.

The 2006 publication in the *American Historical Review* magazine has been particularly stimulating to this paper, because it presents the idea that transnational history is not closed to any particular methodological viewpoint. Political history can be transnational, as can be cultural history, entrepreneurial history or the history of health and disease, since the emphasis is on observing the objects of research keeping an open mind regarding different methodological preferences and problems, and highlighting networks, processes, beliefs and institutions beyond the national sphere.

According to Isabel Hofmeyr, the key to understanding transnational history is its central concern with movements and circulations. Topics considered for transnational history are connected especially to social and/or political diaspora, to movements of groups of goods or people. I would add to this list pests and epidemics, such as that of poliomyelitis, which spread on both banks of the River Plate regardless of political boundaries.

This perspective led to the rise of several questions concerning the development of polio in countries neighboring Argentina, the answers to which might shed more light on the explanations arrived at in the national sphere. On this occasion, the vaccination campaigns in Argentina and Uruguay in the 1950s and 1960s will be dealt with, since they were the necessary previous steps to the eradication of polio some decades later.

Argentina and Uruguay, thanks to their geographical vicinity basically in the area of the River Plate, which outlines a border extending some 500 kilometers, are countries whose destinies have been intertwined since their origins. Although their sizes are different, both regarding geographical extension and demography, Uruguay shares the same climate and soil as that of the Argentine pampa area.

**Map 1.** Border between Argentina and Uruguay.





It is possible that their shared origin or the geographical vicinity can explain common patterns in political and health-policy development, as well as some differences stemming from the different realities each of these two countries had and have. The epidemiologic scenario must be understood within this frame.

## When Smiles Faded

Both Argentina and Uruguay were considered prosperous and modern countries within Latin America, with open economies based on farming, which around mid-twentieth century sought to strengthen their industries by substituting local for imported goods. On the other hand, both states had achieved an epidemiological transition which had mostly controlled infectious diseases, leaving the stage to circulatory, cardiovascular and other diseases. This was the result of multiple causes such as sanitary and economic improvements, new social practices and others. From a broader perspective it could be said that the states reached this stage with the development of the welfare state.<sup>3</sup> However, the first slump in infant mortality in Uruguay goes back to the first decade of the twentieth century when it reached the lowest rates for the times, only matched by Norway and Sweden, and it takes place during the start and consolidation of Batlle's welfare model.<sup>4</sup> Likewise, the persistence of high infant mortality rates in the Argentine hinterland in the mid-twentieth century leads to the consideration that, leaving aside the perceptions of the time, those "Welfare States" showed inconsistencies which were put to the test with the appearance of the polio epidemics, revealing that the actions the state took were ineffective.

Both Argentina and Uruguay had experienced sporadic outbursts of polio<sup>5</sup> since the start of the twentieth century<sup>6</sup> but it was only in the 1950s that the disease struck a large number of people, causing fear among the population at large.

---

3 Pellegrino, Adela. 2003. *Caracterización demográfica del Uruguay*. Montevideo. UNFPA-Facultad de Ciencias Sociales-Universidad de la República, Uruguay.

4 Birn, A.E., W. Cabella and R. Pollero. 2005. "La mortalidad infantil uruguaya en la primera mitad del siglo XX: un análisis por causas del pasado al presente." In *VII Jornadas Argentinas de Estudios de Población (Asociación de Estudios de Población de la Argentina)*, 2003, I: 37–154, Universidad Nacional de Tucumán. Tafí del Valle. Tucumán. On this topic also see Birn, A.E., R. Pollero and W. Cabella. 2003. "No se debe llorar sobre leche derramada. El Pensamiento Epidemiológico y la Mortalidad Infantil en Uruguay, 1900–1940." *Estudios Interdisciplinarios de América Latina y el Caribe* 1(1) 35–65.

5 The etiologic agent, a virus which spreads through contact with feces, was known since the thirties of the previous century, but its control was unknown.

6 Alvarez Adriana "El impacto de los brotes de poliomiélitis en las formas de organización ciudadana (Buenos Aires)" *Revista de Historia de la medicina y epistemología médica* vol .V – N 1-1 semestre de 2013 (ISSN 1852-6152, 2013).

The alarm was raised in the 1940s by the international events reflected in the main Uruguayan and Argentine newspapers, which portrayed the interest in and astonishment caused by the intensification of the disease in countries such as the United States and Canada, as well as by the local cases, which were increasing in number. Thus, by the 1940s polio was a health problem in both Argentina and Uruguay.

The following table shows that from the mid-1940s, polio had a variable but steady presence both in Argentina and in Uruguay, with Argentina showing a rise between 1945 and 1949 while Uruguay shows a fall in cases, even though the most serious epidemics took place in the following decade.

**Table 1.** Number of reported cases of poliomyelitis with rates per 100,000 inhabitants in Argentina and Uruguay, from 1945 to 1949

YEAR	ARGENTINA	URUGUAY
1945	2,5	8
1946	4,2	2,6
1947	2,9	5,6
1948	3,4	0,4
1949	6,6	0,9

**Sources:** Obtained from the Boletín de la Oficina Panamericana Año 34, vol. XXXVIII, Junio 1955, n 6

Children were at risk of dying or suffering the consequences of infantile paralysis. In Uruguay, during the period between July 1950 and June 30 1954 there were 248 reported cases of polio, according to the official records of the Ministry of Public Health. However, in the twelve following months, from July 10, 1954 to June 30, 1955, there were 550 reported cases which, in a country of 2.6 million inhabitants, constituted a serious epidemic, with an attack rate of 21 out of every 100,000 inhabitants.<sup>7</sup> In the case of Argentina, the 1950s had started with only isolated cases in the city of Buenos Aires and the province of Santa Fe. In 1953 these figures shot up, affecting 2579 people, of which 1,300 belonged to Buenos Aires, followed in quantity by the provinces of Santa Fe, Tucumán and Córdoba. In the face of this situation, the provincial governments also responded and in the province of Santa Fe, a Commission for the Defense against and Prevention of Poliomyelitis was

---

<sup>7</sup> Leunda, J. J., and others: Mass vaccination program with live, attenuated poliomyelitis virus in Montevideo, Uruguay. Live Poliovirus Vaccines: Papers Presented and Discussions Held at the First International Conference on Live Poliovirus Vaccines, Organización Panamericana de la Salud, Publicación Científica N° 44, Washington D.C., 1959, pp 638–646.

created to organize the fight against the disease in the face of the outbreak in the city of Rosario. Medical and political concern for the consequences of this disease did not lie so much on the death rate (179 deceased) as on the disabilities it produced (1316 handicapped victims) in the younger members of the population. Seventy-one percent of patients were children between zero and four years of age.<sup>8</sup> Cases began to be reported by the press in the month of January, and the number of infected victims rose. Up to then and until the appearance of the vaccine in 1955, measures were only palliative.

Some report says that:

...cleaning tasks were organized in towns and cities, triggered by the belief that the virus was 'in the air'. Neighbors chose spontaneously to clean up vacant lots and weed out gardens. Houses smelled of bleach and phenol, and camphor bags emerged from children's clothes, emitting their typical pungent smell... Any method or suggestion was adopted with alacrity to prevent contagion. It was common to see whitewashed walls and trees, which gave them a ghostly appearance. White bands on tree trunks were in place for many years, even when the epidemics had been forgotten thanks to the compulsory vaccination programs ..."<sup>9</sup>

Such testimonies show that both countries lacked resources and health policies to face the outbreak of the disease, among other reasons because, in spite of the concern with which cases in other countries were viewed, the lack of serious local epidemic outbreaks meant that there were no plans for any assistance network to combat them. On both sides of the River Plate, during the years when the epidemic struck, specific spaces had to be improvised such as wards in hospitals or emergency rooms in neighborhoods. This absence of previous planning was criticized by the government opposition groups, since on both banks of the River Plate critics referred to the "political paralysis" exhibited by the governments of the two countries when dealing with the outbreaks of polio.

## Infantile Paralysis and Political Paralysis. Years of Confusion

Which were the health models applied in Argentina and Uruguay in the years prior to the great polio epidemics? As mentioned before, from the start of the twentieth

---

8 In April 1949 there had been one case of infantile paralysis in the city of Buenos Aires, informed by the Ministry of Public Health on 21 April 1949. Memoria. Op.cit.: 312. Between the months of April and July 1951 there were cases of polio in the city of Buenos Aires and in the Province of Santa Fe. See Resolución N° 36.181, 5 July 1951 in Memoria. Op. cit: 405.

9 Interview to María Angelina Sánchez, affected by the 1956 polio epidemics. Diario Clarin 27/7/2013 [http://www.clarin.com/sociedad/epidemia-polio-marco-siempre\\_0\\_959304181.html](http://www.clarin.com/sociedad/epidemia-polio-marco-siempre_0_959304181.html)

century “infantile paralysis” was known in both banks of the River Plate, which means that by mid-century it was not an unknown disease either to doctors or to society at large. However, the outbreak was regarded with fear, surprise and puzzlement, as it took place at a time when the government, within a welfare state frame, had taken great health improvement measures in both countries.

Uruguay pioneered (with respect to Argentina) in adopting health reforms, based on a centralizing action of the state through the creation, in 1934, of the Ministry of Public Health, which unified the National Hygiene Council (a regulatory body) and the National Public Assistance (a health-care body).<sup>10</sup> The new Ministry centralized health policies and was the sole organizing body for the whole of the Uruguayan territory. Among its functions was the control of plagues and epidemics and the prevention of diseases.<sup>11</sup> This initiative was the result of the concentration of power carried out by the Terra regime (1933–1938)<sup>12</sup> within the framework of the 1934 Constitutional Reform which attempted the “foundation of the Third Republic.” This was a moderately conservative movement but it carried out important innovations such as the Food Institute, the Housing Institute, the reorganization of Public Health and the promotion of the Children’s Code.<sup>13</sup>

Subsequently, during the neo-Batlle period (roughly between 1940 and 1960) there were a series of important institutional transformations such as the changes in the etiological models which organized the field of health knowledge, the institutional changes such as the emergence of new organizational spaces in health care, the training of new health agents under the strong influence of international agencies in the consolidation of management models and in the role of the different categories of professionals in health care.<sup>14</sup> Thus, the creation of public health policies, together with the signing of several international agreements in the field of health care and prevention, led to the creation of many health centers. Their origin can be found in a context of development in Uruguay of health-care preventive strategies and in the consolidation of international agreements both bilateral and with multilateral agencies. The health centers were defined as spheres institutionally devoted to the prevention of disease and the promotion of health care and must be located within a pan-American post-war strategy under the hegemony of the United

---

10 Portillo, José. “Historia de la medicina estatal en Uruguay (1724–1930)”. *Rev Med Uruguay* 1995, 11:5–18

11 Margolis, E., N. Piazza. *Organización de la atención médica en el Uruguay*. Montevideo. Nordan, 1989.

12 Gabriel Terra was elected to the Presidency of Uruguay for the period 1934–1938.

13 The presidents during this period were Alfredo Baldomir (1938–1943), Juan José Amezaga (1943–1947) and Luis Batlle (1947–1958)

14 Ortega, Elizabeth; Mitiavila, Myriam Raquel. Preventismo sanitaria y la institucionalización del Trabajo Social en el Uruguay neobatllista: una indagación genealógica. *Revista Katálysis*, vol. 8, núm. 2, Julio-diciembre 2005, pp. 211–224. Universidade Federal de Santa Catarina, Santa Catarina, Brasil.

States and parallel to the creation of international agencies which became essential in developing key programs.<sup>15</sup> In spite of all this, as will be seen below, this new State-monitored sanitary map was incapable of either containing the poliomyelitis outbreaks which struck Uruguay or of coping with their after-effects. Rehabilitation of victims suffering from after-effects of polio was carried out, as also happened in Argentina, by physicians who had had training in United States hospitals and had become acquainted with the so-called Rehabilitation Centers, which were built locally thanks to community volunteer work. In Uruguay, the Recovery Center for Handicapped Children was founded by Dr. Ricardo Cariat Larrar not as part of a state policy but as part of a citizen project.

Argentina created the Ministry of Health after the Constitutional Reform of 1949 and the 13,259 Ministry Law, that is, belatedly with respect to Uruguay. The State's role regarding health was divided into three distinct branches: medical attention, sanitary medicine and social medicine. A structure of geographical de-centralization was built within these fields of work and the country was divided into regional centers which, due to the physical characteristics of Argentina (size and communications networks) sought action coordinated with a greater field of autonomy in the operational headquarters.

A national program of hospital building, as established by Law 13,019, was carried out together with the regional organization, as part of the National Health Plan<sup>16</sup> which in turn was included in the First Five-Year Plan which Peronism enthroned in its quest to consolidate the image of a central State, and with some characteristics similar to those stated for Uruguay.

## In between Political Crises and Poliomyelitis Outbreaks

In mid-twentieth century, Juan Domingo Perón, in Argentina, and Luis Batlle Berres, in Uruguay, were responsible for setting up a strong central State, controlling not only economic aspects but also social ones, and both gave a leading role to working sectors. Public policies in general and health care policies in particular were the offspring of this model of state embodied by both Perón and Batlle.

---

15 Ortega, Elizabeth; Mitiavila; Myriam Raquel. Preventivismo sanitarista y la institucionalización del Trabajo Social en el Uruguay neobatlista: una indagación genealógica. *Revista Katálisis*, vol. 8, núm.2, Julio-diciembre 2005, pp. 211–224. Universidade Federal de Santa Catarina. Santa Catarina, Brasil, p. 214.

16 ORGANIZACION SANITARIA PANAMERICANA. Decimotercera Conferencia Sanitaria Panamericana. Comité Regional. Organización Mundial de la Salud. Ciudad Trujillo, República Dominicana. Octubre 1–10 de 1960. Publicación N° 261 Anexo °, Septiembre, 1952. Oficina Regional de la Organización Mundial de la Salud. Washington D.C., E.U.A.

The great outbreaks of poliomyelitis tarnished or blurred the plans previously outlined and served to feed the political crises suffered by Peronism in 1955 and by Batllism three years later.

The onset of polio in Argentina, during the heyday of Peronism, alternated from a 10.6 rate in 1943 to a low rate of between 3.0 and 5.0 cases every 100,000 inhabitants, without any particular action being taken to bring the rate down. But in 1953 there were a total of 2,579 cases, which constituted a rate of 14.0 per 100,000 inhabitants. The two following years saw rates of between 2.0 and 4.0, which brought some relief to the authorities, who were accused by the opposition of suffering from political paralysis on account of the absence of reaction they showed in the face of the disease. In fact, although hospitals had enough beds for polio patients, technical and human resources were scarce and it took a long time for the government to bring them together in specific, specialized spaces, at least within the frame of the State agencies. This is why the year 1943 saw the creation of ALPI, the association against infantile paralysis, founded by Dr. Marcelo J. Fitte. This was the sole private clinic which treated patients with motor disabilities and with polio handicaps entirely for free, thanks to community aid exclusively.

In mid-twentieth century and as a consequence of the worsening of the polio outbreaks both in Argentina and Uruguay, comprehensive rehabilitations centers arose to cater to the need for recovery of the after-effects of polio. These institutions were directly linked to the rehabilitation boom which began in the post-World War II period, spurred by the outbreaks of the 1940s and 1950s.<sup>17</sup> By that time, some physicians considered that rehabilitation in the case of polio was not a therapeutic technique but rather “a group of methods that allowed the lessening of all kinds of alterations in movement – handicapped patients to ease their integration or re-insertion into social life”.<sup>18</sup>

But while these therapeutic changes were introduced, in 1955 and a few months after the military coup that ousted Argentina President Juan Domingo Perón, the Salk vaccine was introduced. Developed by Dr. Jonas Salk, this vaccine introduced a small amount of the virus into the body, which later developed antibodies and an ability to combat the more powerful strains of the disease. Its appearance generated an atmosphere of confidence and the purchase of consignments was announced while different publications and conferences served the purpose of spreading the importance of the vaccine. However, both in Argentina and in Uruguay, the worst was yet to come.

---

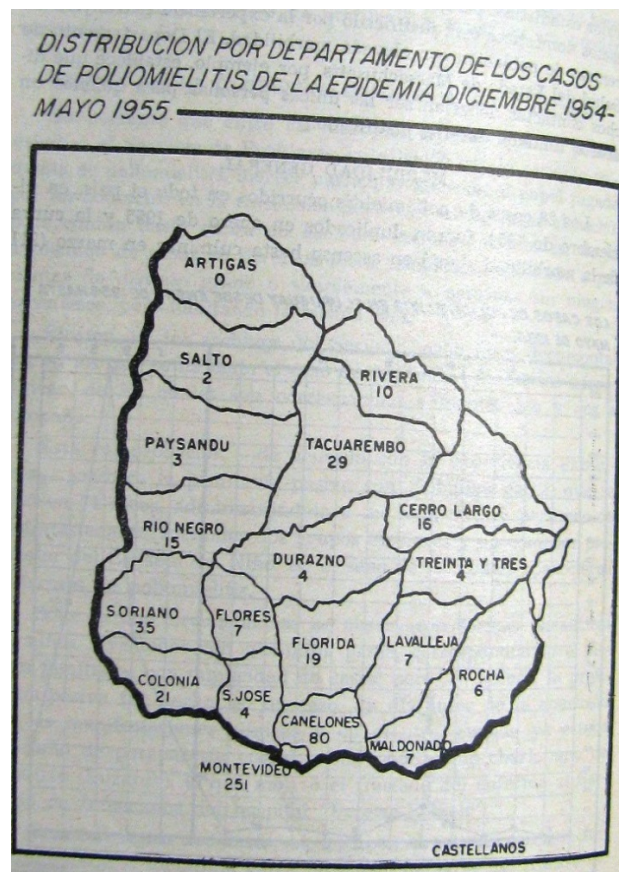
17 A. Amate, A. Vazquez. Evolución del concepto de discapacidad. *Discapacidad, Lo que todos demos saber*. Organización Panamericana De la Salud, Publicación Científica y Técnica N° 616, 3–7.

18 Bravo E. *Cuestiones médicas y sociales que plantea la organización de un Centro de Rehabilitación de niños afectos de enfermedad motriz*. Madrid: Servicios de Protección Maternal e Infantil, Dirección General de Sanidad; 1958.

In 1954, Uruguay suffered 85 cases (a rate of 3.3 per 100,000 inhabitants), most at the end of the year, in December, and the number of cases rose in early 1955.<sup>19</sup> The 28 cases reported in December 1954 had doubled by January 1955 until a high was reached in March: 211 cases. Out of a total number of 524 cases in that outbreak, 255 cases belonged to Montevideo (the capital of Uruguay) and 269 to the Departments. The highest sickness rate was in infancy (44.4% under the age of three).<sup>20</sup>

Where did the outbreak originate? Judging by the existing records, the first cases did not appear in the capital city but in the locality of San José, which, as can be seen in the period map, lies close to the Uruguayan capital of Montevideo.

**Map 2.** Distribution of poliomyelitis cases in different areas of Uruguay, December 1954 – May 1955



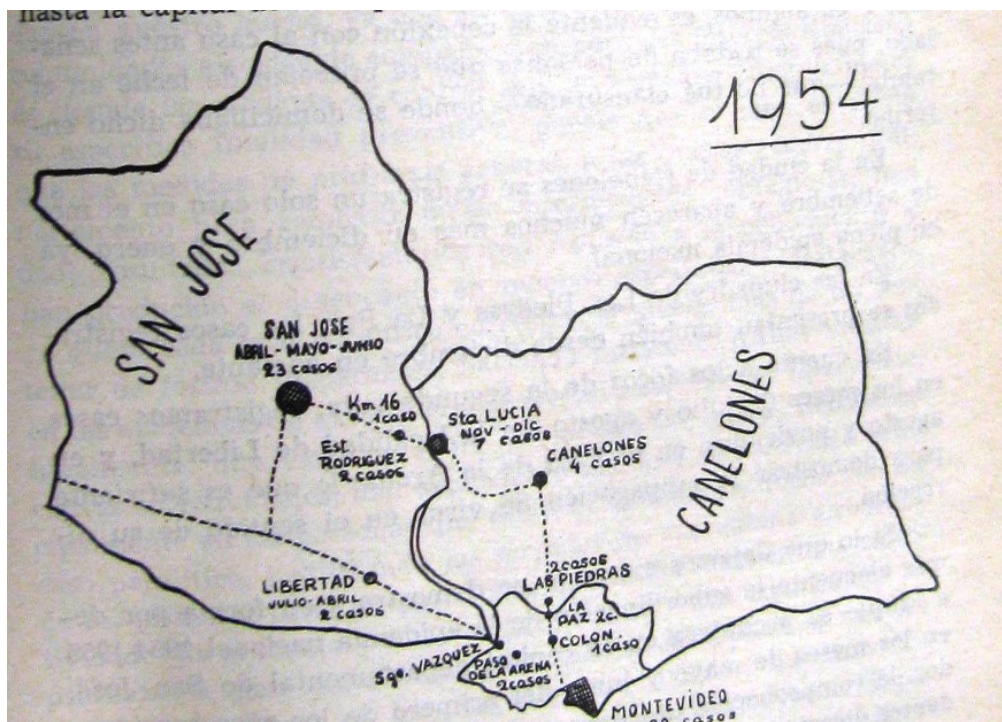
**Source:** Gómez Malaret, Simón and Osvaldo Luzardo, Poliomyelitis: Epidemia de 1954–1955 in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956, n 8 p. 512.

<sup>19</sup> Gomez Malaret, Simon and Osvaldo Luzardo. Poliomyelitis. Epidemia de 1954–1955 in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956, n 8, p.512.

<sup>20</sup> Gómez Malaret, Simón and Osvaldo Luzardo. Poliomyelitis. Epidemia de 1954–1955 in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956, n 8, p. 510.



Map 3. Poliomyelitis cases in San José, Canelones and Montevideo



Source: Gómez Malaret, Simón and Osvaldo Luzardo, Poliomieltis: Epidemia de 1954–1955 in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956 , nº 8 p. 512.

Transmission was effected by “...people coming directly from San José ....to Montevideo...spreading contagion to other localities” because...it has greater communication with each one of the Departments...” as can be seen in the following chart.

This time, the State did not react, did not establish sanitary containment lines to prevent the disease from spreading from one locality to the next. Considering that the cycle began in rural communities and that it was detected in its early stage (the cases were reported immediately), the rural communities or its sick members could have been placed in isolation to prevent contact between affected and healthy communities. What is worse, there were double cases in family groups<sup>21</sup> since at that time there was little if no chance of getting the Salk vaccine, measures were basically palliative and were based on passive preventive treatment through the use of gamma globuline shots. The problem was that they were administered too late (“...they use was delayed...”) since it was prescribed for domestic contacts to prevent contagion within the households.

The rate of incidence of the disease was of 25 cases every 100,000 inhabitants in Montevideo; 178 cases every 100,000 inhabitants in the countryside and 20 cases out of 100,000 in the country at large. Clearly, the countryside was struck hardest. In

21 Gómez Malaret, Simon and Osvaldo Luzardo. Poliomieltis: Epidemia de 1954–1955, in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956, n 8, p. 512.



1956 there was a drop in the disease which "...a total of 71 cases of poliomyelitis a recorded, 18 of which belong to the capital and 63 to the rest of the country...".<sup>22</sup> It was precisely in that year that, as we shall see below, vaccination with inactive virus of the Salk type, was begun.

It is a unique case that, according to the Medical Records "...in Uruguay the greatest tribute to the disease lies with the less benefitted classes of society, unlike as allegedly happens in other countries. Sixty percent of the cases fall within the regular bad classification and forty percent to good very good...".<sup>23</sup> This has a bearing with what has been explained above: the countryside was struck hardest and had few health care resources.

What was going on in the borders of Uruguay? In the last months of 1955, in an Argentina which had ousted Peronism from power, there were 435 cases, which meant a rate of 2.3 every 100,000 inhabitants,<sup>24</sup> reported by the press and denied by the new authorities, who had in the past condemned the previous government for denying the appearance of the disease. The following year, under the *de facto* government of Pedro Eugenio Aramburu, the figure grew to 6,496 cases, or a rate of 33.3 cases every 100,000 inhabitants.<sup>25</sup>

....During a span of around two months, the health authorities, while admitting the existence of cases, denied that it was an epidemic and sought to ease the concern caused by alarmist reports which exaggerated the situation and produced great anxiety in those household where there were children. At last, seeing the gravity of the disease and the repetition of medical statements to the effect that there were more than fifty cases per day, the Government finally admitted that there was an epidemic...<sup>26</sup>.

The foreign and national press reported the situation, stating that the first cases arose in the area of Greater Buenos Aires, causing "...true alarm in the country..."<sup>27</sup> due to the extension of and death rate produced by the outbreak.

---

22 Luzardo, Osvaldo. Epidemiología de la poliomielitis en Uruguay. Posteriormente a la epidemia nacional 1954–1955...in: Archivos de Pediatría del Uruguay, p. 32.

23 Gómez Malaret, Simon y Osvaldo Luzardo. Poliomielitis: Epidemia de 1954–1955, in: Archivos de Pediatría del Uruguay, Año XXVII, Agosto de 1956, n 8, p. 512.

24 Figures from "Epidemiología de la poliomielitis formas paralíticas-año 1958", Ministerio de Asistencia Social y Salud Pública. Sección de Estadísticas Vitales. Buenos Aires, Argentina, 1959.

25 Figures from "Epidemiología de la poliomielitis formas paralíticas-año 1958", Ministerio de Asistencia Social y Salud Pública. Sección de Estadísticas Vitales. Buenos Aires, Argentina, 1959.

26 ABC newspaper "Aumenta de manera alarmante la epidemia de poliomielitis. Once defunciones en una sola jornada. Estados Unidos y otros países envían a la Argentina personal científico y material sanitario". Sábado 17 de marzo de 1956, p. 899.

27 ABC newspaper "Aumenta de manera alarmante la epidemia de poliomielitis . Once defunciones en una sola jornada. Estados Unidos y otros países envían a la Argentina personal científico y material sanitario" Sabado 17 de Marzo de 1956 p. 899.

With the 1956 outbreak, the report established by the World Health Organization in November 1955 became of central importance. On that occasion, the WHO summoned a group of international experts to examine the several aspects related to poliomyelitis. One of the aspects highlighted by the group was the convenience of using the vaccine, above all its distribution according to age groups, since paralytic poliomyelitis was more severe in adults.

Figure 1. Newspaper *La Nación*



But availability of the Salk vaccine was complicated in these countries, unlike what happened in Europe, where most of the countries were using locally produced inactive vaccines, although they sometimes had to import them from the United States and Canada to cover the demand.<sup>28</sup> Argentina and Uruguay had to import them, which not only increased the costs of purchase but also slowed it down. This is why the Revolutionary Liberation government of Argentina, in the early months of 1956 and owing to the absence of Salk vaccine consignments, began administering the first gamma globuline shots in schools in March,<sup>29</sup> with the intention of immunizing 300,000 children between three months and five years of age.

---

28 Porras, María Isabel, María José Báguena, Rosa Ballester and Jaime de las Heras. “La Asociación Europea contra la Poliomielitis y los programas europeos de vacunación”. In: *Revista Dynamis*, 2012, 23(2):287–310.

29 *La Nación* newspaper, jueves 23 de marzo de 1956, p. 1.

Figure 2. Newspaper *La Nacion*



Gamma globuline was used because, according to the Argentine authorities “...at present it is a comprehensive solution sought to annul the epidemic...”, with the intent of creating defenses in the younger ones<sup>30</sup> in order to counteract the effects or the development of the disease, while awaiting the arrival of consignments of Salk vaccines which took place after the main outbreak in the summer season. This is why it was in 1956 that the first Salk inoculations were carried out in both countries, increasing in number the following year.<sup>31</sup>

In Uruguay, vaccination with Salk-type inactive viruses was carried out on limited areas of population, at a moment when, given the sudden fall in the number of cases, concern had lessened and given way to lack of interest, which was also a consequence of the doubts perceived regarding effectiveness or consequences of inoculation.

---

<sup>30</sup> *La Nación* newspaper, 14 de marzo de 1956, p. 1.

<sup>31</sup> The Salk vaccine or inactive poliovirus vaccine (IPV) is based on three reference varieties: Mahoney (poliovirus type 1), MEF-1 (poliovirus type 2) and Saukett (poliovirus type 3). The viruses are cultivated in Vero cells from monkey kidney epithelial tissue and are later inactivated through the use of formaldehyde. The Salk vaccine provides immunity mediated by immunoglobuline in the bloodstream, which prevents the progress of the poliovirus infection to a viremia and protects the motor nerve cells. In this manner, the risks of bulbar polio and of post-polio syndrome are eliminated. However, since there is no protection to the intestinal membrane, people who have received the Salk vaccine may be carriers and transmit the disease to non-vaccinated individuals.

Besides, this perception was increased by the negative experiences such as that the vaccine “...brought the disease upon 200 people who were immunized with defective material...”,<sup>32</sup> According to Ministry of Public Health official figures, use of the Salk vaccine was relatively scarce and shows a fall towards the end of the decade, as can be seen in the following chart:

**Table 2.**Number of people who received three or more doses of Salk vaccine

Year	People Vaccinated
1956	0
1957	26.425
1958	18.805
1959	14.657
1960	8.499

**Source:** Albert Sabin “Planeamiento de la eliminación de la Poliomiélitis en Basil, Uruguay, Argentina y Chile” in: Boletín de la Oficina Sanitaria Panamericana, Washington , 1962 p. 502.

In 1958, with the onset of a new epidemic, the Montevideo Department Council began anti-polio oral vaccination campaign with weak Cox virus strains produced by the Laderle Laboratories. Up to that moment, two types of vaccines had been used in the world: the injectable vaccines with dead or inactivated viruses (Brodie, Kolmer, Lepine and Salk) and the oral vaccines with weak live viruses (Cox, Koprowski and Sabin). The Brodie and Kolmer vaccines were soon abandoned. By then, reports in Europe showed a rise in the use of the Sabin vaccine following the reports on the result of the application of this vaccine in the Soviet Union, as presented in the V International Congress (1960).<sup>33</sup>

In the late 1950s, some 325,000 inhabitants of Montevideo, of all ages, had received the vaccine. However, there were 87 cases of paralysis in Montevideo, where the population made up more than one third of the total population of Uruguay, and 75 cases in the areas where no vaccines had been administered and, in some cases, in localities where some vaccines had been used but on a very small number of the population.<sup>34</sup> This rise, in the midst of the progress in the vaccination program, can be explained by limiting factors, such as lack of coordination and absence of state

32 *La Nación* newspaper. Buenos Aires, 1956.

33. Luzardo O. Epidemiología de la poliomiélitis en el Uruguay posteriormente a la epidemia nacional 1954–1955. En: Arch. pediatr. Urug.34(1): 32–42; 1963.

34 Tercer Informe del Comité de Expertos en Poliomiélitis, Serie de Informes Técnicos nº203, OMS, Ginebra, 1960, p.15.

planning to prevent the disorganization shown in this stage. Such lack of organization can be ascribed to the political and institutional situation Uruguay was undergoing at the time, since in 1958 the Partido Nacional won elections, displacing the Partido Colorado, which had governed for 93 years. Thus did neo-Batllism come to an end.

On the other hand, we must point out that the Salk vaccine showed its usefulness in preventing polio paralysis, but its application had some drawbacks. The high cost of the vaccines made it difficult for the states to buy them, so they had to rely on voluntary contributions made by citizens in response to campaigns organized by physicians or non-profit public welfare organizations. Besides, each individual had to receive three doses which had to be taken throughout a long time span of at least eight months for the immunization to be effective, with the added disadvantage that the vaccine protected those who had been vaccinated but did not prevent polio infection, as it did not prevent multiplication of polioviruses in the bodies of the immunized individuals.<sup>35</sup>

The Committee of experts in poliomyelitis of the World Health Organization, after considering the improvements of the times, recommended in July 1957 that the oral vaccine should be used in areas with endemic infantile poliomyelitis or at the onset of an epidemic, or during its development. In the last case, the recommendation was based on the fact that, as explained above, the Salk vaccine did not have immediate effect nor did it interrupt the transmission of the virus. On the other hand, the oral vaccine acted speedily, produced antibodies in a few days, and, by acting on the intestine, prevented intestinal multiplication of the epidemic polioviruses.<sup>36</sup>

These recommendations, added to those made by the Pan American Health Organization to similar account, influenced different countries. Uruguay was a pioneer, using Cox strains in 1958. In the early 1960s (1960–61) there was an increase in polio cases, which was due to the characteristics of the immunization process, in which the size of the vaccinated population was neither large nor encompassing, unlike what happened later, with the first Sabin oral vaccination campaign of 1962.<sup>37</sup> The case of Uruguay is contemporary with that of the United States, and it was Uruguay and Chile, within Latin America, who first experimented with changes in vaccination campaigns early on in the 1960s.<sup>38</sup> Between 1962 and 1964 there were massive oral vaccination campaigns against poliomyelitis. In the first campaign, 80%

---

35 An individual vaccinated with the Salk vaccine may carry in his intestines a large quantity of polioviruses, which reproduce in the same way as in those people who have not been vaccinated.

36 Bacigalupi, J.C. Estado actual de la vacunación antipoliomielítica por vía oral, con virus vivos atenuados. In: *Arc. Pediatr. Urug.* 34(2–3):100–111 and 175–184; 1963.

37 The OPV is an oral vaccine with weak live viruses, prescribed at months 2, 4, 6 and 12 with an additional dose at the age of five. Uruguay began this massive campaign with OPV in 1962.

38 *Las condiciones de salud en las Américas. 1961–1964. Publicación Científica n° 138. Agosto de 1966. OPS/OMS. Washington, p.63.*

of the country's population under the age of twenty was vaccinated; in 1964 the new generations were immunized and the 1962 group was vaccinated again. Children under three years of age were intensely targeted and all children up to the age of fourteen were vaccinated again.

The results were clear and of the few sporadic cases reported in 1970, most were of children who had not been immunized.<sup>39</sup>

The 1962–64 campaign gave way in 1966 to the DPT and Polio vaccination plan, which used the polyvalent vaccine against polioviruses I, II and III, in use up to the 1980s.<sup>40</sup>

Argentina used the Salk vaccine up to 1964, when it began to use the oral Sabin vaccine. This change brought about a fall in the number of cases of the disease (the lowest rate can be found in 1967 with a rate of 0.3 every 1,000 inhabitants). But the later lack of continuity in the vaccination programs triggered off a rise in cases from 1968, with an outbreak which lasted until 1974.

The development of massive vaccination programs from 1971, added to an intensified watch system, allowed the disease to be controlled by 1977. Between 1978 and 1984 there were isolated outbreaks, most of them belonging to type 1 (the most severe type). Since 1984 no cases of polio have been recorded in Argentina. In 1984 the last case was recorded in the town of Orán, province of Salta and since then there have been no recorded cases of wild viruses in the country.

## By Way of a Conclusion

The previous pages have analyzed the course of poliomyelitis in two South American countries, and, through a multidimensional approach have explained two well-defined historical moments: the early twentieth century and the period which began in mid-century. As regards the latter, infantile paralysis served as a catalyzer of different aspects of the two countries' social reality, since it brought to the forefront the limits of medical science, which, until the appearance of vaccines, left the state agencies without the tools to successfully cope with the epidemics. It also served to show that although operative forms of the welfare state were present in both countries involved in the study, these were not fully operational and were partial versions which gave rise to different institutional universes and different interventions, at least

---

39 XII CONFERENCIA SANITARIA PANAMERICANA. XXII REUNIÓN DEL COMITÉ REGIONAL WASHINGTON D.C., E.U.A. SEPTIEMBRE-OCTUBRE 1970.

40 The National Vaccine Plan is postponed until 1981, when law 15272 established compulsory vaccination against eight diseases (tuberculosis, tetanus, whooping cough, diphtheria, poliomyelitis, measles, rubella and mumps). Its application by the Ministry of Public Health gives way to the present Broadened Immunizations Program, national counterpart to the program established for the region by the Pan American Health Organization.

regarding vaccination campaigns. The absence of a State of Commitment towards the paralyzed children patients was a steady component as was the citizens' response: through different events and/or organizations, citizens organized ways of providing the vaccines and created specific aid facilities, both of which the state agencies did not provide, such as the Anti-Poliomyelitis Centers. These new civilian actors, who arose within a robust State model which aspired to centralize and regulate the provision of health care services, were the ones who raised awareness to the fact that the notion of universal coverage for their children's ailment did not exist. This lack of coverage was evidenced not only by the absence of policies for the treatment of children who had survived polio, but also, and principally, by the fact that the existing public sanitation models were not incorporating the changes in the concept of what it meant to be handicapped or the new ideas surrounding child disability, an idea which included both physical and social rehabilitation.

*Adriana Carolina Alvarez* is researcher at the National Council of science and technology (CONICET) and the Centre for historical studies (Cehis) in Buenos Aires Argentina; Professor of the Faculty of Humanities of the National University of Mar del Plata.

## References

- Alvarez Adriana “El impacto de los brotes de poliomielitis en las formas de organización ciudadana (Buenos Aires)”, *Revista de Historia de la Medicina y Epistemología Médica* V: 1 (2013), 1–13.
- Bacigalupi, J.C. “Estado actual de la vacunación antipoliomielítica por vía oral, con virus vivos atenuados”, *Archivos de Pediatría de Uruguay*. 34(2) (1963), 100–111.
- Birn, A.E., W. Cabella and R. Pollero, “La mortalidad infantil uruguaya en la primera mitad del siglo XX: un análisis por causas del pasado al presente.” In *VII Jornadas Argentinas de Estudios de Población (Asociación de Estudios de Población de la Argentina)*, I: 37–154, Universidad Nacional de Tucumán. Tañá del Valle. (Tucumán, 2005).
- Birn, A.E., R. Pollero and W. Cabella, “No se debe llorar sobre leche derramada. El Pensamiento Epidemiológico y la Mortalidad Infantil en Uruguay, 1900–1940”, *Estudios Interdisciplinarios de América Latina y el Caribe* 1(1) (2003), 35–65.
- Gomez Malaret, Simon and Osvaldo Luzardo. “Poliomielitis. Epidemia de 1954–1955” *Archivos de Pediatría del Uruguay*, 27(8) (1956), 512– 520.
- Margolis, E., N. Plaza, *Organización de la atención médica en el Uruguay*. (Montevideo. Nordan, 1989).
- Luzardo, Osvaldo, “ Epidemiología de la poliomielitis en Uruguay”, *Archivos de Pediatría del Uruguay*, 34(1) (1963), 32–42.
- Ortega, Elizabeth; Mitiavila, Myriam Raquel, “Preventismo sanitarista y la institucionalización del Trabajo Social en el Uruguay neobatllista: una indagación genealógica”, *Revista Katálysis*, 8(2) (2005), 211–224.
- Pellegrino, Adela, *Caracterización demográfica del Uruguay*. Montevideo. UNFPA-Facultad de Ciencias Sociales-Universidad de la República, Uruguay. 2003.
- Portillo, José, “Historia de la medicina estatal en Uruguay (1724–1930)”. *Revista Medica Uruguay*, 1 (1995), 5–18.
- Porras, María Isabel, María José Báguena, Rosa Ballester and Jaime de las Heras. “La Asociación Europea contra la Poliomielitis y los programas europeos de vacunación”. In: *Revista Dynamis*, 23:2 (2012), 287–310.
- Reggi, José “El problema del tratamiento de la parálisis infantil en nuestro país”, *Segunda Conferencia para el Bienestar del Lisiado*. (Buenos Aires, 1946).



# The Eradication of Poliomyelitis in Spain: Projects, Obstacles, Achievements, Realities

Rosa Ballester, María-Isabel Porras and María-José Báguena

## Introduction

The main aim of our paper is to provide a historical approach to the complex process undertaken in Spain to achieve the official WHO certificate of polio eradication in 2002, within the framework of the initiatives launched in the WHO European Region. At the time of the first meeting of the European Regional Commission for the Certification of Poliomyelitis Eradication in 1996, the epidemiological situation and levels of vaccination cover (over 90%) enabled Spain, like other countries, to ensure compliance with the conditions set by the World Health Organization. This showed that the country, at the end of the twentieth century, had achieved high public health standards, which is remarkable if one considers that the country had suffered forty years of dictatorship and that the previous health care system had important failings. The changes that allowed Spain to join those European countries that obtained eradication certification are to be found within the framework of the deep social, political, economic and cultural transformation behind this process. In order to make a more complete assessment, we seek to analyse the set of projects designed, the obstacles encountered in their practical implementation and the final outcomes.

Our main sources are the official WHO publications – technical reports, the *Bulletin of the WHO* and other documents– as well as Proceedings of the International Poliomyelitis Conferences (1948–1960) and the European Association against Poliomyelitis Symposia (1953–1969)<sup>1</sup>. In addition we have used printed sources and other kinds of grey literature (reports and other unpublished

---

1 Information about both scientific meetings and The European Association against Poliomyelitis figures in Maria-Isabel Porras; María-José Báguena; Rosa Ballester, “Spain and the scientific conferences on polio, 1940s–1960s”, *Dynamis*, 30 (2010), 91–118; María-Isabel Porras; Rosa Ballester; María-José Báguena; Jaime de las Heras, “La Asociación Europea contra la Poliomielitis y los programas europeos de vacunación”, *Dynamis*, 32(2) (2012), 287–310.

documents) from the archives of the Carlos III Institute of Health<sup>2</sup>, as well as the *Spanish Weekly Epidemiological Bulletin* and a selection of daily newspapers such as *ABC*, *La Vanguardia*, and *El País*<sup>3</sup> in order to analyse how an ambitious global health initiative was implemented at a local level. Finally, we have also used the oral testimony of a key figure, the president of the National Commission for the Certification of the Eradication of Poliomyelitis, Ferran Martínez-Navarro.

The programme to eradicate polio worldwide must be considered in the broader context of the eradication of infectious diseases of which, the first and most successful programme was the global eradication of smallpox led by the WHO between 1967 and 1978<sup>4</sup>. Indeed, this highlight is one of the great success stories of twentieth-century public health medicine and a fundamental stimulus not only for contemporary debates regarding the possible eradication of other infectious diseases<sup>5</sup>, but also for the launch, a decade later, of the Global Polio Eradication Initiative<sup>6</sup>. Most doctors and public health workers<sup>7</sup> were aware of the historical significance of the process and described the need to clarify concepts in this new area that appeared to be opening in the history of medicine and public health. Previously the term “eradication” had been used inaccurately to mean the disappearance of a particular infectious disease in a particular country. Thus, the term “global eradication” was coined in the 1980s to describe the achievement of a

---

2 As we will show, this Institute had a prominent role in the final control of the poliomyelitis in Spain and in the development of the Spanish epidemiology and virology through the National School of Health and the Virology Institute of Majadahonda (Madrid, Spain).

3 *ABC* (1903–) is a monarchist daily newspaper, representing the national general-interest press, and has been widely-circulated for many years. *La Vanguardia* (1881–) is a Catalan general-interest daily newspaper, a very good example of the commercial press founded at the end of the nineteenth century; it has succeeded in maintaining its important position to the present day. *El País* (1976–) is a national daily newspaper that played an important role among the media of the Spanish Transition after the Dictatorship of Franco. Although little information was forthcoming from these sources, we still consider them essential for a comprehensive analysis, as in the case of the *Boletín Epidemiológico Semanal (Spanish Weekly Epidemiological Bulletin)*. The review of the six years between 1996 and 2002 of the latter has enabled us to recover only 4 articles related to the polio eradication process in Spain and 2 on the situation in the World.

4 Hervé Bazin, *The Eradication of Smallpox* (San Diego, 2000); Frank Fenner, “The Eradication of infectious diseases”, *South African Medical Journal*, 66 (1988), 35–39; Frank Fenner; Donald A. Henderson; Isao Arita et al., *Smallpox and its Eradication* (Geneva, 1988); Donald Henderson, “Smallpox eradication: a victory against the Cold War”, *World Health Forum*, 19 (1998), 115–121.

5 Dorothy M. Hortsman, “Preface”, *Reviews of Infectious Diseases*, 6 (Suppl. 2) (1984), S301.

6 Matthew R. Smallman-Raynor; Andrew D. Cliff; Barry Trevelyan; Clive Nettleton; Sam Sneddon, *A world geography. Poliomyelitis. Emergence to eradication* (Oxford, 2006), p. 564.

7 James Chin, “Can paralytic poliomyelitis be eliminated?”, *Reviews of Infectious Diseases*, 6 (Suppl. 2) (1984), S581–585.

level of control of infectious diseases characterized by the complete and permanent cessation, worldwide, of the natural transmission of infectious agents.<sup>8</sup>

Global eradication campaigns were launched during the term of Marcolino Candau (1911–1983) as Director General of the WHO, but mostly it was his successor Halfdan Mahler (1923–), Director General three times between 1973 and 1988, who inspired the process at a time when the WHO was entering a phase of renewal. In this period, the organization emphasized not only technical aspects (insisting on the rigorous application of epidemiological methods with a strong statistical base) but also a social approach in which the participation of community in health issues was fundamental. These ideas were explicitly set out in the paradigmatic Declaration of Alma Ata in 1978 and the GOBI strategy (Growth monitoring, Oral rehydration techniques, Breast feeding, Immunization) which included universal vaccination against the major preventable diseases. The new proposals were different from the previous “vertical” ones. In this way, the most important change was that the eradication and immunization programmes ceased to operate according to a rigid design applied “from above” with low levels of participation of the people involved in vaccination campaigns<sup>9</sup>.

The authors who have studied the history of the approaches adopted by WHO at different stages of the organization<sup>10</sup> have stressed that, in order to achieve these objectives, it was necessary to take into account such local circumstances as the propaganda strategies of vaccination programmes which were adapted to the socio-economic structures and specific cultures where the activities were to be carried out. This was fundamental in understanding both the achievements and the failures of those programmes according to local circumstances.

## Polio as a Target of Worldwide Eradication

The selection of polio as a second candidate disease within the eradication project was taken in 1988 as a part of the conclusions of the 41<sup>st</sup> World Health Assembly. The formal process for the eradication of polio was established on the basis of the experience with smallpox. Independent groups of experts were appointed to

---

8 Frank Fenner, “The eradication of infectious diseases”, *South Africa Medical Journal*, 66 (suppl.) (1986), 35–39.

9 Marcos Cueto, *The value of health. A history of the Pan American Health Organization* (Washington, 2007).

10 World Health Organization, *The first ten years of the World Health Organization* (Geneva, 1958); World Health Organization, *The second ten years of the World Health Organization from 1958 to 1967* (Geneva, 1968); World Health Organization, *The Third ten years of the World Health Organization, 1968–1977* (Geneva, 2008); World Health Organization, *The Fourth ten years of the World Health Organization, 1978–1987* (Geneva, 2011).

international, regional and national level commissions in order to establish a set of criteria and conduct properly the certification process<sup>11</sup>.

However, prior to the Assembly, the question of eliminating polio worldwide had also been raised at the International Poliomyelitis Conferences<sup>12</sup>. At the III conference (1954), John J. Paul, one of the most outstanding figures in polio research, presented a paper entitled “Future Prospects”, which was included in a wider session on “Trends in Poliomyelitis”. Given the hopeful early results achieved with polio vaccines, he was encouraged by the possibility of preventing the disease and, perhaps even of eliminating it. He insisted that this goal could not be accomplished by a single laboratory or a single country, but would require a joint effort<sup>13</sup>.

In similar terms, at the IV Conference (1957), the honorary president, the American Basil O’Connor, head of the National Foundation for Infantile Paralysis, was commissioned to draw up the conclusions. In this document, he also referred to the possibility of eliminating polio:

Since I know that you feel, as we of the United States feel, that the elimination of paralytic polio in one country only is not the goal that is sought, I repeat that there is a likelihood that we will have eliminated paralytic polio in the United States by 1958. That is not the goal of any science and should not be; that is not the goal of the International Congress. The goal should be the elimination of paralytic polio throughout the world<sup>14</sup>.

Two years later, in 1959, when polio vaccination campaigns had been implemented in several countries, Frank L. Horsfall, president of the scientific committee of the V Congress, was given the task of summarizing all those papers presented. In this case, although he also showed the advances in the control of polio, he did not mention ‘eradication’ but rather displayed a hopeful but still cautious attitude:

It seems no longer necessary to bolster optimism with uncritical hope. Means for the control of poliomyelitis appear to be at hand. What remains is to learn more of their vagaries and the best ways in which to use them. Once again, then, man has

---

11 Joseph Smith; Rose Leke; Anthony Adams; Rudolph H. Tangermann, “Certification of polio eradication: process and lessons learned”, *Bulletin World Health Organization*, 82(1) (2004), 24–29.

12 María-Isabel Porras; María-José Báguena; Rosa Ballester, “Spain and the scientific conferences on polio, 1940s–1960s”, *Dynamis*, 30 (2010), 91–118.

13 *Poliomyelitis, Papers and Discussions presented at the Third International Poliomyelitis Conference* (Philadelphia, 1955), p. 422.

14 *Poliomyelitis, Papers and Discussions presented at the Fourth International Poliomyelitis Conference* (Philadelphia, 1958), p. 665.

demonstrated his almost limitless capacity to manage hazards in his own environment<sup>15</sup>.

The European Association against Poliomyelitis, which was set up in 1951 in Brussels, concluded its IV Symposium of 1956 in similar terms considering that there was still necessary hardworking –both technically and theoretically– before getting the total elimination of the polio<sup>16</sup>. However, five years later, when the live vaccine was disposable, the eradication of the disease seemed to be possible:

It is thus argued that vaccination with the live vaccine, if practised on a wide scale... will not only bring about the complete eradication of poliomyelitis but also eliminate the causative viruses<sup>17</sup>.

The choice of poliomyelitis for global eradication was favoured by a series of biological circumstances such as the fact that poliovirus is transmitted only by infectious humans or their waste and the vector plays only a very limited role in contagion; the survival of poliovirus in the environment is finite; humans are the only reservoir of poliovirus and the oral vaccine interrupts poliovirus transmission. In addition to these biological circumstances, other fundamental factors included the social, economic, cultural and political perspectives of the problem, above all in the experience acquired in many countries through the mass vaccination campaigns<sup>18</sup>. An article published in the *Bulletin of the WHO*, one year before the official recognition by the General Assembly, showed clearly that “global eradication of poliomyelitis is inevitable: the only question is whether we will accomplish it or pass on the needed action to our successors”<sup>19</sup>. The possible impediments to eradication included the necessity to generate political and social will but it was considered “that with intensified effort and increased international collaboration, global eradication could be achieved as early as 1995”<sup>20</sup>.

Smallmann-Raynor et al. have stressed the role played by a global polio partnership comprising the WHO, Rotary International, Centers for Disease

---

15 *Poliomyelitis, Papers and Discussions presented at the Fifth International Poliomyelitis Conference* (Philadelphia, 1961), p. 426.

16 Association Européenne contre la Poliomyélite, *IV Symposium, Bologna, 20–22 September 1956* (Bruxelles, 1957), p. 44.

17 Association Européenne contre la Poliomyélite, *VII Symposium, Oxford, 17–20 September 1961* (Bruxelles, 1962), p. 155.

18 Ciro A. de Quadros, “The whole is greater: How polio was eradicated from the Western Hemisphere”. In: Daniel Perlman; Ananya Roy (ed.), *The Practice of International Health. A case-based orientation* (New York, 2009), pp. 54–69, p. 54–59.

19 Alan R. Hinman; William H. Foege; Ciro A. de Quadros; Peter A. Patriarca; Walter A. Orenstein; Edward W. Brink, “The case for global eradication of poliomyelitis”, *Bulletin of the World Health Organization*, 65 (1987), 839; cited by Smallmann-Raynor et al. op cit, p. 570.

20 Alan R. Hinman, op. cit, p. 835. cited by Smallmann-Raynor et al. op cit, p. 570.

Control (CDC) and UNICEF<sup>21</sup>. These institutions were, in turn, increasingly supported by a global network of humanitarian organizations, international agencies and private corporations<sup>22</sup>. Indeed, the social movement which developed around polio, unlike the case with other diseases, encouraged the raising of funds for other international health problems<sup>23</sup>.

In 1989 a Plan for global polio eradication by the year 2000 was drafted and a series of international meetings was held. The global eradication strategies pioneered by the Pan American Health Organization (PAHO) included high routine immunization cover, national immunization days (NIDs), acute flaccid paralysis surveillance and intensive “mopping-up” immunization campaigns used to interrupt the final chains of poliovirus transmission through vaccine administration on a house-to-house basis<sup>24</sup>.

Ten years after the launch of the eradication plan, the largest initiative ever undertaken, two international meetings in Dahlen (1997) and Atlanta (1998), were held to discuss and evaluate the eradication of the disease as a public health strategy. At these meetings, taking polio as an analysis model, various issues were discussed, such as whether the human and financial costs of these initiatives justified the concentration required to eradicate specific diseases. Three core questions were analysed:

1. Why eradicate polio (costs and benefits)?
2. Why is eradication technically feasible (biological determinants of eradicability)?
3. Why is this process socially and politically feasible?<sup>25</sup>

The responses were all positive. With regard to the first question, the arguments used included the magnitude of the humanitarian benefits, the economic costs of this type of disability, and the fact that vaccination campaigns had led also to improvements in the health services. On the second question, it was argued that oral disease vaccine was an effective weapon and that the implementation based on the National Immunization Days strategy had interrupted poliovirus transmission even in areas with low routine immunization cover. The availability and safety of

---

21 Matthew R. Smallmann-Raynor, op. cit, pp. 571–572.

22 The Melinda and Bill Gates Foundation also joined the cause in 2000.

23 Theodore M. Brown, Marcos Cueto, Elisabeth Fee, *Historia, salud y globalización*. (Lima, 2013), p. 98–99.

24 Miguel Mosquera, Natalia Barón, Rosa Ballester, “El camino hacia la erradicación de la poliomiélitis a través de la Organización Panamericana de la Salud”, *Rev. Panam. Salud pública*, 36 (3) (2014), 185–192.

25 R. Bruce Aylward; Harry F. Hull; Stephen L. Cochi et al., “Disease eradication as a public health strategy: a case study of poliomyelitis eradication”, *Bulletin of the World Health Organization*, 78(3) (2000), 285–297.

polio vaccines were much improved with the introduction of culture in continuous cell lines (Vero cells) by the Mérieux Institute of Lyon<sup>26</sup>. Furthermore, it had been found that culturing viruses from stool samples from cases of acute flaccid paralysis was a sensitive and specific tool for diagnosis.

The answer to the third question was more complicated because, unlike the objectivity and universality of the arguments used in the previous two, the issue depended on local circumstances. The development and maintenance of a social and political commitment were considered essential for this feasibility from an operational point of view. Furthermore, the implementation of this commitment made it necessary to test the eradication strategy in a large geographical area (the example given was that of the Region of the Americas, the first to receive the official certificate in 1994).

In short, eradication would help to combat inequity and would favour social justice. If these principles were supported by humanitarian, economic and other benefits, there would be significant reasons to consider the eradication of poliomyelitis as a valuable public health strategy.

## The European Programme for the Eradication of Poliomyelitis

The general principles began to take shape in the different regions into which the WHO was divided. As far as the European Region was concerned<sup>27</sup>, the seventh meeting of the European Group of the Expanded Programme on Immunization<sup>28</sup> reviewed the general and specific aims of the programme and determined that by 2000, or as soon as possible, indigenous poliomyelitis, caused by the wild-type poliovirus, should be eradicated from the Region.

The *Global Commission for the Certification of the Eradication of Poliomyelitis* (GCC), was set up in 1995 to supervise, at a global level, activities carried out in this field, including such conceptual aspects as the definition itself of eradication adapted to the case of polio:

---

26 Bernard Seytre; Mary Shaffer, *Histoire de la poliomyélite* (Paris, 2004), pp. 103–110; Samuel L. Katz; Catherine M. Wilfert; Frederick C. Robbins, “The Role of Tissue Culture in Vaccine Development”, in S.A. Plotkin, ed., *History of Vaccine Development* (New York, 2011), pp. 145–148; Florian Horaud, “Viral Vaccines and Cell Substrate: A 'Historical' Debate”, in S.A. Plotkin, ed., *History of Vaccine Development* (New York, 2011), pp. 151–154.

27 Aurora Limia-Sánchez, “La erradicación de la poliomiélitis en la Región Europea de la Organización Mundial de la Salud”, *Revista Española de Salud pública*, 87 (2013), 507–516.

28 The Expanded Programme on Immunization (EPI), was set up in 1979, under the auspices of the WHO and the PAHO, in order to achieve universal vaccination designed to reduce mortality and morbidity through immune prevention and to control, eliminate and eradicate such diseases.

The Worldwide Eradication of Poliomyelitis means the eradication of all wild-type viruses. The existence of clinical cases of poliomyelitis caused by other enteroviruses, including attenuated viruses from anti-polio vaccines, does not invalidate the eradication of wild-type polioviruses<sup>29</sup>.

A second fundamental aspect was to endorse global criteria for the certification of an area as free from polio. There were two main types of criteria:

- Absence of wild-type virus –isolated from clinical cases of flaccid paralysis suspected of having being caused by polio, both from healthy individuals and environmental samples– for a minimum period of three years within a system of proper epidemiological vigilance.
- The effective control of all stocks of polio virus in accredited laboratories<sup>30</sup>.

The *Global Commission for the Certification of the Eradication of Poliomyelitis* (GCC) gave rise to the *Regional Certification Commissions* (RCCs) which, in the case of the European Region, began work in 1996. The Commission, which sought to adapt the general norms to the European reality, met periodically and produced a series of reports<sup>31</sup>. In order to coordinate national strategies and in the interests of greater effectiveness, the presidents of the national committees for the certification of eradication of the disease also held regular meetings from 1997 onwards<sup>32</sup>. As had previously occurred in other regions (Americas 1994; Western Pacific 2000), the official certification in the European Region took place at a solemn ceremony on 21 June 2002 at the European headquarters of the WHO in Copenhagen<sup>33</sup>. The last case of wild-type polio in the 55 countries of the Region had been reported in Turkey in November 1998.

The main Spanish newspapers reported the achievement: *ABC* of 22 June 2002, under the headline “Polio officially eradicated from Europe after years of mass vaccinations” (p. 60), and the Barcelona newspaper *La Vanguardia*, six months after certification, used the event to introduce the subject of polio in the World and the work carried out to date. Under the heading “Victory over polio” and the sub-heading “Five years of solidarity”, the Sunday magazine of 22nd December 2002 described activities in India, Sudan, Somalia and the Republic of the Congo in

---

29 *Report of the 1st meeting of the Global Commission for the certification of the Eradication of Poliomyelitis* (Geneva, 1995). WU WHO/EPI/GEN95.6 document WHO.

30 *Ibidem*.

31 World Health Organization, *Report of the first meeting of the European Regional Commission for the certification of polio eradication. Paris, 7–8 march 1996* (Geneva, 1996).

32 World Health Organization, *Certification of Poliomyelitis Eradication in the European Region. Report on a WHO Meeting. Vienna, 16–17 December 1997* (Copenhagen, 1998).

33 “Certification of poliomyelitis eradication -European Region”, *MMWR Morbidity and Mortality Weekly Report*, 51 (2002), 572–574.



order to encourage funding for the work that remained to be done (*La Vanguardia*, 22-12-2002). The dailies recalled the eradication of the disease in the region of the Americas in 1994 and insisted on the importance of the WHO target of worldwide eradication by 2005. *ABC* used the good news to remind readers that the last outbreaks in Spain had occurred in Andalucía in the years 1987–88 and that thereafter the few cases reported in the 1990s had been vaccine-linked (p. 60). Just over a month later and under the headline “Health Ministry estimates 36,000 possible cases of post-polio syndrome”, *El País* reported on another important problem arising from the polio epidemics which had occurred during the Francoist period and which to that date had failed to receive the response it required (*El País*, 30-7-2002).

The Barcelona daily, *La Vanguardia*, gave greater coverage to the contribution of Rotary International in the eradication of poliomyelitis (*La Vanguardia*, 27-6-2002, p. 30). Six months after certification, the newspaper used the victory over polio in Europe to intensify its campaign to expose the continuing presence of polio in other parts of the World and to describe the work carried out to achieve its eradication. The newspaper made a call for solidarity in the provision of resources to achieve the worldwide elimination of the disease (*La Vanguardia*, 22-12-2002).

In the years since the eradication of poliomyelitis in Europe, the Spanish press has continued to publish reports of the work that is still being done to achieve the worldwide elimination of the problem, of the difficulties and setbacks that must be overcome, of the reappearance of the disease in some countries where it had been eradicated, and also of the WHO’s enduring commitment to this objective.

## The Process of Eradication in Spain (1988–2002)

The Spanish state, within a democratic political and social framework very different to that of the epidemic outbreaks of the mid-twentieth century, had no difficulty in adhering to the strategies developed by the other European countries. The death of the dictator in 1975, the creation of the Ministry of Health and Consumer Affairs in 1977 and the ratification of the Spanish Constitution of 1978 were followed by the General Health Law of 1986 which set out the fundamental guidelines for our health and public health systems<sup>34</sup> organized around the Autonomous Communities into which Spain was now divided (the new design of the Spanish state established by the Constitution of 1978).

The victory of the *Partido Socialista* in the 1982 elections brought the consolidation of democracy and the conclusion of the transition that had followed

---

34 The 1986 Law established universal health care cover in Spain.

the death of Franco. The relationships of the president of the government, Felipe González, with the great statesmen of the European democratic left explain, to a certain extent, the influence of social democracy in the health policies developed in Spain. This approach led Spain to become an irrevocable part of the western world. The most significant event took place in 1985 when Spain joined the European Union; a transcendental step in the country's economic development, which produced an increase in social and research spending, which in turn led to the establishment of a welfare state.

It is important to underline the fact that the two fundamental aspects of the health reform (decentralization and the implementation of a primary health care system) were the result of a determination to reinforce Public Health. In the early years of the government of the conservative *Partido Popular*, following their victory in 1996, there were no substantial changes in health policy.

In this context, between 1988 (the last reported case of polio in Spain) and 2002, the country, together with the other members of the European region of the WHO, enjoyed appropriate conditions for the eradication of poliomyelitis. However, the process was not devoid of problems and although in 1988 polio was a controlled disease; the certification of eradication was delayed until the results were guaranteed in 2002<sup>35</sup>.

### *The Figures*

The situation in Spain in terms of the number of notified cases of poliomyelitis in 1988 showed a sharp fall in the number of affected people since the introduction of the first mass anti-polio immunization campaign of 1963–1964 with oral vaccine. From the 1500 cases per year in 1950 and the more than 2000 cases in 1959, the figure had dropped to below 100 in 1964 and 1965<sup>36</sup>. However, this decrease was not maintained in the subsequent years. The process was one of problems and setbacks which, while disclosed by the health professionals, were not always sufficiently divulged by the health authorities<sup>37</sup>. As we shown in another paper, in which we analyzed the annual polio morbidity distribution in all provincial capitals and provinces in Spain<sup>38</sup> between 1965 and 1975, this disease persisted as a public

---

35 Information done by Ferrán Martínez-Navarro and Andreu Segura.

36 María-José Báguena; María-Isabel Porras; Rosa Ballester, “Poliomyelitis in rural and urban Spain: epidemiological trends, social and scientific responses”, in A. Andresen; J. L. Barona and S. Cherry, eds, *Making a new Countryside* (Frankfurt, 2010), pp. 113–132.

37 Enrique Nájera et al., “Análisis epidemiológico de la situación actual de la poliomiélitis en España”, *Revista de Sanidad e Higiene Pública*, 49 (1975), 953–1025.

38 The only breakdown possible of the morbidity data provided by the *Instituto Nacional de Estadística (INE)*.

health problem throughout this ten-year period<sup>39</sup>. Indeed the situation deteriorated; in 1965 there were ten provincial capitals with above zero morbidity, in 1975 there were twenty. Apart from Madrid and Barcelona (the two Spanish cities with the highest population), Almería was the provincial capital with the highest rates. Our study has also confirmed that the problem was most severe in the south of Spain, both in the provincial capitals and the rest of the provincial areas, although there were some differences between the two. Indeed, the capitals with the most years among the five reporting the highest rates of morbidity were: Almería (7 years), Huelva (5 years), Granada (4 years), Badajoz, Córdoba, Las Palmas and Santander (3 years). The provinces that recorded the highest rate in the most number of years were: Las Palmas (7 years), Cádiz and Sevilla (6 years), Almería (5 years), Granada and Barcelona (4 years) and Murcia (3 years). We see that Almería (7 and 5 years), Las Palmas (3 and 7 years) and Granada (4 and 4 years), which belong to the south of the peninsula and the southern Canary Island archipelago, coincide in both sections and have the highest polio morbidity rates. The situation was more serious in Andalucía than in other autonomous communities<sup>40</sup>, especially in the provinces of Seville – as the ABC and El País newspapers of the late 1970s and early 1980s reported – and Almería<sup>41</sup>.

Leaving aside for the moment the reasons behind this situation, which differs from that of other European countries at the time of the death of Franco, we must ask ourselves to what extent the situation would change in the following years. An analysis of the development of the higher and lower morbidity rates in the provincial capitals (table 1) and in the rest of the province (table 2) between 1976 and 1988 shows that polio remained a problem in most southern capitals and provinces, except in Seville, where in 1972, the authorities had implemented the *First Pilot Program of Home Vaccination* which, in the six years that it lasted,

---

39 María-Isabel Porras; María-José Báguena, “El conocimiento sobre la realidad de las campañas de vacunación contra la polio, su cobertura, su seguimiento, la percepción de la población sobre su eficacia y/o peligrosidad y el reflejo en la prensa diaria (1963–1975)”, at the Conference: *Política, salud y enfermedad en España: entre el desarrollismo y la transición*. Alicante, December 12–13, 2013.

40 Valenciano, Mezquita, Pérez Gallardo and Gabriel y Galán showed in 1969 the unequal distribution of the poliomyelitis morbidity rates between the North and the South of Spain: Luis Valenciano; Manuel Mezquita; Florencio Pérez Gallardo; Jesús Gabriel y Galán, “Estudio epidemiológico y virológico de la poliomiélitis en España durante el quinquenio 1964–1968”, *Revista de Sanidad e Higiene Pública*, 43 (1969), 517–564.

41 Porras and Báguena has recently confirmed, this situation as well as the high morbidity rates of Almería: María-Isabel Porras; María-José Báguena, “El conocimiento sobre la realidad de las campañas de vacunación contra la polio, su cobertura, su seguimiento, la percepción de la población sobre su eficacia y/o peligrosidad y el reflejo en la prensa diaria (1963–1975)”, in Conference: *Política, salud y enfermedad en España: entre el desarrollismo y la transición*. Alicante, December 12–13, 2013.

achieved a significant reduction in the number of cases; in 1977 not a single case was reported in the province of Sevilla<sup>42</sup>.

**Table 1.** Polio morbidity rates (per 100,000 inhabitants) by capital (1976–1988)

Capital	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Almería	-	-	19.21	-	-	-	ND	ND	-	-	ND	ND	ND
Bilbao	-	-	-	-	-	0.23	ND	ND	-	-	ND	ND	ND
Cádiz	1.47	0.73	0.73	-	-	-	ND	ND	-	-	ND	ND	ND
Coruña, La	-	-	-	-	-	-	ND	ND	-	-	ND	ND	ND
Granada	1.57	0.52	2.62	1.05	-	-	ND	ND	-	-	ND	ND	ND
Huelva	1.03	-	-	-	-	1.03	ND	ND	-	-	ND	ND	ND
Lugo	-	-	-	-	-	-	ND	ND	-	-	ND	ND	ND
Málaga	0.53	-	0.80	-	-	-	ND	ND	-	-	ND	ND	ND
Oviedo	-	-	-	-	-	0.52	ND	ND	-	-	ND	ND	ND
Palmas de G. C., Las	-	-	0.34	0.34	-	-	ND	ND	-	0.27	ND	ND	ND
Pamplona	-	-	-	-	0.54	-	ND	ND	-	-	ND	ND	ND
Pontevedra	-	-	-	-	-	-	ND	ND	-	-	ND	ND	ND
San Sebastián	0.60	-	-	-	-	-	ND	ND	-	-	ND	ND	ND
Santander	-	-	-	-	-	-	ND	ND	-	-	ND	ND	ND
Sevilla	0.18	-	0.18	-	-	-	ND	ND	-	-	ND	ND	ND
Vitoria	-	-	-	-	-	-	ND	ND	-	-	ND	ND	ND

**Source:** *Instituto Nacional de Estadística* (INE). By the authors. Southern capitals in bold letters (ND: no data).

Although, in the following years, the morbidity rate did not remain at zero, it was still better than in Almería, Granada or Cádiz (tables 1 and 2). The examples that we have chosen from the North of Spain show that in those regions, polio had ceased to be a problem in the years of the so-called “*transición democrática*”. The last two cases in Spain were reported in 1988; one imported from Mauritania and the other post-vacunal<sup>43</sup>.

Without seeking to provide a comprehensive analysis, but rather to clarify what follows, we should outline the main factors that appear to explain the persistence of polio in Spain: a failure to achieve total immunization of children under seven in the 1963–64 national campaign with oral vaccine and a similar failure with children under 12 months in subsequent years; the fact that two doses proved insufficient to achieve complete immunity among the population vaccinated; the particular importance of the type 1 virus (linked to the paralytic form of the disease) in Spain; the lack of resources and the shortcomings in health management in the vaccination programs; bureaucratic hindrance, as revealed in the case of Seville;

42 M. Jiménez, “La polio no ha desaparecido”, *ABC*, 05/06/1981, p. 28.

43 Instituto de Salud Carlos III, “Plan de actuaciones necesarias para la consecución del Certificado de Erradicación de la Poliomiélitis”, *Boletín epidemiológico semanal*, 5(13) (1997), 126–128, p. 126.

restrictions in the support role of the mass media due to lack of public funding from the Francoist state, which after 1965 led to the virtual disappearance of polio from the pages of those daily newspapers we have consulted; breakdowns in the cold chain, a concern of Sabin<sup>44</sup> which appears to have been confirmed by the national study performed in 1988–89<sup>45</sup>; and the lack of urgency in the organization of the first competent laboratory of virology for the confirmation of polio diagnoses and even more so in establishing a network of specialized laboratories<sup>46</sup>.

**Table 2.** Morbidity rates (per 100,000 inhabitants) for polio in the rest of the province (1976–1988)

Resto provincia	1976	1977	1978	1979	1980	1981	1982*	1983*	1984**	1985	1986*	1987*	1988*
Álava	-	-	-	-	-	-	-	-	ND	-	-	-	-
Almería	-	-	3.83	-	-	-	0.37	1.13	ND	0.37	-	1.13	1.13
Asturias	-	0.11	-	-	-	-	-	-	ND	-	-	-	-
Cádiz	0.13	0.66	0.13	-	-	-	-	0.11	ND	-	-	-	-
Cantabria	0.31	-	-	0.31	-	-	-	-	ND	-	-	-	-
Coruña, La	-	-	-	-	-	-	0.23	-	ND	-	-	-	-
Granada	0.36	0.55	0.92	0.73	-	-	-	0.20	ND	-	-	-	-
Guipúzcoa	0.21	0.21	-	-	-	-	-	-	ND	-	-	-	-
Huelva	-	-	0.66	0.33	-	-	-	0.69	ND	-	-	-	-
Lugo	-	-	-	-	-	-	-	-	ND	-	-	-	-
Málaga	0.40	0.20	0.60	-	0.18	-	-	0.18	ND	-	-	0.37	-
Navarra	-	-	-	-	-	-	-	-	ND	-	-	-	-
Palmas, Las	1.36	0.34	0.34	-	-	-	0.25	0.25	ND	-	-	-	-
Pontevedra	0.57	-	0.28	-	-	0.12	-	-	ND	-	-	-	-
Sevilla	-	-	-	0.45	0.12	0.12	-	0.12	ND	-	-	-	-
Vizcaya	-	0.15	-	-	-	0.26	-	-	ND	-	-	-	-

**Source:** Instituto Nacional de Estadística (INE). By the authors. (ND: no data)

\*There is no breakdown of the data for capitals for 1982, 1983, 1986, 1987 and 1988, and therefore it is not possible to know if the data for cases per province include cases in provincial capitals.

\*\*According to national morbidity data for 1984, there was one case of polio. As there were no cases in provincial capitals, it must have occurred in one of the provinces. However we do not have a breakdown per province.

44 Albert Sabin expressed his concern in a letter to Florencio Pérez Gallardo: <http://hdl.handle.net/2374.uc/670052>. The personal files of Albert Sabin are available at: <http://digitalprojects.libraries.uc.edu/sabin/>

45 José Tuells et al., “El primer ensayo de campo sobre cadena de frío vacunal en España (Alicante, 1986–88)”, *Vacunas*, 2 (2009), 42–48; José Tuells, “El frágil inicio de la cadena de frío vacunal en España”, *Gaceta Sanitaria*, 4 (4) (2010), 354–357.

46 María-Isabel Porras; María-José Báguena, “El conocimiento sobre la realidad de las campañas de vacunación contra la polio, su cobertura, su seguimiento, la percepción de la población sobre su eficacia y/o peligrosidad y el reflejo en la prensa diaria (1963–1975)”, in Conference: *Política, salud y enfermedad en España: entre el desarrollismo y la transición*. Alicante, December 12–13, 2013.

Regarding this last factor, some changes did take place in the early years of the “*transición democrática*”, which took advantage of some of the improvements achieved during the dictatorship with the support of international organizations (WHO, Rockefeller Foundation). Rafael Nájera took over the leadership of the National Centre of Microbiology, Virology and Immunology of the Carlos III Institute of Health. The first goal of his team, with an excellent scientific tradition in spite of the political circumstances of Francoism<sup>47</sup>, was the eradication of polio through the introduction of the criteria of the WHO classification and characterization studies of polioviruses<sup>48</sup>. The anti-polio vaccination rate had passed the 80% mark and subsequently reached 91% in 1996 (this was even thought to be below the actual figure as it did not include immunizations performed outside the public sector)<sup>49</sup>. Furthermore, as we shall describe below, with the formal application of a specific programme for Spain, the authorities began use of the CMBD database (Conjunto Mínimo Básico de Datos – Basic Minimum Data Set), introduced into the Spanish Health System in 1987, as a complementary source of data to follow up cases of acute flaccid paralysis (AFP)<sup>50</sup>. In 1995, the number of cases of AFP reported by the CMBD in the Spanish state among the under-15s was 66, a rate of between 1.2 and 1.6 cases per 100,000 inhabitants. None of these cases finally proved to be polio.

### *Implementation of the Poliomyelitis Eradication Plan in Spain*

The report drafted at the first meeting of the *Global Commission for the Certification of the Eradication of Poliomyelitis* (GCC), mentioned above, was swiftly transmitted by the Ministry of Health and Consumer Affairs to the Autonomous Communities, which now held political responsibility for health. It is important to point out that this was the situation of a third of the Spanish Autonomous Communities in 1996. The rest of them had only political responsibility for public health and get for medical care some years later. The Autonomous Communities were asked to study

---

47 María-Isabel Porras; Mariano Ayarzagüena; Jaime de las Heras; María-José Báguena, eds., *El drama de la polio. Un problema social y familiar en la España franquista* (Madrid, 2013).

48 Rafael Nájera, “La última fase: la eliminación”, *Revista española de Salud Pública*, 87 (2013), 461–469.

49 Instituto de Salud Carlos III, “Plan de actuaciones necesarias para la consecución del Certificado de Erradicación de la Poliomieltitis”, *Boletín epidemiológico semanal*, 5 (13) (1997), 126–128, p. 126.

50 The Flaccid Paralysis Syndrome (AFP) is characterized by a rapid muscular weakening in the lower limbs and, on occasions, in the respiratory muscles. It is essentially a disease of infancy. Its interest for polio surveillance is that this syndrome can be caused by polio.

the viability of the implementation of a Poliomyelitis Eradication Plan in Spain<sup>51</sup>, and an analysis was made of the strategies recommended by the WHO for the eradication of poliomyelitis in the European Region, based on the conclusions of the first meeting of the European Regional Commission for the Certification of the Eradication of Poliomyelitis<sup>52</sup>.

The organization of the Plan had a central structure, in which the Autonomous Communities participated in epidemiological surveillance and the monitoring of hypothetical cases. Nonetheless, poliomyelitis came to be seen as an increasingly distant threat. The Autonomous Communities and the Ministry maintained both technical relations (through the Epidemiological Surveillance Groups) and political contacts (through the Public Health Commissions). The highest level of political representation within the state of the autonomies on this and other questions was, and still is, the *Consejo Interterritorial del Sistema Nacional de Salud* (Interterritorial Council of the National Health System).

The first decision adopted at state level was the constitution, in 1996, of a *Working Group of the Poliomyelitis Eradication Plan (GT-PEP)* made up of representatives of the Ministry of Health and Consumer Affairs (General Board of Public Health, the Carlos III Health Institute and the National Institute of Health) as well as representatives of scientific societies (Epidemiology, Neurology, Pediatrics and Virology). Representatives of the Poliomyelitis Eradication Plan in the Autonomous Communities were subsequently appointed and a coordination meeting was held between them and the GT-PEP which approved a timetable for the process of certification of the eradication of poliomyelitis in Spain<sup>53</sup>. The schedule covered the period between 1996 and 2000, and set milestones ranging from the introduction of a system of epidemiological surveillance of flaccid paralysis to the presentation of the final report of the GT-PEP to the National Committee in 2000.

The creation of a National Committee of Experts for the attainment of the Certificate of Eradication of Poliomyelitis in Spain, in 1997, represented the last of the bases required for the Plan to reach its goal<sup>54</sup>. Recourse to experts was not a

---

51 Rafael Nájera, “Intentos y dificultades en la erradicación de la poliomiélitis”, in R. Nájera, coord., *Erradicación y control de las enfermedades producidas por virus* (Madrid, 2012), pp. 433–464.

52 *Report of the 1st meeting of the Global Commission for the certification of the Eradication of Poliomyelitis* (Geneva, 1995). WU WHO/EPI/GEN95.6 document WHO.

53 Instituto de Salud Carlos III, “Plan de actuaciones necesarias para la consecución del Certificado de Erradicación de la Poliomiélitis”, *Boletín epidemiológico semanal*, 5(13) (1997), 126–128.

54 Ministerio de Sanidad y Consumo. Instituto de Salud Carlos III. *Plan de actuaciones necesarias para la consecución del certificado de erradicación de la poliomiélitis*. (Madrid, 1988). Ferrán Martínez -Navarro, “La Comisión Nacional para la certificación de la erradicación de la

compulsory criterion of the WHO, although it was an important recommendation and a feature of the organization's working methods, as we have described in other studies<sup>55</sup>. This purely technical level, together with the political and administrative structures, was important from the point of view of the programme because among the recommendations of the WHO was the suggestion that this type of committee should include eminent professionals who were not directly involved in the measures to eradicate poliomyelitis. We should add that a review of the names of those who made up this Committee<sup>56</sup>, shows that the experts, whose chairman was Ferrán Martínez Navarro – a highly experienced epidemiologist and renowned professional who had attended some of the European meetings mentioned above – provided guarantees that things should be done according to the guidelines. One of the spokespersons, the virologist and epidemiologist Rafael Nájera Morrondo, cited above, had been a member of the Florencio Pérez Gallardo's<sup>57</sup> working group of the National School of Health during the implementation of the first mass immunization campaigns.

The results achieved in the preliminary work led to the adoption of a series of decisions which took shape in a Proposal setting out the required measures to obtain the certificate of eradication of poliomyelitis in Spain. In brief:

- to set up an efficient service to monitor acute flaccid paralysis;
- to achieve and maintain high levels of immunization cover;

---

poliomielitis” in Juan A. Rodríguez-Sánchez, Jesús Seco-Calvo, eds. *La poliomiélitis en Castilla y León. Vacunación, erradicación y efectos tardíos* (León, 2015, in press).

55 María-Isabel Porras; Rosa Ballester; María-José Báguena; Jaime delas Heras, “La Asociación Europea frente a la Polio y los programas europeos de vacunación”, *Dynamis*, 32(2) (2012), 287–310; Rosa Ballester; María-Isabel Porras; María-José Báguena, “La respuesta de las agencias internacionales (NFIP, OMS, AEP) al problema de la poliomiélitis” in M.I. Porras; M. Ayarzagüena; J. de las Heras; M.J. Báguena, eds., *El drama de la polio. Un problema social y familiar en la España franquista* (Madrid, 2013); María-Isabel Porras; María-José Báguena; Rosa Ballester, “Spain and the international scientific conferences on polio, 1940s–1960s”, *Dynamis*, 30 (2010), 91–118.

56 The composition was the following: President: Ferrán Martínez-Navarro, Chief of the Epidemiological Surveillance Area of the Instituto de Salud Carlos III of the Ministry of Health. Spokespersons: Two professors of Pediatrics and Neurology (Manuel Moya Benavent and Alberto Portera Sánchez), the President of the Health Advisory Council (José-María Segovia de Arana), the Chief of the Retrovirus Area of the National Center of Fundamental Biology of Majadahonda (Rafael Nájera-Morrondo), the Chief of the Biological Products Area of the IS Carlos III, Francisco Salmerón-García and two technicians from INSALUD and the National School of Health.

57 Florencio Pérez Gallardo was a prominent Spanish scientist who took part of the European Association against Poliomyelitis on behalf of the World Health Organisation. María-Isabel Porras; María-José Báguena; Rosa Ballester, “Spain and the scientific conferences on polio, 1940s–1960s”, *Dynamis*, 30 (2010), 113–119.



- to implement a system of environmental surveillance to detect wild polioviruses in individual and environmental samples and
- to carry out a seroepidemiological study to assess the immunity of the population.

The first three objectives responded point by point to the instructions of the WHO. The fourth was a supplementary measure which we have described in other studies<sup>58</sup> and which the Committee was able to include in the Project following the introduction in 1996 of a national seroepidemiological macro study, which was carried out in the Autonomous Communities and in the towns of Ceuta and Melilla in order to determine the serological profile of the population between 2 and 40 years of age in relation to such specific infectious agents as polioviruses 1, 2 and 3<sup>59</sup>.

As we can see, the implementation of these systems in the National Epidemiological Surveillance Network were key to the work programme and of the specific measures of the network, which ranged from how to detect suspected cases to the arrangements for the laboratory which would deal with the stool samples and the most suitable laboratory techniques for the processing of suspected cases of acute flaccid paralysis. The weekly dispatch of this information to the European Regional Office of the WHO and the drafting of annual reports signalled the path towards the finishing line.

Nevertheless, from the outset, the monitoring system for acute flaccid paralysis in Spain suffered from low sensitivity and low reporting. The level of notified incidence in Spain was below the 2000 WHO estimate<sup>60</sup> of one case per 100,000 inhabitants. The reasons for this appear to be the absence of polio cases and the association between AFP and other conditions such as Guillain-Barré syndrome. Indeed, an active search for AFP in the National Minimum Dataset (a national collection of public and private hospital discharge information, including coded clinical data for inpatients and day patients) does provide a rate similar to the figure estimated by the WHO in most autonomous communities. This situation, and the

---

58 María-Isabel Porras; Rosa Ballester, “El significado histórico de las encuestas de seroprevalencia como tecnología de laboratorio aplicada a las campañas de inmunización. El caso de la poliomielitis en España”, *Asclepio*, 61(1) (2009), 55–80.

59 Instituto de Salud Carlos III, “Plan de actuaciones necesarias para la consecución del Certificado de Erradicación de la Poliomielitis”, *Boletín epidemiológico semanal*, 5(13) (1997), 128.

60 Isabel Pachón del Amo; C. Sanz Ortiz; B. Merino Merino, “Sistema de vigilancia de parálisis flácida aguda (PFA): descripción de los primeros casos notificados”, *Boletín epidemiológico semanal*, 5(31) (1997), 289–292. Isabel Pachón del Amo; M. C. Sanz Ortiz, “Certificación de la erradicación de la poliomielitis. Sistema de vigilancia de parálisis flácida aguda”, *Boletín epidemiológico semanal*, 7(18) (1999), 189–192. Isabel Pachón del Amo; M. C. Sanz Ortiz, “Certificación de la erradicación de la poliomielitis. Sistema de Vigilancia de Parálisis Flácida Aguda. Año 2000”, *Boletín epidemiológico semanal*, 9(8) (2001), 77–81.

fact that other western European countries (France and Great Britain) have ceased surveillance and instead have opted for environmental monitoring, have led the epidemiologist Ferrán Martínez Navarro to put forward a proposal to follow the example of these countries and to reinforce Spain's response capability in the eventuality of imported cases of polio.<sup>61</sup>

## Concluding Remarks

Throughout the paper we have shown how the programme for the eradication of polio in Spain was organized on the basis of the decision of the WHO in 1988. Although morbidity had already been reduced by that time, following the great efforts made during the 1960s, the measures taken to achieve certification contributed to the modernization of our system and the establishment of a national epidemiological surveillance network for polio which might be transferable to other infectious diseases. Indeed, polio vaccination represented the starting point for the establishment of vaccination calendars in Spain from 1975 onwards.

The results of the case study allow us to delve into the process by which an international health programme was implemented at a local level, its positive aspects and the difficulties that arose.

*Rosa Ballester* is professor of History of Science at the Department of Public Health and History of Science, Miguel Hernández University, Spain.

*María-Isabel Porras* is professor of History of Science at the Medical Faculty of Ciudad Real, University of Castilla-La Mancha, Spain.

*María José Baguena* is professor of History of Science at the Institute for the History of Medicine and Science, University of Valencia, Spain

---

<sup>61</sup> Ferrán Martínez-Navarro, "La Comisión Nacional para la certificación de la erradicación de la poliomielitis" in Juan A. Rodríguez-Sánchez, Jesús Seco-Calvo, eds. *La poliomielitis en Castilla y León. Vacunación, erradicación y efectos tardíos* (León, 2015, in press).

## References

- Association Européenne contre la Poliomyélite, *IV Symposium, Bologna, 20–22 September 1956*. (Bruxelles, 1957).
- Association Européenne contre la Poliomyélite, *VII Symposium. Oxford, 17–20 September 1961*. (Bruxelles, 1962).
- Aylward, Bruce, Harry F. Hull; Stephen L. Cochi et al., “Disease eradication as a public health strategy: a case study of poliomyelitis eradication,” *Bulletin of the World Health Organization* 78:3 (2000), 285–297.
- Báguena, María-José, Porrás, María-Isabel, Ballester, Rosa, “Poliomyelitis in rural and urban Spain: epidemiological trends, social and scientific responses,” pp. 113–132 in A. Andresen, J. L. Barona and S. Cherry, eds., *Making a new Countryside*, (Frankfurt, 2010).
- Ballester, Rosa, María-Isabel Porrás, “El significado histórico de las encuestas de seroprevalencia como tecnología de laboratorio aplicada a las campañas de inmunización. El caso de la poliomielitis en España,” *Asclepio* 61(1) (2009), 55–80.
- Ballester, Rosa, María-Isabel Porrás; María-José Báguena, “La respuesta de las agencias internacionales (NFIP, OMS, AEP) al problema de la poliomielitis” pp.73–93 in M.I. Porrás; M. Ayarzagüena; J. de las Heras; M.J. Báguena, eds, *El drama de la polio. Un problema social y familiar en la España franquista*. (Madrid, 2013).
- Bazin, Hervé *The Eradication of Smallpox*. (San Diego, 2000).
- Brown, Theodore M.; Marcos Cueto, Elisabeth Fee. *Historia, salud y globalización*. (Lima, 2013).
- “Certification of poliomyelitis eradication: European Region,” *Morbidity and Mortality Weekly Report* 51 (2002), 572–574.
- Chin, James “Can paralytic poliomyelitis be eliminated?,” *Clinical Infectious Diseases* 6 (Suppl. 2) (1984), S581– S585.
- Cueto, Marcos *The value of health. A history of the Pan American Health Organization*. (Washington, 2007).
- De Quadros, Ciro A., “The whole is greater: How polio was eradicated from the Western Hemisphere,” pp. 54–69 in Daniel Perlman and Ananya Roy, eds, *The Practice of International Health. A case-based orientation*. (New York, 2009).
- Fenner, Frank “The eradication of infectious diseases,” *South African Medical Journal* 66 (suppl.) (1986), 35–39.
- Fenner, Frank, Donald Henderson. Isao Arita, Zdenek Jezek, Ivan Danilovich Ladnyi, *Smallpox and its Eradication*. (Geneva, 1988).

- Henderson, Donald, "Smallpox eradication: a victory against the Cold War," *World Health Forum* 19 (1998), 115–121.
- Hinman, Alan R, William H. Foege, Ciro A. de Quadros, Peter A. Patriarca, Walter A. Orenstein and Edward W. Brink, "The case for global eradication of poliomyelitis," *Bulletin of the World Health Organization* 65 (1987), 839.
- Horaud, Florian, "Viral Vaccines and Cell Substrate: A 'Historical' Debate," pp. 151–154 in S.A. Plotkin, ed., *History of Vaccine Development*. New York, 2011.
- Hortsman, Dorothy M., "Preface," *Reviews of Infectious Diseases*, 6 (Suppl. 2) (1984), S301.
- Instituto de Salud Carlos III, "Plan de actuaciones necesarias para la consecución del Certificado de Erradicación de la Poliomielitis", *Boletín epidemiológico semanal* 5:13 (1997), 126–128.
- Jiménez, M., "La polio no ha desaparecido", *ABC*, 05/06/1981, p. 28.
- Katz, Samuel L., Catherine M. Wilfert and Frederick C. Robbins, "The Role of Tissue Culture in Vaccine Development," pp. 145–148 in S.A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).
- Limia-Sánchez, Aurora, "La erradicación de la poliomielitis en la Región Europea de la Organización Mundial de la Salud", *Revista Española de Salud pública* 87 (2013), 507–516.
- Martínez-Navarro, Ferrán, "La Comisión Nacional para la certificación de la erradicación de la poliomielitis" in Juan A. Rodríguez-Sánchez, Jesús Seco-Calvo, eds. *La poliomielitis en Castilla y León. Vacunación, erradicación y efectos tardíos*. (León, 2015 (in press)).
- Ministerio de Sanidad y Consumo. Instituto de Salud Carlos III. *Plan de actuaciones necesarias para la consecución del certificado de erradicación de la poliomielitis*. (Madrid, 1988).
- Mosquera, Miguel, Natalia Barón, Rosa Ballester, "El camino hacia la erradicación de la poliomielitis a través de la Organización Panamericana de la Salud", *Revista Panamericana de Salud pública* 36(3) (2014), 185–192.
- Nájera, Enrique, Ángel Llácer, Luis Valenciano, E. Salmerón, Ferrán Martínez-Navarro, Manuel Mezquita, Florencio Pérez-Gallardo, "Análisis epidemiológico de la situación actual de la poliomielitis en España," *Revista de Sanidad e Higiene Pública* 49 (1975), 953–1025.
- Nájera, Rafael, "La última fase: la eliminación," *Revista española de Salud Pública* 87 (2013), 461–469.
- Nájera, Rafael, "Intentos y dificultades en la erradicación de la poliomielitis", pp. 433–464 in R. Nájera, coord., *Erradicación y control de las enfermedades producidas por virus*. (Madrid, 2012).

- Pachón del Amo, Isabel, C. Sanz-Ortiz and B. Merino-Merino, “Sistema de vigilancia de parálisis flácida aguda (PFA): descripción de los primeros casos notificados,” *Boletín epidemiológico semanal* 5(31) (1997), 289–292.
- Pachón del Amo, Isabel and M. C. Sanz-Ortiz, “Certificación de la erradicación de la poliomielitis. Sistema de vigilancia de parálisis flácida aguda,” *Boletín epidemiológico semanal* 7(18) (1999), 189–192.
- Pachón del Amo, Isabel and M. C. Sanz Ortiz, “Certificación de la erradicación de la poliomielitis. Sistema de Vigilancia de Parálisis Flácida Aguda. Año 2000,” *Boletín epidemiológico semanal*, 9(8) (2001), 77–81.
- Poliomyelitis, Papers and Discussions presented at the Third International Poliomyelitis Conference.* (Philadelphia, 1955).
- Poliomyelitis, Papers and Discussions presented at the Fourth International Poliomyelitis Conference.* (Philadelphia, 1958).
- Poliomyelitis, Papers and Discussions presented at the Fifth International Poliomyelitis Conference.* (Philadelphia, 1961).
- Porras, María-Isabel, Mariano Ayarzagüena, Jaime de las Heras and María-José Báguena, eds, *El drama de la polio. Un problema social y familiar en la España franquista.* (Madrid, 2013).
- Porras, María-Isabel and María-José Báguena, “El conocimiento sobre la realidad de las campañas de vacunación contra la polio, su cobertura, su seguimiento, la percepción de la población sobre su eficacia y/o peligrosidad y el reflejo en la prensa diaria (1963–1975),” in *Conference: Política, salud y enfermedad en España: entre el desarrollismo y la transición.* Alicante, December 12–13. (Alicante, 2015 (in press)).
- Porras, María-Isabel, María-José Báguena and Rosa Ballester, “Spain and the scientific conferences on polio, 1940s–1960s,” *Dynamis* 30 (2010), 91–118.
- Porras, María-Isabel, Rosa Ballester, María-José Báguena and Jaime de las Heras, “La Asociación Europea contra la Poliomielitis y los programas europeos de vacunación”, *Dynamis* 32(2) (2012), 287–310.
- Report of the 1st meeting of the Global Commission for the certification of the Eradication of Poliomyelitis.* (Geneva, 1995).
- Seytre, Bernard and Mary Shaffer. *Histoire de la poliomyélite.* (Paris, 2004).
- Smallman-Raynor, Matthew R, Andrew D. Cliff, Barry Trevelyan, Clive Nettleton and Sam Sneddon, *A world geography. Poliomyelitis. Emergence to eradication.* (Oxford, 2006).
- Smith Joseph, Rose Leke, Anthony Adams and Rudolph H. Tangermann, “Certification of polio eradication: process and lessons learned,” *Bulletin World Health Organization* 82(1) (2004), 24–29.
- Tuells, José, “El primer ensayo de campo sobre cadena de frío vacunal en España (Alicante, 1986–88),” *Vacunas* 2 (2009), 42–48.

- Tuells, José “El frágil inicio de la cadena de frío vacunal en España,” *Gaceta Sanitaria* 4(4) (2010), 354–357.
- Valenciano, Luis, Manuel Mezquita, Florencio Pérez Gallardo and Jesús Gabriel y Galán, “Estudio epidemiológico y virológico de la poliomielitis en España durante el quinquenio 1964–1968,” *Revista de Sanidad e Higiene Pública*, 43 (1969), 517–564.
- World Health Organization. *Report of the first meeting of the European Regional Commission for the certification of polio eradication*. Paris, 7–8 march 1996. (Geneva, 1996).
- World Health Organization. *The first ten years of the World Health Organization*. Geneva, 1958. World Health Organization. *The second ten years of the World Health Organization from 1958 to 1967*. (Geneva, 1968).
- World Health Organization. *Certification of Poliomyelitis Eradication in the European Region. Report on a WHO Meeting. Vienna, 16–17 December 1997*. (Copenhagen, 1998).
- World Health Organization. *The Third ten years of the World Health Organization, 1968–1977*. (Geneva, 2008).
- World Health Organization. *The Fourth ten years of the World Health Organization, 1978–1987*. (Geneva, 2011).

### *Acknowledgements*

This work has been carried out within Projects N° HAR2012-39655-C04-01 and HAR2012-39655-C04-02 of the Spanish Ministry of Innovation, Economy and Competitiveness (MINECO). A preliminary version of this paper has been presented on the *Tercer Congreso Internacional de Humanidades Médicas* (São Paulo, Brazil, March 15-16, 2013).

# Denial, oblivion and new fears: Poliomyelitis and the post-polio syndrome in the Spanish and Portuguese press (1995-2009)

Juan Antonio Rodríguez-Sánchez and Inês Guerra-Santos

## Introduction: Learning to Forget Polio

In 1988 the World Health Assembly approved and launched the Global Polio Eradication Initiative, in which the governments of the member countries took part, as well as UNICEF, the US Centres for Disease Control and Prevention, the Rotary International and even the WHO, then followed by other organisations such as the United Nations Foundation, the World Bank and the Bill and Melinda Gates Foundation. This ambitious project not only had a strong scientific support regarding their viability, as well it was socially based on the success in eradicating smallpox, officially registered in 1980. The first results were obtained in the Region of the Americas, where the eradication certificate was achieved in 1994.<sup>1</sup> The European Region, the third to achieve it, would have to wait until 2002.

The initial optimism, sometimes close to a disproportionate triumphalism, led to the setting of a date for the worldwide eradication of poliomyelitis in the year of 2000, which was then moved to 2005 and further continuously postponed, although with setting a specific year. The situation in 2009 was not encouraging, with cases of polio in 23 countries, some of them countries in which polio had been considered eradicated. The following year would not be better, because although the number of cases decreased and there were only cases in 20 countries, 88.53% of the cases were in countries where polio was not considered endemic. In this scenario, the WHO launched its Strategic Plan 2010–2012 (OMS, 2010). However, continued attempts to achieve the objectives had been frustrated by repeated

---

1 Nascimento, Dilene Raimundo do, Marcos Cueto, Eduardo Ponce Maranhão and Deepak Sobti, “A erradicação da poliomielite na América Latina: comparando Brasil e Peru,” pp. 161–176, in Dilene Raimundo de Nascimento, org., *A história da poliomielite*, Rio de Janeiro, 2010.

expansions and new outbreaks of the virus in countries believed polio-free, to the point that the European Centre for Disease Prevention and Control considered, at the end of 2013, the risk of reintroduction of wild poliovirus in Europe from Syria and Israel.<sup>2</sup> In return, on March 27<sup>th</sup> of this year of 2014, the eradication has been certified in the South-East Asia.

The countries of the Iberian Peninsula, Portugal and Spain, declared the last cases of poliomyelitis produced by wild poliovirus in 1987 and 1989 respectively. However, this apparent parallelism occurred only on these final dates, as both endemism and vaccination had different models and results. Despite the high morbidity rate in both countries in the years of 1958 and 1959, the campaigns of mass oral vaccination did not arrive in Spain until 1963 and in 1965 in Portugal, after faint attempts of vaccination campaigns with the Salk vaccine, but locally, low impact on public health and some advertising revenue and justification of health policies in both dictatorships.<sup>3</sup> The free oral mass vaccination campaigns were a huge success, which is demonstrated by the epidemiological statistics (Fig. 1).

In Portugal the connection of this campaign with the beginning of the Programa Nacional de Vacinação (National Vaccination Program) allowed a better control of the vaccinations, which did not happen in Spain until 1975, year of the introduction of the Calendario Vacunal (Vaccination Schedule).<sup>4</sup> Since 1966, the morbidity rates in Portugal did not surpass 0.1 (with the exception of the outbreak which took place in Madeira, in 1972) and since 1974 they were even lower, with 1977 as the first year with no case of polio registered. Spain, nevertheless, had, due to the referred reasons, higher morbidity rates than Portugal and the surrounding countries throughout the period and only managed to achieve an effective

---

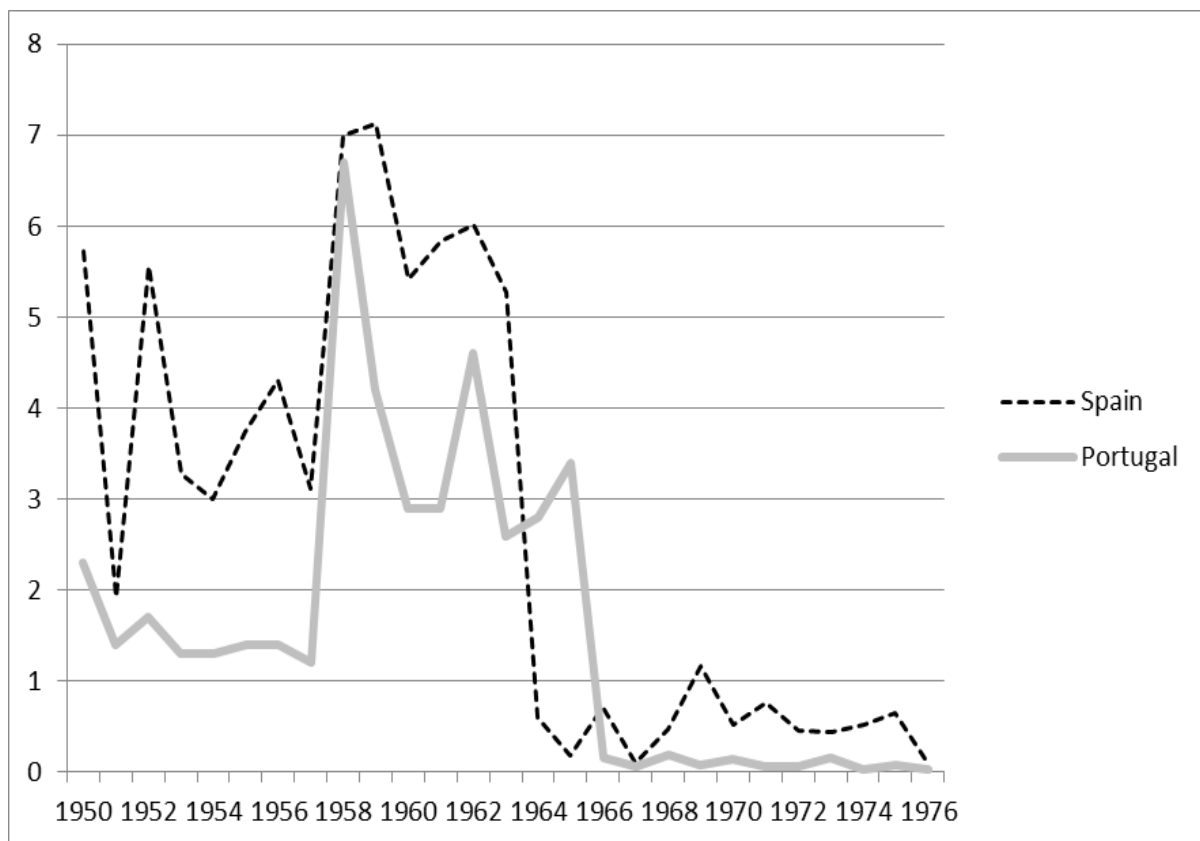
2 European Centre for Disease Prevention and Control. “Risk of introduction and transmission of wild-type poliovirus in EU/EEA countries following events in Israel and Syria – updated risk assessment (9 december 2013). In [http://ecdc.europa.eu/en/publications/layouts/forms/Publication\\_DispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113dbb90&ID=983](http://ecdc.europa.eu/en/publications/layouts/forms/Publication_DispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113dbb90&ID=983) [15-01-2014]

3 Rodríguez-Sánchez, Juan Antonio and Jesús Seco Calvo, “Las campañas de vacunación contra la poliomiélitis en España en 1963,” *Asclepio* 61(1) (2009), 81–116; Guerra Santos, Inês, “A poliomiélite em Portugal: o ‘Refúgio da Paralisia Infantil’,” pp. 177–194 in Dilene Raimundo de Nascimento, org., *A história da poliomiélite*, Rio de Janeiro, 2010; Pinto, Sandrine Martins, Inês Guerra, Juan Antonio Rodríguez-Sánchez, João Rui Pita y Ana Leonor Pereira, “De las campañas de vacunación al calendario vacunal: el Programa Nacional de Vacinação português y las Campañas Nacionales de Vacunación Antipoliomiéltica en España (1963–1976),” pp. 203–209, in Ricardo Campos Marín, Ángel González de Pablo, María Isabel Porras Gallo y Luis Montiel, eds, *Medicina y poder político*, Madrid, 2014.

4 Gil Prieto, Ruth, “Evolución de los calendarios vacunales en España,” pp. 139–156 in Enrique Perdiguero Gil, Enrique and Josep M. Vidal Hernández, coords., *Las vacunas: historia y actualidad*, Menorca, 2008.



**Figure 1.** Poliomyelitis morbidity in Spain and Portugal (1950–1976). Rate 0/0000



**Source:** Authors' own elaboration based on *Revista de Sanidad, Anuário Estadístico* and *Boletim Epidemiológico*.

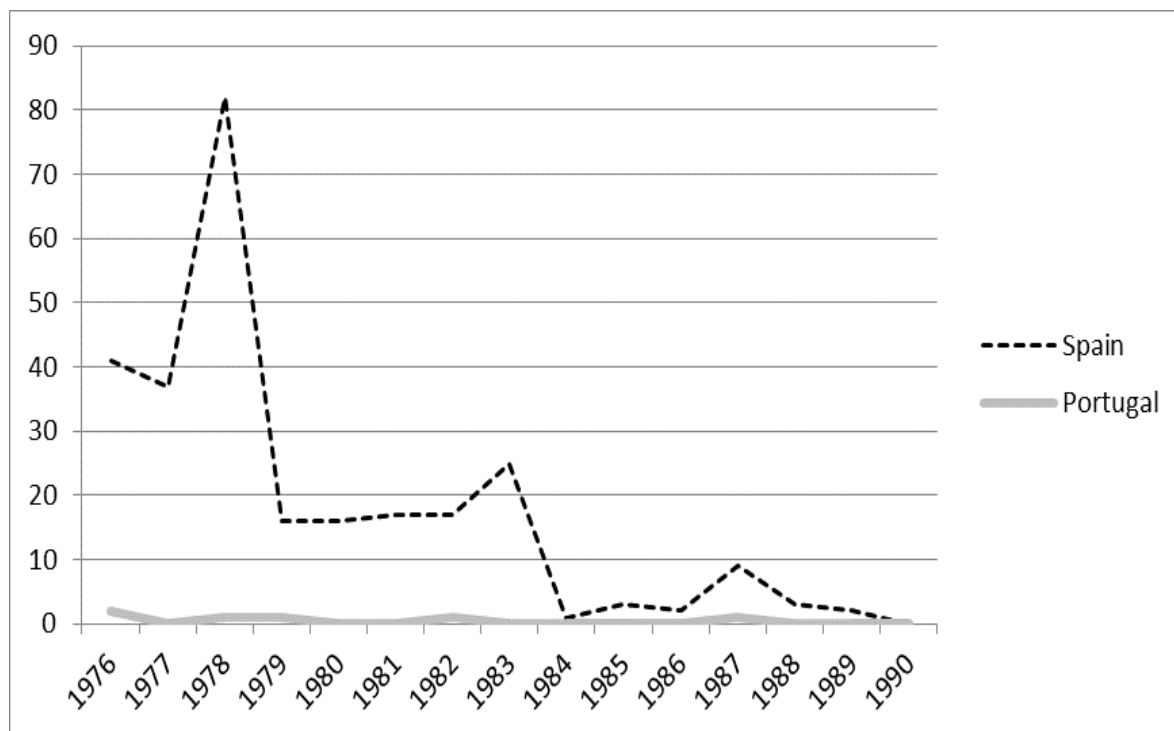
reduction in the 80s, when the new aid policies allowed reaching the whole children population.<sup>5</sup>

In Portugal, since 1979, there were only two cases of poliomyelitis, one in 1982 and, the last one, in 1987. In Spain it was not until 1989, that the cases of polio disappeared (Fig. 2).

This evolution of polio should be taken into account, for both the countries in the Iberian Peninsula and those in the whole of the European region and the world, to understand the social presence of its image and rapid forgetfulness, connected to the strong cultural imprint of a disease which affected younger children, leaving them with paralytic sequelae. Erase polio from the memory was a tacit strategy in the societies officially declared free of it, but little in accordance with the reality of those still living with the sequelae of polio, its late effects and even the appearance of the post-polio syndrome. Therefore, this work analyses the presence of polio in

<sup>5</sup> Rodríguez-Sánchez, Juan Antonio, “Responsabilidades não assumidas: a poliomielite na Espanha (1954–1967),” pp. 195–224, in Dilene Raimundo de Nascimento, org., *A história da poliomielite*, Rio de Janeiro, 2010; Pinto et al, 2014.

**Figure 2.** Poliomyelitis morbidity in Spain and Portugal (1976–1990). N° of cases



**Source:** Authors' own elaboration based on Revista de Sanidad, Anuário Estadístico and Boletim Epidemiológico.

the Spanish and Portuguese press in a period marked by the eradication and the absence of the disease.<sup>6</sup> The temporal dimension is marked by both international events: the first successful results in the global eradication of the disease – with the award of the certificate in the Region of the Americas in 1994 – and the first public recognition of the difficulties in meeting the eradication goals (with the creation of the Strategic Plan for 2010 by the WHO) and the implied goals for oblivion, as in 2010, the ICD finally recognised the post-polio syndrome as a nosological entity.

## The Media Construction of the End of Polio

From a theoretical point of view it is considered that the news production corresponds to a social construction of reality in which social meanings are defined and redefined, formed and reformed. From this point of view and facing the objectives of this study, we have chosen to resort to the theories of agenda-setting and framing, two of the most representative contemporary theories of communication. Both developed from the seventies of the last century onward. The first one starts off with the studies of Maxwell McCombs, Bernard Cohen and

---

<sup>6</sup> Smallman-Raynor, Mathew and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication*. Oxford, 2006, pp. 563–629.

functionalist paradigm, while the second originates in the streams of cognitive psychology and the sociology of Goffman.

The basic assumption of the theory of the agenda is that the issues highlighted by the media determine what the audience thinks. In other words, we can consider that the fact that the media are selective about the topics to which they pay more or less attention determines the importance that the audience itself will grant them. This fact acquires more importance if we think that this selection not only has an impact on public opinion, but it can also justify (or not) certain political actions (third level of performance of the agenda of the media, as suggested by Rogers and Dearing, 1988).<sup>7</sup>

In the same sense, the classical study by Lippman (1922) considers that the media determine the “cognitive maps of the world”, given that they transfer and grant highlight to certain images or discourses on certain themes.<sup>8</sup> It is a simple principle: the elements which are more often highlighted by the media gain more relevance and importance for the audience. However, this principle cannot be considered new: the content analysis proposed by Bardin presupposed that the number of times a word or a group of words is repeated has a direct connection with the importance granted to a certain theme. The differential aspect raised by the theory of agenda is that perception of the importance of a theme is transferred to the audience itself, thus conditioning its priorities agenda, that is to say that the priorities of the first become those of the latter. Obviously, it is important to highlight that, if there are subjects which are emphasized, there are also others which tend to be deferred and even ignored.

If the theory of the agenda tells us about its impact on the matters, the theory of framing takes a step further in considering that not only is what to think defined, but also the content of that thought. For Entman (1993, p. 52), framing would mean relating certain aspects of the perceived reality and turn them more relevant in the communicative text with the goal to promote a particular definition of a problem.<sup>9</sup> Although both theories tend to be confused, we can interpret the second one as an extension of the first, stepping from the domain of attention or focalisation to a different dimension: that of interpretation, understanding and interiorising (which leads to the subjective plan of opinion). The framing assumes contextualisation, identification of attributes (often distorted from reality), patterns of selection, inclusion/exclusion and emphasis/relegation.

---

7 Rogers, E. and J. Dearing, “Agenda Setting research: where has it been, where is it going?,” pp. 555–593, in J. Anderson, ed., *Communication yearbook II*, Newbury Park, CA, 1988.

8 McCombs, Maxwells, A Teoria da Agenda: a mídia e a opinião pública. Petrópolis, 2009.

9 Entman, R.M., “Framing: Toward clarification of a fractured paradigm,” *Journal of Communication* 43(4) (1993), p 52.

Entman (1991, p. 2) suggests that the new framing should be built on a basis of keywords, metaphors, symbols and images emphasized from the news, which ends up having an impact on the audience.<sup>10</sup> Santos (2012) highlights that such influence surpasses the simple persuasion to imply alterations and variations in the relevance granted to a subject or another. The audience emerges then as a passive element.<sup>11</sup>

The impact of the media on the public opinion may be justified by a sort of need for guidance. On the one hand, the audience wishes for such guidance to serve as a basis for their own constructions of reality and, on the other, the media have an opportunity to demonstrate, reinforce and legitimise their action. It is then understood that McCombs (2006) suggests that the bigger the need for guidance by the individuals, the greater the possibility that they will pay attention to the agenda of the media and undertake it as theirs, with an impact that may affect their own behaviour.<sup>12</sup> For this author, uncertainty would be another element to take into account, given that the increase of the degree of uncertainty is related to higher levels of the need for guidance. To this element we may add that of relevance: Severo (2007) relates this concept with that of uncertainty in the sense that a higher relevance tends to lead to a greater search for information to reduce that uncertainty and when it considerably diminishes, the audience resorts to the media only to follow possible changes in such an already known situation.<sup>13</sup>

One other element to be taken into account is the so called time-lag, the time interval which elapses between the media coverage by the media and the audience agenda, revealing the degree of importance attributed to the various themes.

Santos (2012) suggests that the agenda of the media is conditioned by a series of external factors, such as political pressure or the business strategies, which is also important to bear in mind.<sup>14</sup>

Finally, we must consider that the level of exposure to the media is decisive. The higher the individual's exposure to the media, the higher the probability that they will condition the thought; on the other, the larger the coverage / audience of the media, the larger its impact.

The resource to these theories as theoretical support implies a combination of quantitative and qualitative methodologies in order to identify, for example, which are the themes considered more relevant at a certain period of time and, simultaneously, which meaning is attributed to them.

---

10 Entman, R.M., "Framing U.S. coverage of international news: Contrast in narratives of the KAL and Iran air incidents," *Journal of Communication* 41(4) (1991), p 2.

11 Santos (2012) Santos, João de Almeida, *Media e poder: O poder mediático e a erosão da democracia representativa*. Lisboa, 2012.

12 McCombs, Maxwells, *Estableciendo la agenda: El impacto de los medios en la opinión pública y en el conocimiento*. Madrid, 2006.

13 Severo, Bruna Meireles, *A Imprensa e seus efeitos sobre a audiência*. Rio de Janeiro, 2007.

14 Santos, J.A, 2012.

In this article we start from the assumption that the media, particularly the journalistic writing, stopped perceiving polio as a problem in the countries of the Iberian Peninsula, progressively linked polio to programs of international cooperation and development (ICD) in countries in Africa and Asia and thus built an image of a distant and foreign disease which was already part of the past, both in Portugal and Spain. This fact, led to the reduction of information about polio – with the consequent neglect of it – and especially, and with worse consequences, about the post-polio syndrome. So being, polio and post-polio syndrome have been forgotten in the agenda of the media and, consequently, in that of the audience and even in the political agenda.

To this end we have analysed two newspapers in each country, of general information, paid, with a national scope, selected due to the fact that they are those with the largest circulation and readership in their respective countries and presented a broad ideological spectrum: *El País* (Prisa), *El Mundo* (Unidad Editorial, RCS Media Group), *Jornal de Notícias* (ControlInveste) and *Público* (Sonaecom). While the *El País* and the *Público* can be considered as having many common elements (not only their centre-left position, but also due to their membership in the World Media Network), the *El Mundo* is linked – through the Rizzoli group – to newspapers such as the Italian *Il Corriere della Sera* and its position is defined as liberal, close to the centre-right parties in Europe and very critical of the Partido Socialista Obrero Español (Spanish Socialist Workers Party). Also in the centre-right, more conservative than liberal, is the *Jornal de Notícias*, with a clear populist and regionalist trend. We must consider that in Portugal the diffusion rate of the written press was three times lower than the European average in the period of time analysed (and, together with Greece, the country of the European Union with less development of the daily press), although the audience (reading pervasiveness rate) was greater than the Spanish, which one needs to know to qualify the conclusions.

We conducted our research on their digitised printed editions (1995–2009), both to study a broad chronological period (15 years) and to explore the presence of polio not only as an article, but also in all references to it and the contexts in which they were produced, as the social impact of the disease has become part of a collective imaginary which grants it's with metaphorical uses and therefore associates it with hardly identifiable themes without resorting to automated digital search.

The problem met was the lack of digitisation of the Portuguese press for that period and also the hard and costly access to the one which was digitised. That motivated that, in the case of the *Público*, we only counted on the digital information as of the year of 2000, when its first graphical redesign occurred. The criteria for maintaining the daily *Público* as one of the objects of our research were due to the following considerations: the journalistic style, more reflexive, critical

and rigorous, and because it is a newspaper which despite the fact that in its print edition is not the most read, it is the one with the largest number of subscriptions in its digital edition. Methodologically, given that the inclusion criteria used result from a definition imposed by external conditions, understandable and reasonable, it allows us to consider that the results achieved are valid, as they result from objective proceedings, based in the same analysis criteria.

This methodological validity is reinforced by the criterion of comprehensiveness which conducted the research and analysis. For the research we used truncations and logical operators, starting from the intersection of more specific terms to progressively incorporate others, wider, until the exclusive use of the truncation \*polio\*. Albeit the documentary noise increases, it also allows us to check the comprehensiveness. The results have been divided into “entries” (or items) which are those informative or publicity pieces where poliomyelitis is referred and “articles” which are those informative pieces where polio is the main theme (it is present in the title, subtitle or opening paragraph, photo captions or a main approach in the body of the article). The specific features of inclusion and exclusion have been determined.

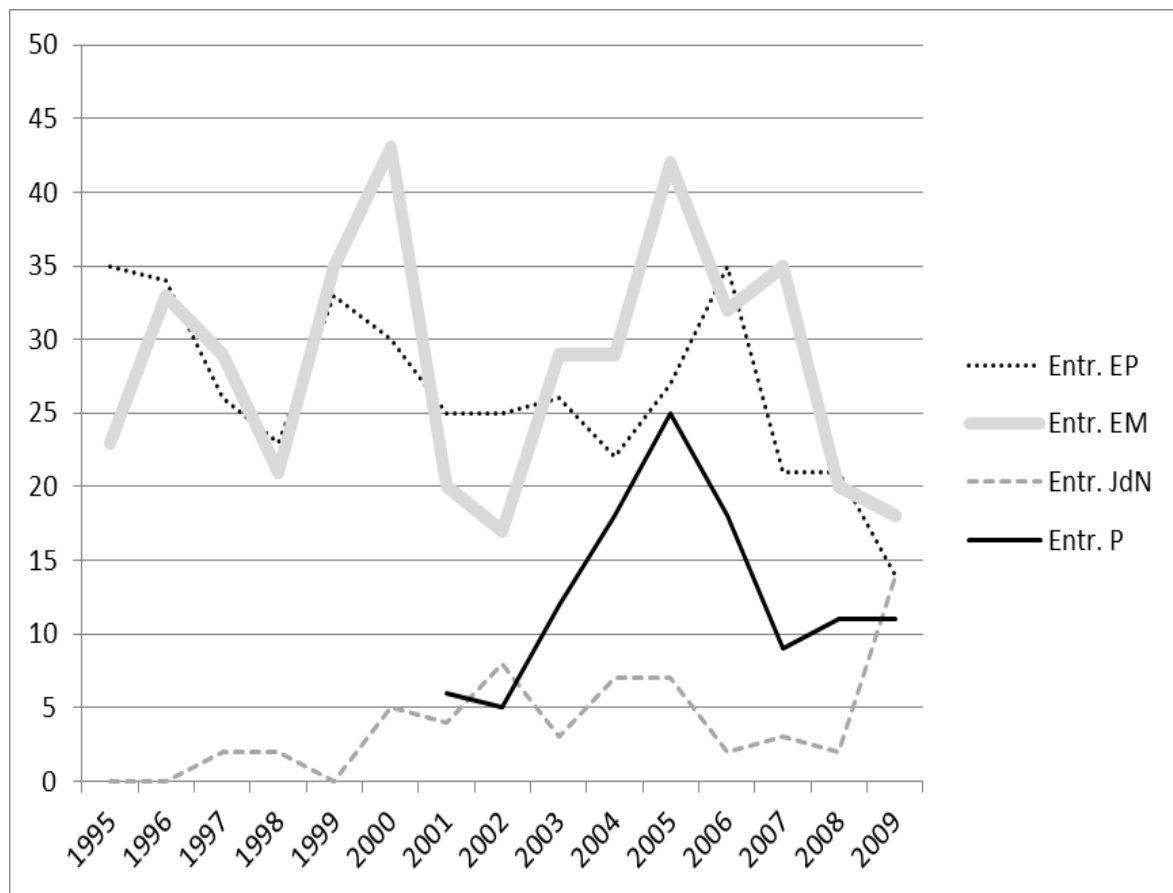
The quantitative results are presented on table 1 and figures 3 and 4.

**Table 1.** Entries and articles about polio and PPS in Spanish and Portuguese newspapers (1995-2009)

Year	Entries polio				Art. polio				Entries PPS				Art. PPS			
	EP	EM	JN	P	EP	EM	JN	P	EP	EM	JN	P	EP	EM	JN	P
1995	35	23	0		5	1	0		0	0	0	0	0	0	0	0
1996	34	33	0		5	3	0		0	0	0	0	0	0	0	0
1997	26	29	2		3	4	0		0	1	0	0	0	1	0	0
1998	23	21	2		0	0	0		1	1	0	0	0	0	0	0
1999	33	35	0		1	1	0		1	0	0	0	0	0	0	0
2000	30	43	5		3	6	1		2	2	0	0	1	0	0	0
2001	25	20	4	6	2	5	0	1	0	0	0	0	0	0	0	0
2002	25	17	8	5	8	6	3	3	3	0	0	0	0	0	0	0
2003	26	29	3	12	4	2	0	3	0	0	0	0	0	0	0	0
2004	22	29	7	18	8	7	2	4	1	1	0	0	1	0	0	0
2005	27	42	8	25	6	6	2	6	1	0	0	0	1	0	0	0
2006	35	32	2	18	4	2	0	2	1	0	0	0	0	0	0	0
2007	21	35	4	10	2	2	1	2	1	0	1	0	0	0	0	0
2008	21	20	5	11	1	1	0	1	1	0	0	0	0	0	0	0
2009	14	18	17	11	2	5	1	0	2	2	0	0	1	0	0	0
<b>TOTAL</b>	<b>397</b>	<b>426</b>	<b>67</b>	<b>115</b>	<b>54</b>	<b>51</b>	<b>10</b>	<b>22</b>	<b>14</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>

Source: Authors' own elaboration.

**Figure 3.** Entries about polio in Spanish and Portuguese newspapers (1995–2009)

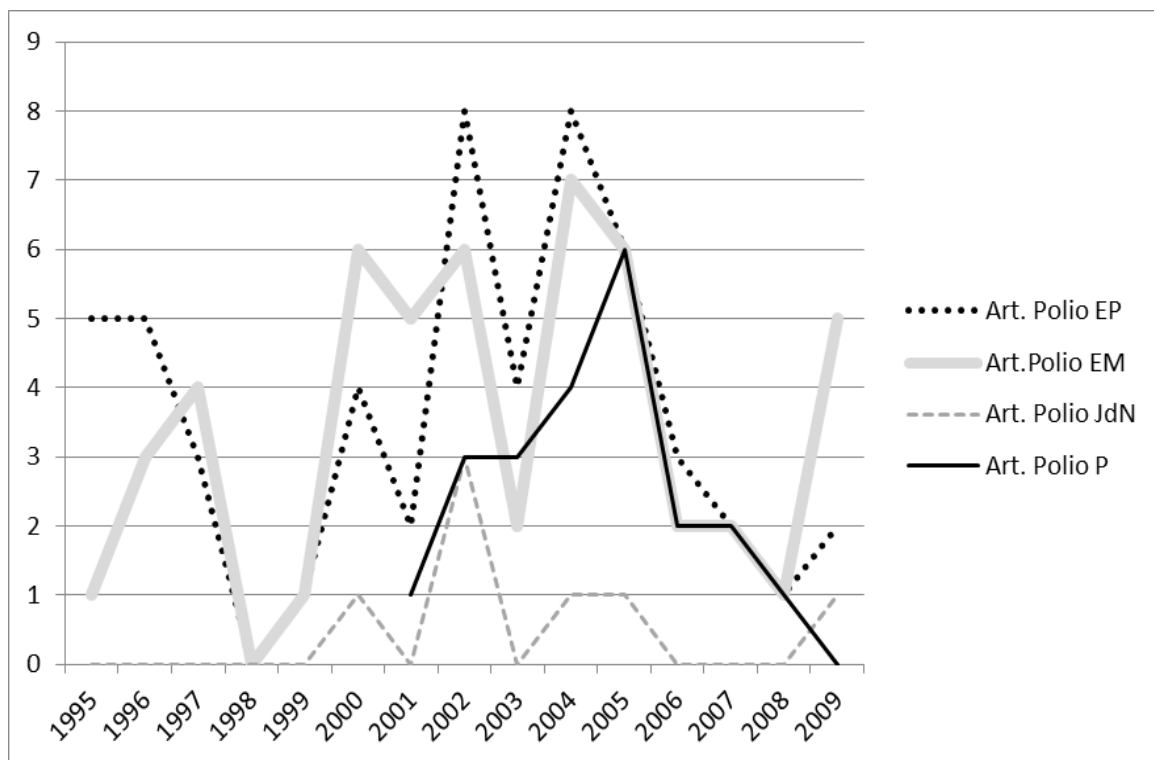


**Source:** Authors' own elaboration.

The various lines found between the entries or references found for Portugal and Spain (Fig. 3), especially in the case of the *Jornal de Notícias*, may also be attributable to the distinct precision in the information search and recovery system, normally resulting from the quality of the digitisation, given that the latter conditions the exactitude of the optical character recognition software (OCR). Notwithstanding, this consideration is only applicable to the entries with smaller characters (commercials, billboards, television), which are also those of lesser informative relevance and never to the articles.

The articles were subjected to a qualitative analysis (with the Atlas.ti software). The analysis was based on the grounded theory, initially free coding and later definition of hierarchies and creation of families of codes. From the results achieved, we have identified the main problems approached, which are those that structure the following presentation.

**Figure 4.** Articles about polio in Spanish and Portuguese newspapers (1995–2009)



Source: Authors' own elaboration.

## A Disease Remote in Time and Space

The last case of poliomyelitis occurred in Spain, in 1988. In Portugal the last case took place in 1987, after a decade in which only three cases had been reported. The reduced morbidity rates and years free of polio cases led to a quick forgetfulness of the disease and its sequelae. The newspapers did so recognise and, although the certificate of polio eradication in the European Region was only achieved in 2002, their agendas stopped including polio as an important information theme.

For the period analysed, polio is approached from two points of view conditioned by the alienation of the problem. Polio becomes a health problem in countries in Africa and Asia which requires intervention according to the premises of international cooperation; a problem which not only appeals to solidarity, but also to the awareness of the effects it could have on the polio-free West to a new expansion of the virus. Therefore, the goal of eradication feeds, in the pages of the press, from both solidarity and fear.

The second perspective is that of polio in some countries in which there is no memory of it; consequently its image will emerge associated with the past through the sequelae of those who suffered from it, even if they will just have informative relevance when the virus is associated with other diseases that do constitute a public health problem or are part of scientific researches with various implications.



Therefore, we first analyse the information content referring to polio outside the Iberian Peninsula, and then we consider the issues about polio in Spain and Portugal which were object of attention for the press in the study period. The timing will be discussed later, as well as the issues that were not given informative relief.

### *From Charity to Solidarity*

In the analysed period, the press builds a picture of poliomyelitis associated with poor countries and totally divorced from the reality of Portugal and Spain. The photographs accompanying the articles on vaccination campaigns are significant, whether or not they are photos of polio: the administration of oral vaccine becomes a symbol for vaccination and those who receive it are always children of readily identifiable ethnic groups (by race or clothes) and from other continents.

Polio is associated with poverty and ignorance, which, in the case of the Spanish press, has a more obvious approach in the *El País*: the descriptions of the remote areas where new outbreaks occur often present them as economically depressed and the most common obstacle to the success of vaccination campaigns would be the beliefs that would support the anti-vaccination. The difficulties for the eradication are mainly attributed to cultural reasons, although the role of armed conflicts is also highlighted. In the Spanish press, *El Mundo* will be the one which more explicitly expresses the economic cost of vaccination campaigns as one of the difficulties.

From this perspective, the countries affected by polio are portrayed as recipients of international cooperation actions for health, led by the WHO and UNICEF.

For the period under analysis, we can observe the movement of the forms of solidarity towards polio. Unlike Portugal, Spain had, since 1963, a specific association for people affected by polio. The date of creation indicates that this was an organization tolerated by the government of the Franco dictatorship and that it posed as a charity. For the period analysed, the ALPE (Asociación Española de Lucha contra la Poliomiélitis – Spanish Association against Polio) maintained these typical charitable activities through the collection of donations through concerts or auctions, whose funds would go to people with polio sequelae.<sup>15</sup> The advertisements for these activities are abundant in the early years analysed and until the year of 2000, when financial problems led to the seizure of their property. In Portugal, people with polio integrated themselves into broader associative movements for people with disability, which contributed to their invisibility.

It is precisely the turn of the millennium which will mark this significant change, when the beneficence of ALPE towards people with polio from “here” would be

---

15 Rodríguez-Sánchez, Juan Antonio, “Las secuelas sociales de la polio: los inicios del movimiento asociativo en España (1957–1975),” *Dynamis* 32(2) (2012b), 391–414.

displaced by the demands of international organizations for cooperation in the eradication of polio in distant countries. The WHO and UNICEF thus became the organizations more strongly linked to polio in the press, which would be joined by the Rotary Club (and in particular, Rotary International), although the methods of fundraising remained similar: auctions and charity events, even though the latter would have the support of their television broadcasts.

In Portugal, the *Jornal de Notícias* maintained a connection between polio and charity, through a section of Catholic charity called “Every Man is your brother”, where there were requests for monetary assistance for people with financial difficulties who needed wheelchairs and other devices. This type of discourse can be considered residual of that evident connection to Catholicism - charity / welfare - disability which occurred in the countries of the Iberian Peninsula.<sup>16</sup>

The geographical distance between readers and disease is also reflected in the information about donors and Spanish researchers who will conduct their activity in countries with polio: *Medicus Mundi*, *Intervida*, *Ayuda en Acción* or missionaries from various religious congregations, present themselves as examples of international cooperation for the development, which include actions on polio.

In the case of Portugal, there would have to be the qualification of the special circumstance of proximity in time to the colonial era, which would justify the interest in polio in Angola (also discussed in the Spanish press, but less frequently), Mozambique, Cape Verde or Timor, close in time to its independence (1975), although geographically distant, which allowed to highlight the epidemiological break with the other links.

### *The Danger is the other: Polio as a Metaphor*

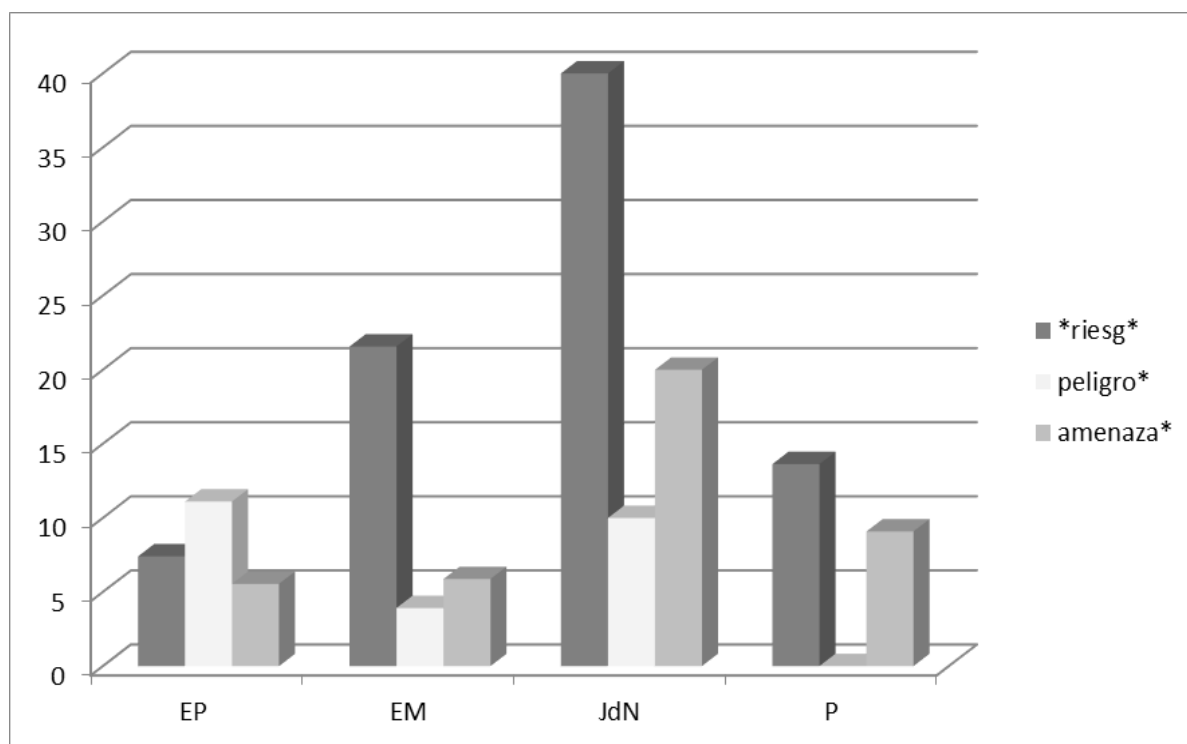
The calls made by the media for solidarity to contribute financially to vaccination in countries with epidemics do not prevent these people from also being presented as an obstacle to the eradication and a constant danger due to the transmission of a virus that could return to the West .

Polio, in the newspaper articles analysed, is associated with terms like risk, danger or threat (Table 2 and fig. 5).

---

16 Rodríguez-Sánchez, 2012b; Rodríguez-Sánchez, Juan Antonio, Rosa Ballester Añón and Inês Guerra Santos, “El movimiento asociativo: una perspectiva internacional, nacional y de los casos de Madrid, Valencia y Castilla – La Mancha,” pp. 233–257, in María Isabel Porras Gallo, Mariano Ayarza Güena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista*, Madrid, 2013.

**Figure 5.** Articles about poliomyelitis and risk in Spanish and Portuguese newspapers (1995–2009). Rate 0/0



Source: Authors' own elaboration

**Table 2.** Articles about polio and risk (1995-2009)

Year	Entries polio				Art. polio				Entries %				Art. %			
	EP	EM	JN	P	EP	EM	JN	P	EP	EM	JN	P	EP	EM	JN	P
*riesg*	63	58	10	5	4	11	4	3	15,87	13,61	14,92	4,35	7,41	21,57	40	13,64
peligro*	49	43	3	2	6	2	1	0	12,34	10,09	4,48	1,74	11,11	3,92	10	0
amenaza*	28	23	3	4	3	3	2	2	7,05	6,57	4,48	3,48	5,55	5,88	20	9,09

Source: Authors' own elaboration.

The concern for the importation of the virus is clearly found in Portugal, due to the connection with the former colonies. The *Jornal de Notícias* develops such a discourse on early (the first article registered dates from 17-12-1997) and constant dates (1998, 2000, 2003 and 2004). Despite the vaccination coverage in the countries of the Iberian Peninsula, the immigrant begins to be seen as a potential threat, the bearer of microorganisms that were already part of the past. In the regional pages of the Madrid edition of the *El País* of 03-07-2005, we found the headline: "Healthcare is preparing a specific vaccination schedule for poorly immunized immigrants. There are outbreaks of diseases that were virtually

eradicated in the Community.” None of these outbreaks was polio, but vaccination was reinforced.<sup>17</sup>

To the extent that the dates shuffled to achieve eradication (2000 and 2005) evidence the failed attempt, newspapers (and the WHO) provide explanations in the form of news. The discourse focuses on the easy transmission of the virus and the vaccination campaigns as the only way to stop it. The risk for neighbouring countries becomes an image of global threat. In 2004 we find similar headlines in Portugal and Spain: “WHO alerts to poliomyelitis outbreak in Africa” (*Público*, 23-06-2004), “WHO warns of expansion of the biggest polio epidemic of the last few years in Africa” (*El Mundo*, 24-06-2004). Meanwhile, the *Jornal de Notícias* considered that the outbreak in Darfur (Sudan) posed a high risk of infection (*Jornal de Notícias*, 10-10-2004). One of the most descriptive headlines of this discourse can be found in the *El Mundo*: “Polio reappears in 17 countries / Experts located the source of new outbreaks in Nigeria, where there was a boycott of the vaccine in 2003 / This year, Yemen and Indonesia are the most affected” (*El Mundo*, 11-5-2005). The article, signed by Rosa M. Tristan, renders account of the problems in the region of Kano, in Nigeria, which led to an outbreak that spread across the north of the country and from there spread to neighbouring countries and other Islamic countries, due to pilgrimages to Mecca. It is quite interesting to transcribe the way it is narrated: “Two years ago, the most extreme Islamic authorities launched a boycott against the childhood vaccination campaigns which WHO and UNICEF had begun. They were accused of endangering their children in an international conspiracy against Muslims and refused immunization for months, until they are convinced that vaccines were reliable” (*El Mundo*, 11-5-2005, 38).

The way the Nigerian outbreak is interpreted also shows different journalistic uses of polio, closer to metaphor rather than objective information. The association between polio and Islam occurs more clearly in the Spanish press, and specifically in the newspaper *El País*, which will associate Nigeria with polio triple the times the *El Mundo* did so (45 times versus 15), having a clear position in the Nigerian anti-vaccination posture, promoted by fundamentalist religious leaders as the source of the spread of the epidemic. Beyond this explanation given by the WHO itself, the different distribution of the same in the two countries, and especially between the two Spanish newspapers, requires careful reflexion.

The chronological analysis of the association between polio and Islam that makes *El País* evidences that, of the 54 articles analysed, the term “Islamism” only appears in articles on polio as of July 29<sup>th</sup> 2003 (Fig. 6) . None of the 30 previous

---

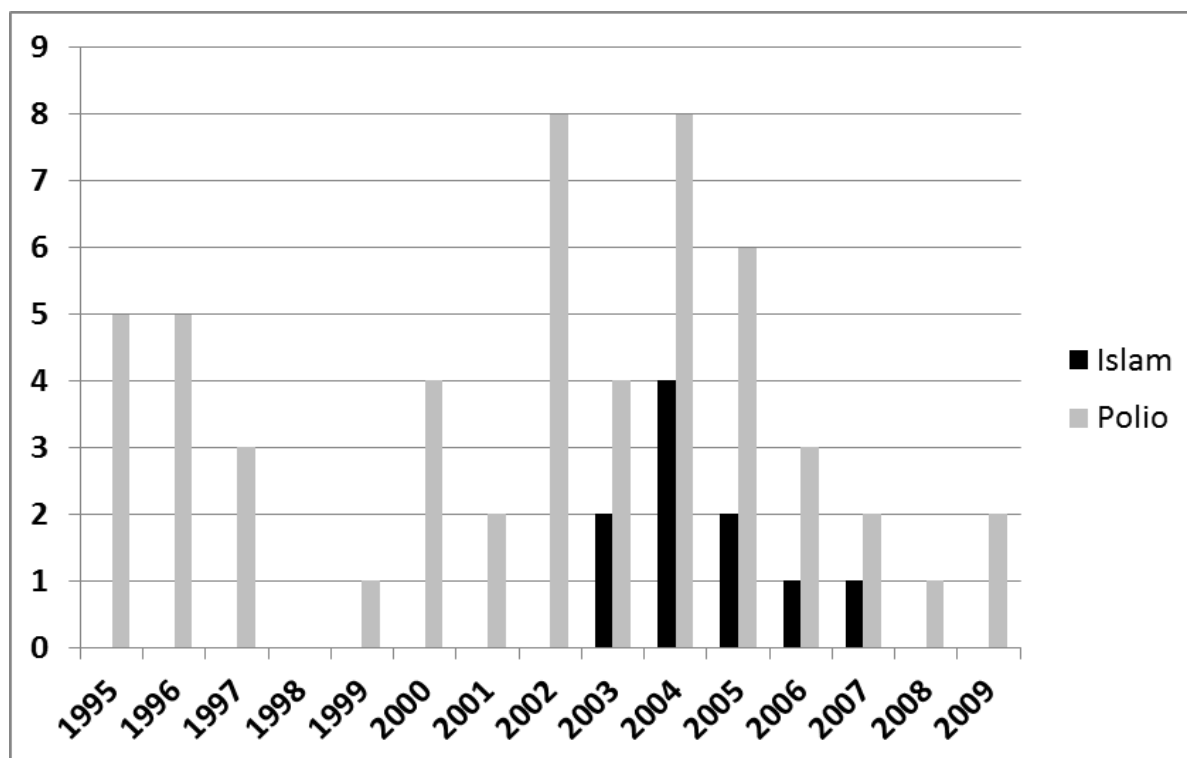
17 Otero García, Laura, *Aproximación a las representaciones sociales sobre la salud de la población inmigrante en el discurso periodístico en prensa escrita española (2000–2006)*. Madrid, 2011.

**Table 3.** Relationship between polio and Islam (1995-2009)

	EL PAÍS	EL MUNDO
Islam*	17	2
Fundamentalis*	0	1
Integris*	4	0
TOTAL	21	3

Source: Authors' own elaboration based on *El País* and *El Mundo*.

**Figure 6.** Relationship between polio and Islam in *El País* (1995–2009)



Source: Authors' own elaboration.

articles linked both concepts, in contrast with 45.83% of the 24 posterior articles which did so. Some of the headlines raise no doubt, with the use of terms such as Islamists (fundamentalists, radicals) and boycott.<sup>18</sup> An explicit statement dated 02-03-2004 assimilated fundamentalism with Islam and introduced the guilty verdict: “Up to seven countries have registered polio cases, in the last year, because of the Islamic authorities in northern Nigeria”.

While the first article offered more objective information (the Council of the Nigerian Sharia considered that vaccines contained the HCG hormone which would prevent fertility), the latter showed the Nigerian anti-vaccination devoid of background or context, prevailing only the image of fundamentalism. The article dated 30-03-2006, signed by Celia Dugger and Donald McNeil Jr. of the *The New York Times* (which would weekly select news from *El País* for publication in

18 López Gil, Pablo, Miguel Otero Iglesias, Miguel Pardo Pereira y Miguel Vicente Mariño, dirs., *La imagen del mundo árabe y musulmán en la prensa española*. Sevilla, 2010.

Spanish) allows acknowledgement of a full, more simplistic and radical construction, of how the Nigerian Sharia offered opposition to the vaccination of the West: the conspiracy theory had been sponsored by Dr. Ibrahim Datti Ahmed (Chairman of the Supreme Council of Sharia in Nigeria, political and religious opposition in northern Nigeria) during the 2003 elections when he did not obtain a position in the Department of Health of the secular federal government of the country.

It is noteworthy that the only article in the *El Mundo* that clearly associates fundamentalism and anti-vaccination against polio also comes from foreign signatories, in this case Declan Walsh (*The Guardian*): “Fundamentalism boosts childhood polio in Pakistan / Thousands of parents refuse to vaccinate their children against the disease because some clerics tell them that this is an American plot to sterilize them” (*El Mundo*, 16-02-2007). Its structure is very similar to that which had already been seen and, in the text, the Nigerian Anti-vaccination reappears as the source for the virus spreading to twelve countries which were free of polio.

Notwithstanding, it will be the newspaper *El País* to give some clues to understand the problem: the articles dated 28-10-2003 and 23-06-2004, signed by Emilio de Benito (specialist in health matters) refer that in 1996 Pfizer carried out a clinical trial of a drug against meningitis in northern Nigeria (the main opposition to the vaccine), in the region of Kano causing 11 deaths and serious sequelae in 200 other children; something which the Portuguese newspaper *Público* three years later echoes (“Nigerian state of Kano sues Pfizer for trial of drug which victimised children” *Público*, 6-6-2007). Only at the end of a short article of 31-07-2004 can we find another element to understand the anti-vaccination: “Doctor Bashir Sadiq Wali, head of the team in charge of the confirmation of the condition of the vaccines, states that the suspension of the campaign is due to 'the public mistrust towards the West’” (*El País*, 31-07-2004).

The different attitude among Spanish newspapers must be related to the events which were taking place in their own country: the participation of Spain in the invasion of Iraq rendered the country to be considered as target of jihadist terrorism, with the appalling consequences of the attack which took place on 11-05-2004. The different political views of both newspapers about the authorship of the Atocha terrorist attack should be considered as determinants in the development of such different discourses regarding polio and its expansion: from the perspective that Islamic fundamentalism is “the” threat, polio works as representing it.

## A Two Faced Science

The information on polio in the analysed press offers different aspects once their presence in the West is contemplated and especially in the countries studied. Here information is usually linked to scientific aspects, primarily those involving new contributions, but also those which entail risks, feeding a wide range of anti-vaccination theories which, without any higher reliability than that seen in developing countries, are informatively treated with greater respect.

Virus, vaccine and vaccination become models: the virus for its structural simplicity; the vaccine for its efficiency; and vaccination as an example of great global project which will lead to eradication. This aspect does not motivate articles nor is it present in the headlines, but it is constant when analysing the operating framing. For this reason cross references are very common when any other issue is dealt with, given that polio provides for a comparison element known to readers and easily assimilated; it is therefore cited with reference to diseases such as HIV / AIDS, influenza, malaria, smallpox, tuberculosis and leprosy, in order of highest to lowest frequency.

### *The Poliovirus*

On July 12<sup>th</sup> 2002, the *Jornal de Noticias* collected the opinion of American researchers about the danger of the production of the poliovirus in a laboratory. Those opinions were also reported by *Público* (12-07-2002) and on the following day, by *El Mundo* and the *El País*, which gave it front page coverage: “Pentagon-funded scientists created, in a laboratory, the poliovirus.” The subtitle left even clearer what the piece of news intended to convey: “The experiment, with DNA purchased by mail, raises the spectre of bioterrorism.” The article rendered account of the publication in the *Science Magazine* of the work by Eckard Wimmer’s team in the synthesis of the poliovirus from the available genetic information on it and emphasized the most dangerous aspects of the achievement. Wimmer himself understood, in an article dated 12-10-2002, the causes for alarm: “The project was approved in 1998, it had nothing to do with September 11<sup>th</sup>. If we had we published the results before that date, they probably wouldn’t have caused such an outrage. The fear of bioterrorism allowed emotions to run wild.” An increasing fear throughout the West.<sup>19</sup>

On April 15<sup>th</sup> 2003, the *Jornal de Noticias* abounded in the connection between polio and bioterrorism, with no need for synthesis, while reporting that a laboratory

---

19 Hecht, Alana, *Polio*. New York, 2009. 2nd ed., pp. 82–100.

had been looted from Iraq and free access to the virus had been achieved. In contrast, the *El Mundo*, which initially gave little importance to the artificial creation of the poliovirus (middle column on the 13-07-2002), explored the possibility of bioterrorism only after the publication of an article, on the 08-10-2004, about the creation in a laboratory of the virus of the Spanish flu of 1918. However, the most serious consequence of the achievements of artificially producing a virus was only featured in the headlines of *El País* on the 12-10-2002 “Never again will it be possible to eradicate a virus.” Eradication presents itself as utopia and vaccination as a continuous need.

### *The Vaccine*

For the press, the polio vaccine is the one administered directly, with a few drops ingested orally, although paradoxically it never shows the name of Albert Sabin, despite constantly having the name of Jonas Salk connected to it, as if it were a surname, the “discoverer of the polio vaccine.” This connection goes further beyond Salk himself extending to his Institute, so that all studies on a vaccine against HIV were hopefully associated with polio, but always marking the difference between the simplicity of this vaccine compared to the highly complex ones which immunize against plasmodium or HIV. Other informative occurrences do not have any special meaning because they appear jointly with the periodic announcement of the vaccination schedules and their alterations, such as the introduction of the hexavalent vaccine, although it was advertised for the convenience of reducing “sticks” but without analysing the reasons and consequences of changing an attenuated virus for an inactivated one.<sup>20</sup>

It is precisely this relationship with HIV that feeds one of the critical theories towards vaccines which has occupied more space in the press. It was disclosed by journalist Edward Hooper in his book *The River* (1999); he considered that during the tests for an oral polio vaccine (performed in the Belgian Congo by Hilary Koprowski, for the Wistar Institute in Philadelphia) would have unintentionally introduced simian immunodeficiency virus in the new vaccine. The *El Mundo* did not hesitate to give it the entirety of article with a sensationalist title: “A laboratory in the USA could have created AIDS”, which, although being referred in the subtitle, is subsequently fostered by the drafting of a text which begins with “AIDS is the work of man” (*El Mundo*, 16-11-1999). In 2000 studies were performed which

---

20 Beale, A. John, “The Development of IPV,” pp. 179–187 in Stanley A. Plotkin, ed., *History of Vaccine Development*, New York, 2011.



dismissed this origin and refuted this theory,<sup>21</sup> of which both the *El País* and the *Jornal de Notícias* gave information, this time as articles. The *El Mundo* also mentioned it, but only with a brief 11-line article.

Three other links were established between the polio vaccine and other diseases. The contamination of the polio vaccine with a virus found in apes (the SV40) was mentioned in articles like the one that dealt with the xenotransplantation by exposing the possibility of transmitting animal viruses to humans with unpredictable consequences (*El País*, 28-01-1998, 37). José Antonio López Guerrero, a virologist at the Autonomous University of Madrid, wrote an article in the *El Mundo* about the collateral damage of vaccines and echoed the studies of the Samaniego group which placed the SV40 transmitted by the polio vaccines as the source for lymphoma of unknown etiology (*El Mundo*, 17-06-2004).

Without having a specific character for polio, but rather for vaccines in general, some articles appeared on the mercury content of thimerosal – used as a preservative in vaccines – as the cause for autism (*El País*, 07-07-2005, sup. 5). The polio vaccine was one of the vaccines which, for this reason, the Americans anti-vaccination began to reject. The information came from the *NYT*, from which the *El País* offered the Spanish version of some selected articles. Nevertheless, the year before, the *El Mundo* had published an article in which, supported by scientific publications, the relationship between vaccines and autism or Type I diabetes was discarded (*El Mundo*, 03-04-2004).

A much more alarming situation which was reflected in the press of both countries in an immediately and simultaneous manner was that of the noncompliance, by the pharmaceutical company Medeva, of the European norm on bovine spongiform encephalopathy, which prohibited the use of bovine derivatives in the process of making medication, given that this disease, active in the cattle, could be transmitted to humans. Medeva have marketed bovine serum used in the preparation of vaccines against polio, which would open a possibility for the production of Creutzfeldt-Jakob disease. Although with some nuances, the three newspapers presented headlines on October 21<sup>st</sup> 2000: “The UK withdraws a polio vaccine” (*El Mundo*), “London and Dublin remove, out of fear of the 'mad cow' disease, a vaccine applied to thousands of people” (*El País*), “Vaccines against polio are safe in Portugal” (*Jornal de Notícias*). While the Portuguese headlines sought to reassure, the headline in the *El País* fired alarms.

The amount of information about vaccine risks and potential sustaining theories of anti-vaccination is not only not ridiculed as we have seen in the case of Islamic countries, but they are even sponsored, but ultimately refuted or a compensatory image of the benefits of vaccination is offered. The possible influence of the agenda

---

21 Koprowski, Hilary and Stanley Plotkin, “History of Koprowski Vaccine Against Poliomyelitis,” pp. 155–166, in Stanley A. Plotkin, ed., *History of Vaccine Development*, New York, 2011.

and framing is not manifested in actions consistent with the alarm or uncertainty that could have been generated, but the percentage of children vaccinated rises from 90% to almost 96%.<sup>22</sup> This fact allows us to question the power of influence of the media agenda against a reality with a standardization supported by pragmatism.

### *Polio after Vaccination*

The oral vaccine and its role in immunization save themselves with a balance in their favour within the information provided by the press. However, the risks of vaccination with attenuated viruses (such as the oral vaccination) always involve a small risk of producing what is called vaccine associated paralytic polio (VAPP). Another issue widely discussed, denied and disputed, is that of mutations of the virus in the environment and the recovery of its infecting and paralytogenic power.

Until 2000, *El País* published three articles (out of 14) which questioned vaccination: a brief note dated 23-10-1995 conveyed the American CDC recommendation to move on to the injectable vaccine in consequence of the cases of paralytic post vaccine polio presented; this is confirmed in another article dated 22-06-1996 and crowned with an article about a case of post-vaccine polio seven years after having been vaccinated (*El País*, 19-07-1997), all of which in the United States.

The dates and the type of articles were earlier than those published in the *El Mundo*, which only reports about the VAPP from 2000 onwards, with a good article by Carlos Marina Lopez within a long report dedicated to polio and its eradication (*El Mundo*, 12-04-2000). On the 25-11-2000, the column by Deborah Mackenzie, of the *New Scientist*, was reproduced; it reported on Mahoney varieties of the poliovirus in the French sewage and the risks involved. Some risks, such as those in the Dominican Republic and Haiti.<sup>23</sup> in that same year and in 2001, where an oral vaccine caused an outbreak of polio, as confirmed by ScienceXpress (*El Mundo*, 16-03-2002). It is noteworthy that all references of polio cases caused by the vaccine are backed with the signature of experts.

This important element of the persistence and outbreaks of poliomyelitis due to mutations of the virus (either the wild poliovirus or the vaccine virus) do not develop a reading that can taint the pro-eradication discourse: although the *El País* reported, on 12-10-2007, on a mutation of the virus in Nigeria, only the last article analysed in the *El Mundo*, a loose one which invites to further the information on the website of the newspaper, published on 29-09-2009, recognized one of the

---

22 Vigilancia de la Parálisis Flácida Aguda. Informes 2002–2012. Madrid: Centro Nacional de Epidemiología, 2009, 7.

23 Seytre, Bernard and Mary Shaffer, The death of a disease: a history of the eradication of poliomyelitis. New Brunswick, 2005.

problems: “since 2000 there have been 383 cases of polio caused by the vaccine in 11 countries.”

We can interpret that this theme is not coincident with the main axes of support to the eradication followed by newspapers analysed and that the dates of 2000 and 2005 as keys to get it will function as deterrents for the publishing of critical articles. The pro-eradication discourse of the early years, full of triumphalist optimism, silenced the reflections on the “collateral damages” of vaccination and, given the difficulties in achieving the goals of the WHO, the new discourse which held the Islamist anti-vaccination responsible for the failure only offered a monochromatic interpretation of the motives.

## The Personal Dimension

### *Gallery of Famous People with Polio*

Due to all that has been exposed, we can consider that polio in Spain and Portugal was associated with a distant and impersonal image, mainly consisting of numbers (of disease, of vaccine doses administered, of vaccinated children, of money invested or the need to achieve eradication). However, the strong imprint of the epidemics in the fifties survived in certain forms that show the lasting image of the polio created at that time.

The term poliomyelitis sometimes appears outside the health contexts to represent other ideas symbolized by polio, the most frequent of which are paralysis or immobility. One example for that is a sports article in which reference is made to a team that showed “superiority against an opponent with football polio and therefore limp since the race began” (*El Mundo*, 22-02-2004). This use of the term in one of the sections is interesting, that of sports, inasmuch as it is common to find references to athletes who suffered from polio. It is not only about the information on specific competitions and the Paralympic Games, but uses of another great stereotype of a person with polio as an example of continuous effort and overcoming difficulties. In this sense, the sports pages continuously associate Wilma Rudolph, Haile Gebrselassie or “Garrincha” who suffered from the condition and the tenacity with which they fought against adversity.

The pros and cons of praising effort, while standardization of a single desirable and possible principle for the social integration of people with polio sequelae, are unmasked in the use of language when referring to people. A comparison between the usage the two Spanish newspapers make of the words “discapacitado” (disabled) or “minusválido” (literally “with less value”, handicapped) when referring to people

with polio, shows that the first term is used most frequently by the *El País* (54.48% of the time compared to 49.51%), while the label of “handicapped” is used by the *El Mundo* in 83.02% of cases (compared to 61.90% of the *El País*). These differences in the implementation of the conventions of the “politically correct” language lead to the fact that the *El Mundo* even uses words like “diminished.”

The visibility of people who have had polio and had or have consequences arising therefrom, may be considered, according to the framing, in three different areas, but all of them defined according to the individual characterization, providing stereotypical features built in the collective imaginary surrounding the disease and those who suffered from it. The first scope and the more abundant one is that of celebrities in whose biographies the episode of having suffered from polio is constantly repeated. It is not only about the cases of Franklin D. Roosevelt or Frida Kahlo, but also a wide range of artists with not apparent polio sequelae, but for whom the condition is always associated with long time loneliness and isolation during their childhood, as well as personality traits which include a strong willpower, perseverance, the ability to overcome or the empathy for those who suffer. In some cases the predominant image is that of pain and suffering (the model of Frida Kahlo is reproduced in Chavela Vargas or Tanaquil Leclercq), in others that of overcoming it (the FDR model is shared primarily with athletes). Most notable is the absence of references to Portuguese or Spanish celebrities that had polio. We have only found a reference to the harm suffered by the singer Martirio (*El País*, 19-05-2002, 239) or a brief comment on the television comedian Mariano Mariano (*El Mundo*, 22-02-1997, 48); apart from the obituary of the music critic Gonzalo Badenes (*El País*, 22-09-2000, 40) or that of the writer Vicente Tortajada (*El Mundo*, 07-06-2003). This absence is not exclusively attributable to the press, but rather to the self-perception of those personalities about the stigma and discrimination from a hostile environment, which is common to others with minimal sequelae and greater integration capabilities that chose to disguise them and silence their origin.

The environment has hindered the personal and professional development of people with polio sequelae, far more when they are more severe, reducing the number of those who then achieve success. The media in Spain enable us to identify a second type that of people who are known for their activism in social movements associated to disability. In such cases we find that a significant proportion of its leaders were affected by polio, something consistent with the role that people with polio sequelae played during the Transition in the vindication of the rights of people of functional diversity.<sup>24</sup> In the Portuguese press there are only references to polio cases of celebrities, always foreigners, highlighting the main problem in the news agendas: the weak existing Portuguese association movement

---

24 Rodríguez, 2012.

was not been able to raise awareness in the media to include the issue in their agendas, which prevents the provision of information which allows the awareness of the problems caused by polio.

However, the third scope of the relation between celebrities in the media, and the affectation by polio, is a part of a style of articles which oscillate between the denunciation of social exclusion of the disabled and sensationalism, which is unevenly treated according to each newspaper. Here, the use of language, which we referred, is much more significant and polio sequelae are yet another element in the portrait of poverty and social exclusion.

One must mention polio as a feature of the person which it transcends due to the political use which the news agenda grants it. This is the case of a demonstration by the Asociación de Víctimas del Terrorismo (Association of Victims of Terrorism), in which a man suffering from polio participated in a wheelchair and was publicly accused by two socialist leaders to impersonate a victim of attack. The *El Mundo* repeatedly reported the case between 16-12-2006 and 14-02-2007, appearing in 16 entries, whereas in the *El País* we only find this reference once. This uneven use converts Joaquín Merino into the person with polio most quoted by the *El Mundo* about the origin of their disabilities, above FDR and Frida Kahlo.

### *The Post-Polio Syndrome (PPS)*

The invisibility of people with polio and the agenda of each newspaper are a vicious circle difficult to break and with serious consequences on misinformation of people with polio sequelae on the health problems they may face. In the reporting period, neither the *Jornal de Notícias* nor the *Público* dealt with the post-polio syndrome (with the exception of a reference in the *Jornal de Notícias*, in 2007) we have not been able to confirm its presence despite the existence of an association of people affected by the disease, the Associação Pós-Polio de Portugal (Post-Polio Association Portugal), which even held two meetings and published three books on the matter. Its short life (1998–2007) and its intervention scope too close to Évora minimized its influence and thwarted its attempt to incorporate the post-polio syndrome into the agenda of the Portuguese press.<sup>25</sup>

On the other hand, the Spanish newspapers analysed in this study provided the first reference to the PPS in 1997, in an article in which, for the first time, we can find the word in the Spanish press, in an entry: under the title “The benefits of the magnet,” the article focused on magnet therapy studies conducted by Carlos Vallbona, at Baylor College of Medicine, in Houston. The investigation had been conducted with patients of PPS and, of the three columns of the article, the journalist Myriam López Blanco spent one explaining what the disease was (*El*

---

25 Rodríguez, Ballester, Guerra, 2013, p. 251.

*Mundo*, 27-11-1997). The *El País* gave the same information in the following year (20-07-1998) and the *El Mundo* still continued to report the issue on two other occasions (16-06-1998 and 11-03-2000), the last one to mention studies which refuted the usefulness of therapy. The only other initial mention made to PPS in these year will be a reference to suffering by Arthur C. Clark (*El País*, 01-11-1999 and, belatedly, the only reference to PPS in the Portuguese press, in the *Jornal de Notícias*, in 2007).

Nevertheless, the references to post-polio syndrome are rare (only 21 in 15 years) and only from 2000 onwards is it located in Spain. *El País* doubles the number of entries regarding the *El Mundo* (15 versus 7) and when the subject is approached it usually is so extensively (7 articles compared to only 1 in the *El Mundo*, quoted on Vallbona, in the United States). We must also consider that the articles in the *El País* account for 50% of the references made to the PPS and almost 13% of all the articles on polio (Table 4).

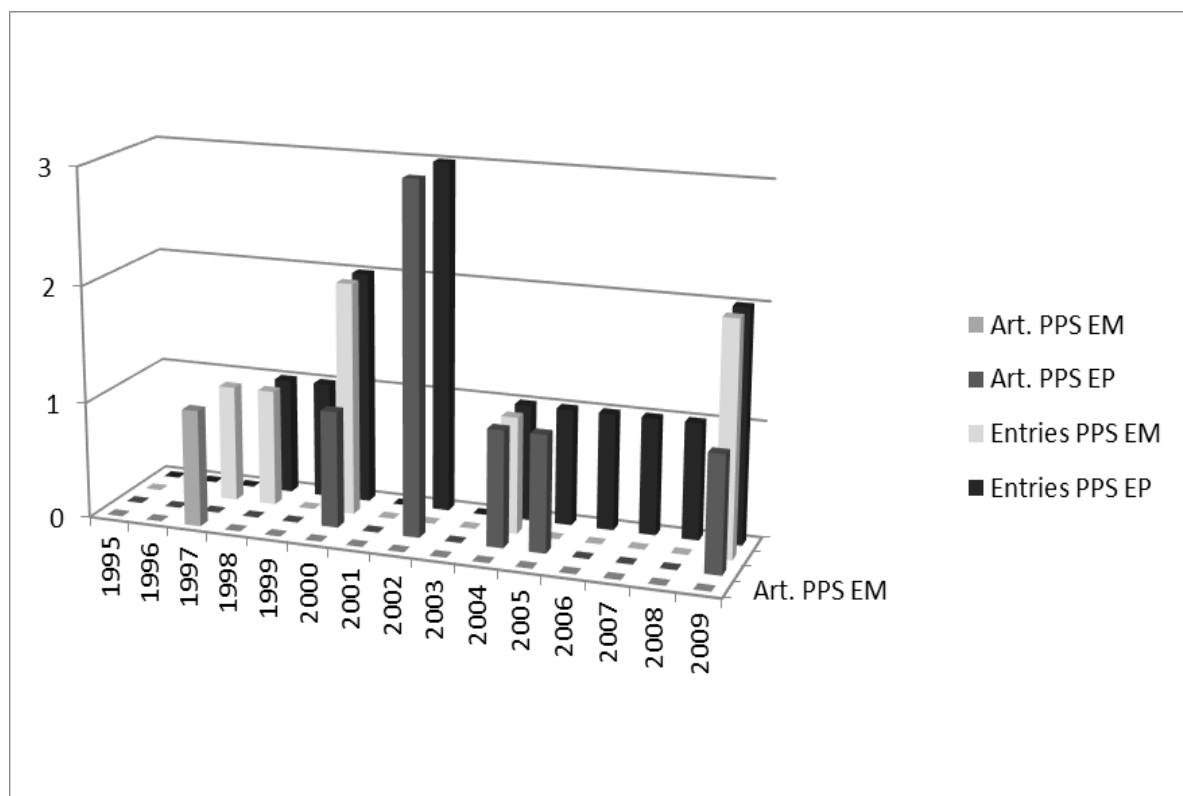
**Table 4.** Entries and articles about polio and PPS (1995-2009)

Año	Entries polio		Artículos polio		Entries PPS		Articles PPS	
	EP	EM	EP	EM	EP	EM	EP	EM
1995	35	23	5	1	0	0	0	0
1996	34	33	5	3	0	0	0	0
1997	26	29	3	4	0	1	0	1
1998	23	21	0	0	1	1	0	0
1999	33	35	1	1	1	0	0	0
2000	30	43	3	6	2	2	1	0
2001	25	20	2	5	0	0	0	0
2002	25	17	8	6	3	0	0	0
2003	26	29	4	2	0	0	0	0
2004	22	29	8	7	1	1	1	0
2005	27	42	6	6	1	0	1	0
2006	35	32	4	2	1	0	0	0
2007	21	35	2	2	1	0	0	0
2008	21	20	1	1	1	0	0	0
2009	14	18	2	5	2	2	1	0
<b>TOTAL</b>	<b>397</b>	<b>426</b>	<b>54</b>	<b>51</b>	<b>14</b>	<b>7</b>	<b>7</b>	<b>1</b>

Source: Authors' own elaboration based on *El País* and *El Mundo*.

Notwithstanding, the chronological distribution of these articles evidences that the attention they received was directly related to the informational interest aroused

**Figure 7.** Post-Polio Syndrome in *El País* and *El Mundo* (1995–2009)



**Source:** Authors' own elaboration.

by polio at certain times. This is the case of the year of 2002, the year in which more references and articles were published on the PPS, but also the year when the certification of polio eradication was obtained in the European region and the artificial virus was produced (Fig. 7).

In the seven pieces of information from the *El País* classified as articles, we considered how the PPS was presented, either with more emphasis on polio and presenting it as a result thereof or focusing on the PPS as a current problem. As the number of articles was so scarce, the determining factor seems to have been the journalist. The first articles, signed by Gabriela Cañas, focused on a dramatic image of the vengeful return of the virus: “The post-polio syndrome, the revenge of a virus that the world is about to eradicate” (07-03-2000) “The post-polio syndrome strikes the survivors 30 years later” (05-02-2002). A different view compared to the posterior articles by Emilio de Benito, focused on the claims of those affected, “Congress demands support for those affected by the post-polio syndrome” (19-03-2002), “A judge asks if there is negligence of the State in 36.000 cases of post-polio” (18-07-2005).

It is important to bear in mind this presentation of the syndrome by the effect it has on the readers, and especially on those with polio sequelae. Only the first article of Gabriela Cañas clarifies that not all people will suffer (and endorses this perspective with rehabilitation experts, such as Ana Águila Maturana), whereas the second one presents the PPS as inevitable. The ambiguity present in scientific

studies (thus, before a formerly described clinical entity, baptized in 1985, but only recently made official - in 2010 - there are no reliable case studies to enable a well-founded prognostic) offers a large margin for speculation, which consciously or unconsciously, is used ever since the association movement for its claims. Here, it is important to consider the context, since most of the articles on PPS will dispense the testimony of health professionals and will be based only on the number of people affected and one of their associations (the Asociación Afectados de Polio y Síndrome Post-polio, AAPSP, Association for the Affected by Polio and Post-Polio Syndrome), demanding judicial accountability by the State for the cases of polio that could have been avoided and those of post-polio that could have been assisted and criticises oral vaccination with attenuated virus.<sup>26</sup> Emilio de Benito renders account of the data provided by the association: facing the 30.000 affected by polio (according to the unreliable and incomplete official statistics of the Franco administration), the association sustains that there are 300.000 and applying the forecast of how many can come to develop PPS, it estimates there will be about 150.000, a figure which the journalist turns into subtitle of the article. Nevertheless, the report made by the Agencia de Evaluación de Tecnologías Sanitarias (AETS, Agency for Health Technology Assessment), following the contrast of varied databases, had ciphered, in 2002, the existence of 42.651 people in Spain with some degree of disability derived from polio sequelae, which enabled them – applying the wider ranking of prognosis for the appearance of PPS in people affected by polio (between 22% and 85%) – to estimate that, in Spain, there could be between 9.383 and 36.253 people with the syndrome.<sup>27</sup> These conclusions were presented in an article dated 30-07-2002, despite which the same article continues to include the figures estimated by the association, for anyone who had had polio but had not had paralysis may develop the dreaded PPS. Nevertheless, now in the headline the figures are those provided by the AETS.

It is interesting to contrast this framing of the *El País* with the one offered by the *El Mundo* for the first reference to the PPS at the national level, something which happens in the context of a comprehensive report on the eradication of polio in the world (*El Mundo*, 21-02-2004). The section is titled “Pain, fatigue and tiredness several decades after” and is signed by Isabel F. Lantigua, a reporter specialized in health matters. This fringe at the bottom of the page again is centred yet again on the information which comes exclusively from patients and specifically from the AAPSP. More cautious regarding the figures, the final reference in the report by

---

26 Rodríguez-Sánchez, Juan Antonio, “La persona enferma como experta: los cambios sociosanitarios promovidos por el asociacionismo polio-postpolio en España,” *Estudios do Século XX* 12 (2012a), 104–122.

27 Bouza Álvarez, Carmen , Ana Muñoz van den Eynde y José M<sup>a</sup> Amate Blanco, Síndrome post-polio:Revisión de la literatura, situación en España y posibles líneas de actuación. Madrid, 2003.



the AETS places the incidence between 10.662 and 36.253 affected. The perspective assumed by the journalist does not explore the past but focuses on the present and, specifically, on the problems arising from the lack of knowledge on polio and PPS by most health professionals, which makes the diagnosis harder to achieve.

This agenda and framing of the *El País* towards the PPS had another clear effect on the public agenda and, particularly, on those affected by polio as it promoted the active search for information through the associations. It is said that the articles, though rare, were widespread. All but one contained a photograph of the president of the AAPSPP, Lola Corrales, and in the first four there was the URL address and the phone number. The positioning of the newspaper in favour of associations is also seen through the endorsement of the “politics of numbers” used by the associations affected by diseases of low prevalence, presenting to the headlines higher prevalence estimations.<sup>28</sup> The effect on the public agenda was observed by the AAPSPP itself, because after each occurrence in the press they were contacted by people who thought they could suffer from the syndrome, according to testimony from the president herself. Thus not only is the power of the media agenda ratified, but also the strategies needed for the associations of those affected are shown in order to get the disease introduced.<sup>29</sup>

## Reality and News: Chronological Analysis

The lack of information about post-polio syndrome and the rare mentioning of the problems experienced by people with polio sequelae are not the only maladjustment between reality and what is considered news, and that which becomes part of the news agendas in Portugal and Spain. The evolution of the news during the period analysed reveals common trends, although with some variations according to the newspaper.

In some countries with no new cases of polio for more than some years, the international health agendas marked the Iberian news agendas. Therefore we can establish a separation into two periods, whose dividing date would be the year of 2000, a year full of symbolism and the first of those considered by the WHO as the year when polio would be eradicated from the world. In fact, both the entries and

---

28 Rabeharisoa, Vololona, Michel Callon, Angela Marques Filipe, João Arriscado Nunes, Florence Paterson and Frédéric Vergnaud, “From ‘politics of numbers’ to ‘politics of singularisation’: Patients’ activism and engagement in research on rare diseases in France and Portugal,” *BioSocieties*, 2014, 1–24, in <http://www.palgrave-journals.com/biosoc/journal/v9/n2/pdf/biosoc20144a.pdf> [12-06-2014]

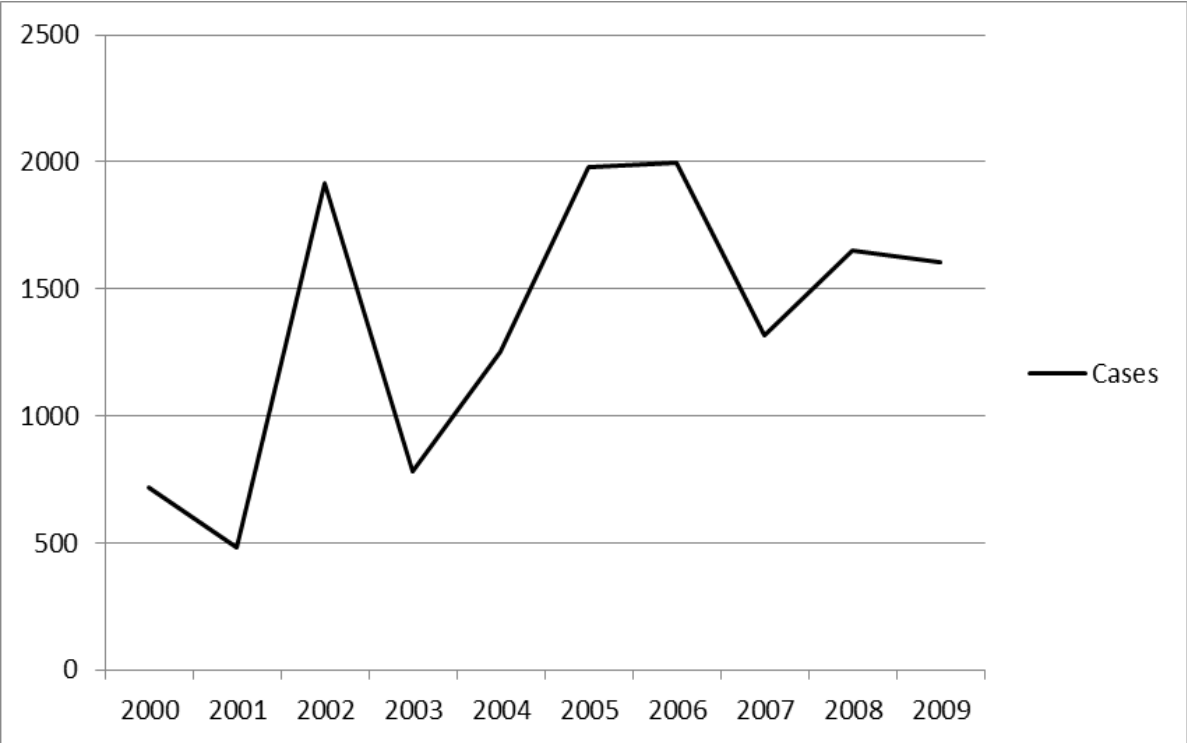
29 Talley, Colin, “The Combined Efforts of Community and Science: American Culture, Patient Activism, and the Multiple Sclerosis Movement in the United States,” pp. 39–70, in Randall M. Packard, Peter J. Brown, Ruth L. Berkelman and Howard Frumkin, eds, *Emerging Illnesses and Society: Negotiating the Public Health Agenda*, Baltimore, 2004.

the articles produced in this first phase are encouraged by the announcement by the WHO on this deadline for the eradication: in 1995, the WHO chose as motto for the World Health Day “A World Without Polio” and the following year the virology congress held in Toledo offered some titles to the press which occupied the front page of the *El País* in 13-05-1996 (“Polio and measles soon be eradicated worldwide”). Failing to announce eradication on the due date, the *El País* also turned into news the fact that “The poliovirus has disappeared from Europe” (*El País*, 26-12-1999), after one year elapsed with no cases reported in the European region. Meanwhile, the *El Mundo* put corollary to this first phase of optimism devoting a large report on polio in its supplement “El Cultural” of 12-04-2000, with two articles, one on “The End of Polio” and another on “New vaccines”, respectively signed by Jorge Alcalde and Carlos Marina López,

It is necessary to focus the analysis for this early period, in the Spanish case, on the articles, as the entries are increased by the announcements made by ALPE of their charities, which are repeated on successive days. However, both entries and articles evidence a marked decline in 1998, when no article on the subject is published. This seems to reflect how the information shown was connected to the campaigns by international organizations.

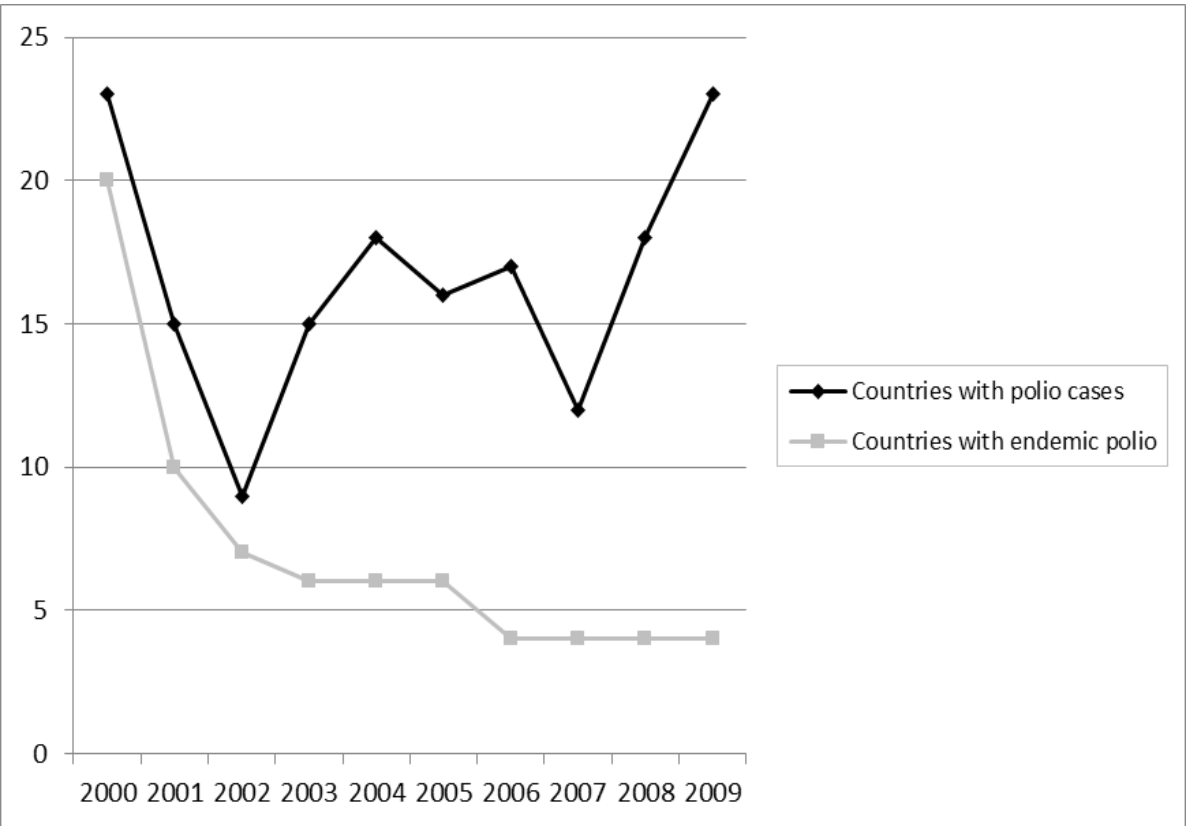
This relationship is clearer in the next period, marked by the failed first announcement of eradication in 2000 and a similar failure in the goal set for 2005. It is important to correlate the articles which the press dedicated to polio with three parameters which enable us to know what was happening with the disease, in the world: the number of reported cases, the number of countries reporting cases, many of them considered of endemic polio and finally how many of the cases reported did it in countries with endemic polio and how many in those where it was not. The following three graphs evidence such evolution.

**Figure 8.** Polio cases by wild poliovirus in the world (2000–2009)



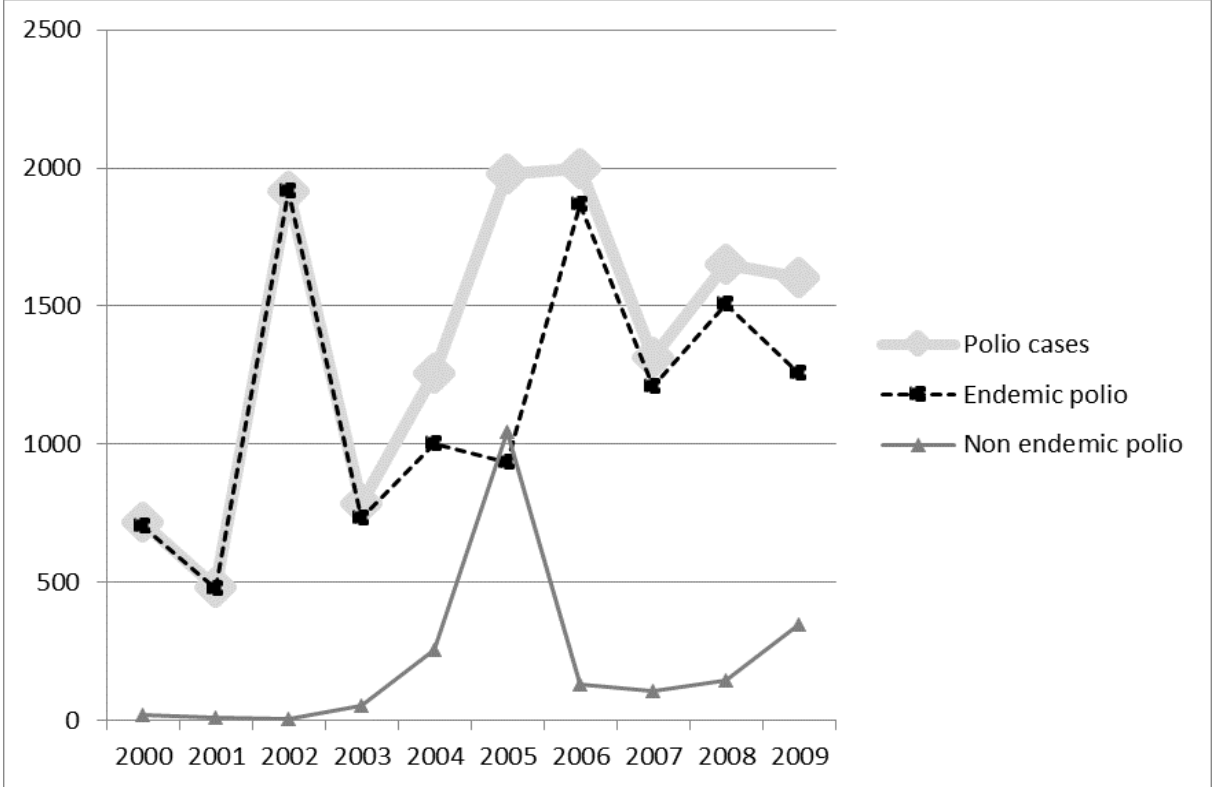
Source: Authors’ own elaboration based on Global Polio Eradication Initiative.

**Figure 9.** Polio cases in the world: endemic countries (2000–2009)



Source: Authors’ own elaboration based on Global Polio Eradication Initiative.

**Figure 10.** Polio cases in endemic and non-endemic countries in the world (2000–2009)

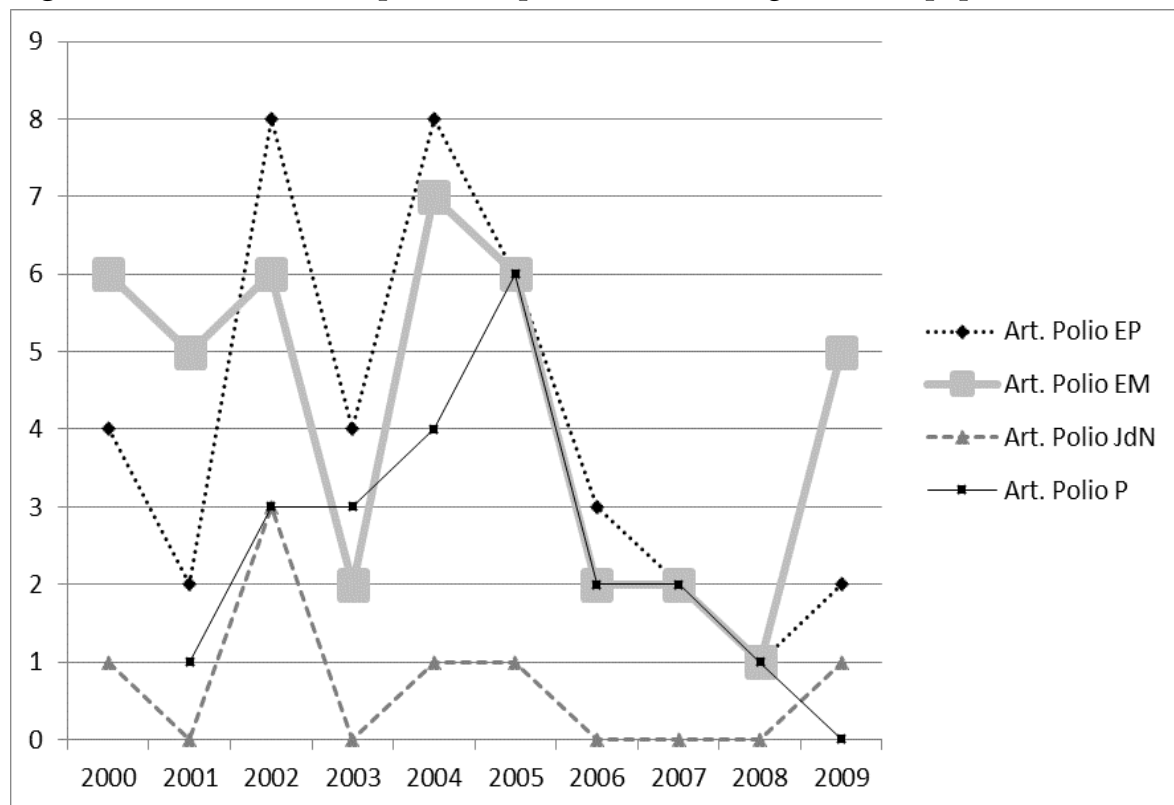


**Source:** Authors’ own elaboration based on Global Polio Eradication Initiative.

The year of 2002 represented an increase of cases of polio in countries where it was considered endemic, although the number of countries with polio cases was the lowest of the period, with only 9. That was a seeming paradox: the following year the number of polio cases worldwide decreased due to the vaccination campaigns carried out, but polio had spread to other non-endemic countries, in a process that continued until the end of the period, with the exception of 2007, ascending from 15 in 2003 to 23 countries in 2009 (Fig. 9). The number of polio cases managed to be reduced in 2007 and its growth was slowed down, minimizing its appearance outside the countries with endemic polio. Two dates are noteworthy: the high number of cases of polio in 2005 and 2006, noting that in 2005 there were more cases in non-endemic countries than in endemic ones and, above all, the situation in 2006. In 2006 the number of countries which declared polio increased and the highest number of polio cases (1.997) was registered, almost everyone in endemic regions where there was an alarming increase (Fig. 10).

These extremely discouraging figures on the chances of eradicating polio, no longer on the announced dates, but in a near future, were not reflected in the production of news, as shown in the chart below, but rather in the removal of the latter (Fig. 11). In fact, 2006 is one of the years with fewer articles, a coincidence verified in the four newspapers.

**Figure 11.** Articles about polio in Spanish and Portuguese newspapers (2000–2009)



Source: Authors' own elaboration.

The informative peaks of 2004 and 2005 are related, as did the prior in 2000, to the goal of eradication and the news agenda of the international organizations with a clear strategy of alternating alarms and triumphant hope. As an example we have the articles published in 2004 in which the WHO reported the largest polio epidemic in Africa, with an expansion into countries where it was eradicated (*Público*, 23-06-2004, *El País*, 23-6-2004, *El Mundo*, 24-06-2004), and only two months later, the optimistic headlines announcing the elimination in 2005 according to the same WHO (*Público*, 05-08-2004; *El Mundo*, 06-08-2004).

The informative peak of 2002, however, does not correspond with what might seem a priori, as the most important event: that of obtaining the certificate of polio eradication in the European region. It is true that the newspapers from both countries provided that piece of information on 22-06-2002 in the form of articles, but with no greater continuity in other articles or entries. The abundance of articles and entries in 2000 and 2002 had a close relationship with the aforementioned social alarms: in 2000 it was the relationship of the vaccine with the origin of HIV or with the transmission of “mad cow disease” and in 2002 the artificial synthesis of the virus in a laboratory and speculation about bioterrorism.

The striking increase in articles in the *El Mundo* in 2009 is apparent, since four of the five articles have been classified as such because they had the term polio in

the title or intro, although the content only tangentially relates to the object of study.

The evolution of information in the press about polio also offers, in the analysis of its contents (and silences), a chronicle of disappointment: with a marked optimism and confidence in the eradication which is held until 2005, the second failure means entering a phase of disinterest in the subject in which the reference to eradication is part of a stereotyped discourse. The minimal attention to late effects of polio in Spain and Portugal clearly shows the lack of interest and there is only a resort to the problem of PPS to build a comprehensive discourse and therefore subordinated to the ephemerids.

## Concluding Remarks

The disappearance of polio from the countries of the Iberian Peninsula, in the late eighties, led to an immediate and desired forgetfulness of the disease. For Portugal, polio cases were exceptional already in the decade of the seventies and for Spain they began to be so in the following decade. Polio and its sequelae were no longer on the agenda of the media to the point that the achievement of the certificate of polio eradication in the European region, granted by the WHO in 2002, had little impact in the newspapers of both countries, although this piece of news was placed in the article category and appeared simultaneously in all. But for those dates, the news about polio already had to include an explanation on what the disease was and what were its consequences.

This context led to the fact that information about polio came from other countries where they still continued to be produced and, therefore, the agendas of the analysed newspapers were directly related to the communication policies of international organizations fighting for the eradication of disease. Thus the international discourse about polio followed the guidelines of the reporting agencies of the WHO, with its messages of encouragement, hope, fear or disappointment, according to the evolution of morbidity worldwide. Therefore, polio became a disease of poor and distant countries from which it was possible to eradicate it through international cooperation and development programs. Until the beginning of the XXI century, the discourse of the media on polio was optimistic and confident in science and in the imminent eradication, a discourse which changed after the last missed deadline in 2005 and which transformed information on polio into a tell-tale silence, for the cases of polio in countries considered endemic remained a serious problem, despite the fact that the transmission to non-endemic countries diminished, which reassured Western countries and excluded the disease from the news agendas.

The global scope of the disease also shows different agendas in the two newspapers analysed. On the one hand, we find a different focus between the Spanish and Portuguese press on certain countries threatened by the spread of polio, this being greater in the Portuguese press and focused on the countries which were once colonies, especially Angola and Mozambique. This also explains their greater presence in the *Jornal de Notícias*, given its more popular character.

Furthermore, we also identified a different use of the discourse on polio in the world between the two Spanish newspapers that lead to the fact that the *El País* develops a discourse on the risk of expansion of polio as a metaphor for the threat of Islamic fundamentalism, a difference between the two Spanish newspapers coincident with their analysis on the Madrid terrorist attacks on May 11<sup>th</sup> 2004. Nonetheless, it is common for the considerations on the risks of each new outbreak of polio for the spread of infection to neighbouring and poorly immunized countries should turn into a veiled warning to the health risks of immigration.

Facing this focus on the global situation, polio in the countries studied was not given much attention, except to include it in the information on vaccination schedules. This dissociation of poliomyelitis in Spain and Portugal is undoubtedly connected to the disappearance of new cases, but it means that people affected and with paralytic sequelae, and even those who presented the so-called post-polio syndrome, are invisible. This is one of the major problems identified, as it establishes a vicious circle: post-polio syndrome is not reported because there are no diagnoses for it, leading to the affected people and the whole society to remain unaware of its existence and not to consider such a possibility. Let us consider that the PPS, like other rare diseases, force the patient (or their families) to acquire an active role in finding a diagnosis. In Portugal there was no news about the PPS (except for an occasional reference to it in the *Jornal de Notícias*), while in Spain, only the newspaper *El País* granted it some informative importance in those moments when polio was on the international agenda. Nevertheless, this fact allows us to understand the social role of the news agenda: the emergence of associations in the Spanish press influenced the agenda of a particular audience, that affected by polio, and strengthened its organization; however, the absence of the Portuguese association of PPS in the news agenda hid the movement, which led to the persistence of ignorance about the syndrome and, consequently, an extreme associative weakness. It is thus confirmed that the media (among other means of communication) determines the low relevance / importance that the public grants to the subject and determines the content of its thought.

This consideration of those affected also shows significant differences between the newspapers analysed, differences established through language that led to more often use of the word “inválido” (invalid) by the *El Mundo* or the fact that the *Jornal de Notícias* recurrently included references on the matters in sections dedicated to charity and validated the idea that a person with functional diversity

was a “poor needy”. Both Portugal and Spain are countries where the press has not local famous people who were affected by polio and the polio illustration gallery has always been foreign, depriving references and validating invisibility.

However, despite the passage of time, the silence and the imposition of oblivion, polio continued endowed with a great potential to raise fears and be associated with new types of threats, which led to the fact that informative peaks about it were related with events of international scope that could impact on the national one: the artificial creation of the virus and its potential applications for bioterrorism (a vision influenced by the proximity to September 11<sup>th</sup> 2001) and the risks of the vaccine due contamination or its composition (presence of mercury, contamination with SV40, prohibited bovine serum due to spongiform encephalitis or the denial of the origin of HIV). Nonetheless, although this traditional discourse on the risks and limitations of science can be a sponsor of Western anti-vaccination, a defence of the achievements predominates. The polio post-vaccine, the development of the virus of the vaccine in the environment and its implications for eradication are not given much attention, in a triumphant discourse in which polio is equated with smallpox, as a paradigm of the power of science in controlling the environment.

*Juan Antonio Rodríguez Sánchez* is Profesor Titular of History of Science at the Department of Biomedical and Diagnosis Sciences, University of Salamanca (Spain). *Inês Guerra Santos* is Professor Auxiliar at the Department of Communication Sciences and Information Technologies, Instituto Superior da Maia (Portugal).



## References

- Ballester, Rosa and María Isabel Porras, “La lucha europea contra la presencia epidémica de la poliomielitis: una reflexión histórica,” *Dynamis* 32(2) (2012), 273–285.
- Beale, A. John, “The Development of IPV,” pp. 179–187 in Stanley A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).
- Bouza Álvarez, Carmen , Ana Muñoz van den Eynde y José M<sup>a</sup> Amate Blanco, *Síndrome post-polio: Revisión de la literatura, situación en España y posibles líneas de actuación*. (Madrid 2003).
- Entman, R.M., “Framing U.S. coverage of international news: Contrast in narratives of the KAL and Iran air incidents,” *Journal of Communication* 41(4) (1991), 6–27.
- Entman, R.M., “Framing: Toward clarification of a fractured paradigm,” *Journal of Communication* 43(4) (1993), 51–58.
- European Centre for Disease Prevention and Control. “Risk of introduction and transmission of wild-type poliovirus in EU/EEA countries following events in Israel and Syria – updated risk assessment (9 december 2013). In [http://ecdc.europa.eu/en/publications/\\_layouts/forms/Publication\\_DispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113dbb90&ID=983](http://ecdc.europa.eu/en/publications/_layouts/forms/Publication_DispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113dbb90&ID=983) [15-01-2014]
- Gil Prieto, Ruth, “Evolución de los calendarios vacunales en España,” pp. 139–156 in Enrique Perdiguero Gil, Enrique and Josep M. Vidal Hernández, coords., *Las vacunas: historia y actualidad*. (Menorca, 2008).
- Guerra Santos, Inês, “A poliomielite em Portugal: o ‘Refúgio da Paralisia Infantil’,” pp. 177–194 in Dilene Raimundo de Nascimento, org., *A história da poliomielite*. (Rio de Janeiro, 2010).
- Hecht, Alana, *Polio*. (New York, 2009. 2nd ed.).
- Heras Salord, Jaime de, María Isabel Porras Gallo y María José Báguena Cervellera, “El drama de las víctimas de la poliomielitis visto por la prensa, por ellas mismas y sus contemporáneos,” pp. 170–192, in María Isabel Porras Gallo, Mariano Ayarza Güena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista*. (Madrid, 2013)
- International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10 Version: 2010), in <http://apps.who.int/classifications/icd10/browse/2010/en> [12-07-2012]
- Koprowski, Hilary and Stanley Plotkin, “History of Koprowski Vaccine Against Poliomyelitis,” pp. 155–166, in Stanley A. Plotkin, ed., *History of Vaccine Development*. (New York, 2011).

- W. Lippmann, *Public Opinion*. (New York, 1922).
- López Gil, Pablo, Miguel Otero Iglesias, Miguel Pardo Pereira y Miguel Vicente Mariño, dirs., *La imagen del mundo árabe y musulmán en la prensa española*. (Sevilla, 2010).
- McCombs, Maxwells, *Estableciendo la agenda: El impacto de los medios en la opinión pública y en el conocimiento*. (Madrid, 2006).
- McCombs, Maxwells, *A Teoria da Agenda: a mídia e a opinião pública*. Petrópolis, 2009.
- Nascimento, Dilene Raimundo do, Marcos Cueto, Eduardo Ponce Maranhão and Deepak Sobti, “A erradicação da poliomielite na América Latina: comparando Brasil e Peru,” pp. 161–176, in Dilene Raimundo de Nascimento, org., *A história da poliomielite* (Rio de Janeiro, 2010).
- R. Navarro García, dir., *Análisis de la sanidad en España a lo largo del siglo XX*. Madrid, 2002.
- Otero García, Laura, *Aproximación a las representaciones sociales sobre la salud de la población inmigrante en el discurso periodístico en prensa escrita española (2000–2006)*. (Madrid, 2011).
- Pinto, Sandrine Martins, Inês Guerra, Juan Antonio Rodríguez-Sánchez, João Rui Pita y Ana Leonor Pereira, “De las campañas de vacunación al calendario vacunal: el Programa Nacional de Vacinação portugués y las Campañas Nacionales de Vacunación Antipoliomielítica en España (1963–1976),” pp. 203–209, in Ricardo Campos Marín, Ángel González de Pablo, María Isabel Porras Gallo y Luis Montiel, eds, *Medicina y poder político*. (Madrid, 2014).
- Polio Global Eradication Initiative. *Plan Estratégico 2010–2012*. (Organización Mundial de la Salud, 2010).
- Rabeharisoa, Vololona, Michel Callon, Angela Marques Filipe, João Arriscado Nunes, Florence Paterson and Frédéric Vergnaud, “From ‘politics of numbers’ to ‘politics of singularisation’: Patients’ activism and engagement in research on rare diseases in France and Portugal,” *BioSocieties*, 2014, 1–24, in <http://www.palgrave-journals.com/biosoc/journal/v9/n2/pdf/biosoc20144a.pdf> [12-06-2014].
- Rodríguez-Sánchez, Juan Antonio, “Responsabilidades não assumidas: a poliomielite na Espanha (1954–1967),” pp. 195–224, in Dilene Raimundo de Nascimento, org., *A história da poliomielite*. (Rio de Janeiro, 2010).
- Rodríguez-Sánchez, Juan Antonio, “La persona enferma como experta: los cambios sociosanitarios promovidos por el asociacionismo polio-postpolio en España,” *Estudios do Século XX* 12 (2012a), 104–122.
- Rodríguez-Sánchez, Juan Antonio, “Las secuelas sociales de la polio: los inicios del movimiento asociativo en España (1957–1975),” *Dynamis* 32(2) (2012b), 391–414.

- Rodríguez-Sánchez, Juan Antonio and Jesús Seco Calvo, “Las campañas de vacunación contra la poliomielitis en España en 1963,” *Asclepio* 61(1) (2009), 81–116.
- Rodríguez-Sánchez, Juan Antonio, Rosa Ballester Añón and Inês Guerra Santos, “El movimiento asociativo: una perspectiva internacional, nacional y de los casos de Madrid, Valencia y Castilla – La Mancha,” pp. 233–257, in María Isabel Porras Gallo, Mariano Ayarza Güena Sanz, Jaime de las Heras Salord y María José Báguena Cervellera, coords., *El drama de la polio: un problema social y familiar en la España franquista*. (Madrid, 2013).
- Rogers, E. and J. Dearing, “Agenda Setting research: where has it been, where is it going?,” pp. 555–593, in J. Anderson, ed., *Communication yearbook II*. (Newbury Park, CA, 1988).
- Santos, João de Almeida, *Media e poder: O poder mediático e a erosão da democracia representativa*. (Lisboa, 2012).
- Severo, Bruna Meireles, *A Imprensa e seus efeitos sobre a audiência*. (Rio de Janeiro, 2007).
- Seytre, Bernard and Mary Shaffer, *The death of a disease: a history of the eradication of poliomielitis*. (New Brunswick, 2005).
- Smallman-Raynor, Mathew and Andrew D. Cliff, *Poliomyelitis: Emergence to Eradication*. (Oxford, 2006).
- Talley, Colin, “The Combined Efforts of Community and Science: American Culture, Patient Activism, and the Multiple Sclerosis Movement in the United States,” pp. 39–70, in Randall M. Packard, Peter J. Brown, Ruth L. Berkelman and Howard Frumkin, eds, *Emerging Illnesses and Society: Negotiating the Public Health Agenda*. (Baltimore, 2004).
- Vigilancia de la Parálisis Flácida Aguda. Informes 2002–2012. Madrid: Centro Nacional de Epidemiología.

## Acknowledgements

This work has been carried out within Project HAR2012-39655-C04-03 of the Spanish Ministry of Innovation, Economy and Competitiveness (MINECO) and SA359A12-1 (Junta de Castilla y León).



# Poliomyelitis vaccination campaigns in Brazil resulting in the eradication of the disease (1961–1994)

Dilene Raimundo do Nascimento

In 1994 Brazil received its certificate of poliomyelitis (polio) eradication. It was an achievement for the health sector that resulted not only in the eradication of a disease that caused great suffering throughout the lives of those who had it, but also contributed towards the development of a culture of preventing preventable diseases by immunization. The historical process of polio control and eradication clearly reveals the development and legitimization of national and international public health policies, the incorporation of new technologies, and medical practices and discursive constructions.

The aim here is to investigate the historical process concerning the policy for the control and eradication of polio in Brazil. Especially the vaccination campaigns held after the advent of the Salk and Sabin vaccines, and the National Vaccination Days, which constituted a model that was replicated in other parts of Latin America, resulting in the eradication of polio throughout the Americas. Another objective is to show that not only were these technologies prerequisites for the control and subsequent eradication of the disease in the country, but that political will and negotiation were also essential ingredients.

In the early twentieth century, developed countries with good sanitation conditions were struck by major epidemics of polio, posing a challenge to the prevailing view held by physicians and scientists that correlated the occurrence of infectious diseases with dirt<sup>1</sup>. Yet in the case of polio, poor sanitation and hygiene actually made it easier for children to come into contact with the virus at a very early age, when they developed the disease in its mild form, resulting in immunity. In the first years of life, infection rarely produced serious symptoms, and was often mistaken for a cold. The better the sanitation and living conditions, the later

---

1 Naomi Rogers. *Dirt and Disease: polio before FDR*. New Brunswick, NJ, Rutgers University Press, 1996.

children would come into contact with the virus and the higher their chances of developing paralysis<sup>2</sup>.

The poliomyelitis virus mainly infects children up to 5 years of age, and may be asymptomatic. However, in 1% of cases it causes the rapid onset of acute flaccid paralysis, generally of a lower limb, although it can also affect upper limbs and even the muscles used for breathing or swallowing, when it can lead to death. Difficulty standing and walking, muscle weakness, pain and fatigue are the most common complaints amongst children who have polio up to 5 years of age. The sequelae, mostly irreversible, tend to worsen with age.

Developed countries invested heavily in researching the disease and developing technologies to fight it<sup>3</sup>. According to Nascimento and Maranhão, “it came clear that the virus multiplied in the gastrointestinal tract and that infection could be transmitted by the fecal-oral route, meaning that it was transmitted by water or substances contaminated by feces and ingested orally.”<sup>4</sup>

Thanks to these discoveries and the use of new tissue culture techniques, the possibility of a vaccine became real<sup>5</sup>. In the 1950s two specific polio vaccines were produced: the Salk vaccine and the Sabin vaccine. By the mid-1960s, after these vaccines were approved in a process that involved intense debate to identify which one was more effective – to the point that one of the most heated topics at the 5<sup>th</sup> International Poliomyelitis Conference in Copenhagen on July 26–28, 1960, was the relative merits of these two vaccines<sup>6</sup> – the disease was no longer found in the countries where they were used *en masse*<sup>7</sup>.

In most industrialized countries that managed to obtain good immunization coverage using the Sabin and Salk vaccines, paralytic polio became almost unheard of. Some less developed countries, like Cuba and Costa Rica, managed to eliminate the disease by the end of the 1960s. In the U.S.A., the introduction of the Salk vaccine in 1955 resulted in a drop in the incidence of paralytic polio in the country,

---

2 Acute flaccid paralysis is the most characteristic clinical symptom of polio. In most cases, it affects the lower limbs. When it affects the chest muscles, it usually results in death because the patient is unable to breathe.

3 Naomi Rogers, 1996, op. cit.

4 Nascimento, Dilene R. and Maranhão, Eduardo P. “Uma gota, duas doses: Criança sadia, sem paralisia”, pp.229-241 in: Dilene Raimundo do Nascimento & Diana Maul de Carvalho, eds. *Uma história brasileira das doenças*. Brasília: Paralelo 14, 2004, p. 230.

5 Naomi Rogers, 1996, op. cit., p. 173; Nascimento & Maranhão, 2004, op.cit., p. 230.

6 *O Estado de São Paulo*, July 27, 1960, p. 9.

7 Robbins, F. C. The History of Polio Vaccine Development. In: Plotkin, S. A. & Orenstein, .W.A. (eds). *Vaccines*. Philadelphia: Saunders, 1999; Koprowski and Stanley, H. La histoire alternative de la vaccin oral. In: MOULIN, A.-M. (ed.). *La aventure de la vaccination*. Paris: Fayard, 1996.

and this trend continued as of 1963 when it was largely replaced by the Sabin vaccine. By 1969, only about a dozen cases were reported in the country.<sup>8</sup>

## Poliomyelitis in Brazil

In Brazil, although there are records of cases of polio in the last few decades of the nineteenth century, the literature indicates an increase in the number of observed cases in the early twentieth century. The first records of outbreaks in Rio de Janeiro are from 1909 and 1911, described by Fernandes Figueira, director of the Polyclinic for Children (Policlínica de Crianças) and a pediatrician at the National Hospice for the Mentally Ill (Hospício Nacional de Alienados) at the time<sup>9</sup>. A report by another physician, Francisco de Salles Gomes Júnior, describes an outbreak of polio in Vila Americana, São Paulo state, where 17 children were affected between January 1 and April 30, 1917. He observed that all the children were under 5 years of age and that the community could have been infected by people who had recently arrived from New York, where there were major epidemics between 1916 and 1918.<sup>10</sup>

In 1930, a number of sizeable epidemics were recorded in São Paulo and other state capitals in Brazil. As of 1950 outbreaks were also described in various towns in the interior of the country, and in 1953 Rio de Janeiro witnessed its biggest ever epidemic, at a rate of 21.5 cases per 100,000 inhabitants.

Brazil's polio records for the first half of the twentieth century are very sketchy, and are probably not a true representation of the magnitude of the problem there, since they were written sporadically by physicians based on their own observations. The disease was also not on the country's public health agenda. At this time, the only people discussing polio were medical professionals themselves, interested in understanding the scientific models that explained the disease and how it occurred in epidemics.<sup>11</sup>

---

8 Mackay H W, Fodor A R, Kokko U P. Viremia. Following the Administration of Live Poliovirus Vaccines. *AM J Public Health* 53:274, 1963.

9 Antônio Fernandes Figueira. *Doença de Heine-Medin no Rio de Janeiro*. Rio de Janeiro, Tipografia do Jornal do Comércio, 1911.

10 Francisco de Salles Gomes Júnior, *Epidemia de poliomyelite infantil em Villa Americana*. São Paulo, Serviço Sanitário do Estado de São Paulo/Officinas Gráficas Olegário Ribeiro, 1919.

11 André Luiz Vieira de Campos. A história da poliomyelite no Brasil antes da vacina: modelos, epidemias e dilemas. In: Dilene Raimundo do Nascimento (ed.). *A história da poliomyelite*. Rio de Janeiro, Garamond, 2010.

As of the 1950s, the acquisition of new technologies like the Salk and Sabin vaccines, the development of laboratory techniques for diagnosing the disease,<sup>12</sup> the definition of the concept and implementation of disease surveillance procedures,<sup>13</sup> and the design of vaccination strategies<sup>14</sup> shifted the focus of discussion to the arena of public health and enabled the implementation of policies for controlling the disease in the country.

As soon as the Salk vaccine was authorized in the United States (1955), some pediatricians and state and municipal health departments in Brazil started to apply the vaccine, in the latter case in small-scale immunization campaigns. In 1960 the Sabin vaccine was introduced to Brazil, and with it the debate already ongoing in the United States about the relative advantages and disadvantages of the two vaccines.

In May 1961, the Guanabara state health secretary, Dr. Marcelo Garcia, evaluated the new and revolutionary discovery for the fight against polio: the Sabin vaccine. While he claimed that the results obtained by this vaccine were more promising than those obtained by the Salk vaccine, Garcia was clear that it could not be used immediately in Brazil because “its application should be made *en masse* and all at once, which requires complex public health planning”.<sup>15</sup>

Various medical forums occupied themselves with discussing the two vaccines, especially the Brazilian Society of Pediatrics (Sociedade Brasileira de Pediatria) and the Brazilian Society of Hygiene (Sociedade Brasileira de Higiene).

A month earlier, the minister of health under the Jânio Quadros administration, Edward Catete Pinheiro, had set up a commission of leading physicians to give their opinion on the advantages and disadvantages of the two polio vaccines. Its members were: Joaquim Travassos, director of the Oswaldo Cruz Institute (Instituto Oswaldo Cruz); José Martinho da Rocha, professor of pediatrics at the University of Brazil (Universidade do Brasil); Paulo de Góes, professor of microbiology at the same university; Oswaldo Pinheiro de Campos, orthopedist; Madureira Pará, virologist; Bichat de Almeida Rodrigues, director of the National Health Department, and Álvaro Aguiar, chairman of the Brazilian Society of Pediatrics. The commission opted for the Sabin vaccine, citing its lower cost, ease of administration (oral), more prolonged protective effect, and capacity to multiply

---

12 Schatzmayr, Hermann et al. “Erradicação da poliomielite no Brasil: a contribuição da Fundação Oswaldo Cruz”. *História, Ciências, Saúde – Manguinhos*, vol.9(1) pp. 11-24, jan.-abr., 2002.

13 Thacker & Berkelman. *History of Public Health Surveillance*. In: *Public Health Surveillance*. Edited by William Halperin & Edward L. Backer Jr. Van Nostrand Reinhold, New York, 1992.

14 Risi Jr., João Batista. “Considerações sobre a consultoria prestada pelo doutor Sabin ao Ministério da Saúde – Esclarecimentos necessários em face das repercussões de seu afastamento”. Brasília, April 18, 1980.

15 *Correio da Manhã*, October 15, 1961, p. 3.



in the digestive system, enabling the elimination of the vaccine-derived virus in the environment.<sup>16</sup>

Following the commission's recommendation, the Ministry of Health officially adopted the trivalent oral vaccine of live attenuated strains of the virus – the Sabin virus – and started its campaigns for the immunization of children in a few municipalities in the states of São Paulo and Rio de Janeiro.

## Polio Vaccination Campaigns

In July 1961 a pilot experiment using the Sabin vaccine was run in three towns in the state of São Paulo – Santo André, São Bernardo and São Caetano – to vaccinate 25,000 children. A similar experiment was run in the city of Rio de Janeiro in September of the same year.<sup>17</sup>

“One drop, two doses: one healthy child free of paralysis” was the slogan under which the campaign was introduced to Rio de Janeiro. A total of 278 vaccination centers were set up throughout the city, manned by 2,500 volunteers and assisted by a variety of government and private institutions. The target was to vaccinate 500,000 children aged between four months and 6 years from October 16 to 21, 1961<sup>18</sup>. The campaign received daily coverage in the newspapers, which hailed it as a success and expressed the hope it would be made nationwide. They also reminded readers of the need for the children who received this first dose to take a second dose 60 days later to assure immunization.

Neither of these campaigns had the range or continuity needed to control the disease, mainly because of problems in the supply and distribution of the vaccines.

It was at this time that the laboratory technique for diagnosing polio was introduced to Brazil via the Oswaldo Cruz Institute – a technology of the utmost importance for obtaining a differential diagnosis from other forms of paralysis similar to acute flaccid paralysis, and for effectively diagnosing the type of virus and occurrence when there were outbreaks.<sup>19</sup>

Still in the 1960s, the concept of epidemiological surveillance was introduced. The main mentors and advocates of the power of surveillance as a public health tool were an American epidemiologist, Langmuir, and a Czech epidemiologist, Raska<sup>20</sup>. The World Health Organization (WHO) introduced the concept when, in 1965, it

---

16 *Correio da Manhã*, April 8, 1961, p. 3.

17 Cf. Nascimento and Maranhão, 2004, op. cit.

18 *Correio da Manhã*, October 15, 1961, p. 3

19 Schatzmayr, Hermann et al. “Erradicação da poliomielite no Brasil: a contribuição da Fundação Oswaldo Cruz”. *História, Ciências, Saúde – Manguinhos*, 9(1) pp. 11-24, jan.-abr., 2002.

20 Thacker and Berkelman, 1992

created an Epidemiological Surveillance Unit at the Division of Communicable Diseases. In Brazil, the Foundation for Special Public Health Services (Fundação de Serviços Especiais de Saúde Pública) created the Center for Epidemiological Investigations (Centro de Investigações Epidemiológicas) in 1968, making the notification of polio mandatory throughout the country.

Even after the acquisition of new technologies, the severity of the polio problem was yet to be overcome. It was known that only 1% of polio cases resulted in paralysis, but just one paralytic child implied high economic and social costs.

In 1971, after repeated outbreaks of the disease in different parts of the country, the Ministry of Health introduced the National Plan for the Control of Poliomyelitis, which was piloted in the state of Espírito Santo, then radiated out to 14 Brazilian states in 1972 and 1973. This was the first nationally coordinated attempt to control the disease in Brazil. It went on until 1974, when it was abandoned, and routine vaccination as part of primary healthcare was prioritized under the coordination of the National Immunization Program created in 1973.

This strategic shift was due to changes at the Ministry of Health. In 1974, under President Geisel, Paulo de Almeida Machado, from the Faculty of Public Health, University of São Paulo (Universidade de São Paulo), was appointed minister of health. His position was that the actions of health centers, routine health measures, and health education were the key to public health, and the campaigns were accordingly discontinued, and replaced with routine vaccination as part of the primary health system.

Epidemiological data indicate that routine vaccination was not enough to control polio, not least because most of the population did not have regular access to health services, which were unavailable in many parts of the country. In 1975, 3,600 cases of polio were notified – the highest incidence reported until then – and in the following four years there were outbreaks of the disease in almost every state of Brazil.<sup>21</sup>

## National Vaccination Days

It was only in 1980 that the Ministry of Health introduced a new strategy specifically for polio. In response to the seriousness of the problem in Brazil, which was even recognized in meetings held by the WHO to evaluate the disease in the Americas, and to the national repercussions of the epidemics in the south of the country in December 1979 – a region where high levels of vaccination were

---

21 João Baptista Risi Jr. “El control de la poliomiélitis en el Brasil”. In Simposio Internacional sobre el Control de la Poliomiélitis. Publicación Científica de la OPS N°484, pp. 147-151, 1985.

maintained – the newly appointed health minister, Waldir Arcoverde, decided to tackle the issue of polio in Brazil head on.

There were epidemics in the southern states of Paraná and Santa Catarina, and, contradicting the findings of Rosenberg<sup>22</sup>, who argues that the authorities tend to deny the existence of epidemics when they first break out, the Paraná state secretary for health, Oscar Alves, appeared on the television to announce that there was indeed an epidemic, attributing it to the negligence of the federal government. Shockwaves spread around the country at the tail end of 1979. In his analysis of this attitude, Risi<sup>23</sup> supports Rosenberg's position, saying that the Paraná state secretary for health "took an unusual political position; it would have been normal for the secretary to set up a campaign and say that the matter was under control."<sup>24</sup>

By this point in time, many epidemiological features of polio had already been studied – not just its spatial and temporal occurrence, but also other important variables such as age, prior vaccination status, type of poliovirus isolated, place of occurrence, and sequelae. It was clear that polio was endemic throughout Brazil, and was most common amongst unvaccinated children aged 0 to 4, and especially between 6 months and 2 years of age, who lived in urban areas, with the main cause being type 1 poliovirus.<sup>25</sup>

These elements formed the foundations for the approach to the disease in Brazil. The basic strategy was already drawn up in the early days of January 1980: blanket vaccination of children aged 0 to 5 over a short period of time across the entire country, twice a year.<sup>26</sup>

There was some resistance to this plan. At the time, a national public health reform movement was calling for more primary care, and considered the campaign strategy counterproductive in terms of awareness-raising and educating the population about their routine healthcare needs. Risi<sup>27</sup> comments that the WHO, which had held an international conference in Alma Ata, was also against the idea of a "national day," and Carl Taylor, a consultant in preparing the documents for this conference, was one of the strongest opponents. However, Brazil's military

---

22 Rosenberg, C. *Explaining Epidemics and Other Studies in the History of Medicine*. Cambridge, University Press, 1992.

23 João Baptista Risi Jr ran the National Secretariat for Basic Health Actions at the Ministry of Health, to which the vaccination program was linked.

24 João Baptista Risi Jr., testimonial, 2000. *Memória da poliomielite: acervo de depoimentos orais*. [ed.] Anna Beatriz de Sá Almeida, Dilene Raimundo do Nascimento, Laurinda Rosa Maciel. Rio de Janeiro, Fiocruz, 2005.

25 Risi, op. cit., 1980.

26 Roberto Becker, testimonial, 2002. *Memória da poliomielite: acervo de depoimentos orais*. [eds] Anna Beatriz de Sá Almeida, Dilene Raimundo do Nascimento, Laurinda Rosa Maciel. Rio de Janeiro, Fiocruz, 2005.

27 João Baptista Risi Jr, op. cit., 2000.

government was interested in adopting social policies to bolster its legitimacy, and lent the proposal its unconditional support.

The Ministry of Health invited Albert Sabin to advise the team on how to improve the intervention model, as this was the strategy he himself recommended when his oral vaccine was to be used with the purpose of eliminating polio from a country. However, after accepting the job in Brazil, he started questioning the epidemiological data the ministry gave him on the disease in the country, and proposed new research to identify the prevalence of sequelae in schoolchildren, which would mean examining 1.400.000 children to estimate the magnitude of the disease in the country and thence to define the best strategy to control it.

The ministry's specialists were convinced they had enough data to design a vaccination strategy, and also thought Sabin's proposal was unfeasible because it would demand considerable resources and time, delaying a particularly pressing measure.<sup>28</sup>

The unwillingness of the ministry to accept Sabin's advice led to a major falling out between the two parties, with Sabin withdrawing from the collaboration, resulting in considerable negative national and international repercussions for the ministry. Sabin wrote a letter to the president of Brazil, which was published in a mainstream newspaper, in which he stressed the need for accurate statistical data, since "as in military operations, imprecise information about the enemy can lead to disasters, with the same thing happening when one goes about fighting an epidemic disease".<sup>29</sup>

Waldir Arcoverde's position at the ministry was under fire, but he won the president's backing, who said that the "Sabin case [had] alerted the people" and "helped to raise social awareness about the problem of paralytic poliomyelitis and the need for mass vaccination."<sup>30</sup> Arcoverde also believed that ultimately much of the scientific community had had their pride wounded by Sabin's criticisms, and would end up supporting the government's program to control polio on its National Vaccination Days.

To get political support for these vaccination days, Waldir Arcoverde had made a speech to the Chamber of Deputies on April 23, 1980. He summed up the epidemiological status of polio, and provided justifications for the idea of holding national vaccination days, stressing that "data published by the WHO show that after India, Brazil is the country that recorded the highest number of cases of polio in the world between 1976 and 1978," and that a "detailed analysis of the data provided by the epidemiological surveillance system indicates that the occurrence of

---

28 Risi Jr., op. cit., 1980.

29 *O Globo*, March 28, 1980:14.

30 *Jornal do Brasil*, March 22, 1980, "1º Caderno" supplement.

poliomyelitis in the country will not be controlled if the only strategy is to maintain routine vaccination<sup>31</sup>.” Concerning the control of polio in Brazil, he explained that:

[t]he adoption of a special polio vaccination strategy, namely, to hold annual campaigns on set days, is founded on the following reasons:

- a) the administration of the oral poliomyelitis vaccine to the greatest possible number of children in the shortest possible space of time produces the extensive natural dissemination of the virus, which temporarily removes other enteric viruses capable of interfering in the multiplication of the vaccine-derived virus, hampering immune response to the vaccine;
- b) the mass dissemination of the vaccine-derived virus by vaccinated children will also tend to immunize unvaccinated children, and those who, on the campaign day, have an intestinal infection caused by an enteric virus capable of preventing the multiplication of the vaccine-derived virus;
- c) the administration of the Sabin vaccine does not require special techniques, and can be executed by any person from a community after receiving proper guidance;
- d) mass vaccination on a single day fosters the widespread use of community resources and the intensive participation of volunteers, reducing the operating costs of the program;
- e) broad-based community mobilization will enable the vaccination of larger numbers of children;
- f) the effectiveness of this strategy has been proven in other developing countries, where poliomyelitis has been controlled;
- g) the urgent need to control poliomyelitis deserves special attention by the public sector for reasons of a socio-economic order:
  - improved housing, hygiene and basic sanitation, typical of cities, may be a factor that limits the spread of the wild virus, and could help propitiate the appearance of large numbers of people susceptible to the virus, with a consequently increasing risk of outbreak of epidemics;
  - even in areas with precarious sanitation conditions, a high incidence of the disease has been reported, with occasional epidemics breaking out when these areas receive flows of migrants with high percentages of susceptible people;
  - the psychosocial impact caused by outbreaks of poliomyelitis is extremely harmful, in view of the dramatic nature of the disease;
  - the cases of paralysis generally have permanent sequelae and constitute a high burden on society, accounting for much of the demand for physical rehabilitation services.<sup>32</sup>

In the same speech, the minister reported on his difference of opinion with Sabin, concluding that “disagreements about the evaluation needs and the methodology

---

31 Exposição do Ministro da Saúde, Dr. Waldyr Mendes Arcoverde, na Câmara dos Deputados. Brasília, 1980, p. 3.

32 *Ibid.*, pp. 4-5.

used led to relations being severed. Dr. Sabin abandoned his consultancy for the Ministry of Health<sup>33</sup>.”

The first National Vaccination Day was eventually held in June 1980. According to Mozart Abreu Lima<sup>34</sup>, 20 million children were vaccinated. “The population was galvanized in mass; it was a celebration of Brazilian society.”<sup>35</sup> Consequently, the number of cases of the disease dropped sharply, from 1,290 in 1980 to 122 in 1981. The following year, the lowest ever number of confirmed cases of polio was reported: just 45. The National Vaccination Day strategy was repeated every year, and the number of cases dropped close to zero.

Public recognition of the National Vaccination Days was the ultimate approval of this strategy, which is still employed systematically in the country. In the 1980s and 90s – a period marked by political instability and administrative discontinuity with dire repercussions for the health sector – this strategy stands out as an exception.

It subsequently took on an international dimension when the Pan-American Health Organization (PAHO) recommended it as the model for interrupting the transmission of wild poliovirus in the Americas – i.e. the eradication of poliomyelitis in the whole continent.

## The Polio Eradication Process

In the field of public health, a number of different concepts of eradication have been debated. First contemplated in the nineteenth century as new scientific knowledge emerged about the causes and transmission mechanisms of different diseases, the term eradication has been given different definitions over time, leading Alfred Evans<sup>36</sup> to suggest that the real global eradication of notifiable diseases is more myth than reality.<sup>37</sup>

Another epidemiologist, Yekutieli, has proposed six preconditions for eradication programs: 1) control measure completely effective in breaking transmission, simple in application, and relatively inexpensive; 2) the disease should have epidemiological features allowing timely and effective case detection and surveillance in the advanced stages of the program; 3) the disease must be of

---

33 *Ibid.*, p. 9.

34 Mozart Abreu Lima was the general secretary of the Ministry of Health.

35 Mozart Abreu Lima, testimonial, 2002. *Memória da poliomielite: acervo de depoimentos orais*. eds Anna Beatriz de Sá Almeida, Dilene Raimundo do Nascimento, Laurinda Rosa Maciel. Rio de Janeiro, Fiocruz, 2005.

36 Alfred Evans is an epidemiologist at the Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, Connecticut, USA.

37 Evans, Alfred, “The eradication of communicable diseases: myth or reality?” *American Journal of Epidemiology*, 122(2), pp. 199-207, 1985.

recognized national or international socio-economic importance; 4) there should be a specific reason for eradication rather than control of the disease; 5) there should be sufficient financial and administrative capacity and health service resources; and 6) there should be the necessary socioecological conditions.<sup>38</sup>

In Evans's opinion, these preconditions did not apply to any disease at the beginning of the 1980s: while the global eradication of smallpox was hailed as a marvelous achievement, it could not apply to any other disease. Different specialists involved in the smallpox eradication campaign agreed with this view. The received opinion at the time was that important lessons could be learnt from the eradication of smallpox, but that these would not lead to another disease being picked for global eradication.

Donald Henderson<sup>39</sup>, who spearheaded the smallpox eradication campaign, did not believe polio could be eradicated because of two main issues: the difficulty of detecting the presence of the polio virus in a given region ("a patient with paralysis caused by polio is only the tip of the iceberg that is infection in the community"), and the fact that the polio vaccine may not be as thermostable as the smallpox one<sup>40</sup>.

Frank Fenner, an internationally renowned virologist and leader of the team that evaluated the smallpox program, commented in a speech about eradication in the early 1980s that "were this meeting to limit itself to other candidates for immediate global eradication, we might as well pack up and go home".<sup>41</sup>

However, at the PAHO and Unicef,<sup>42</sup> the need to bolster the credibility of immunization strategies was on the discussion agenda, building on the success of the global eradication of smallpox. The decision was therefore taken to eradicate polio in the Americas, since several countries had already had some success in its control. Uruguay, Chile, Venezuela and Argentina had all run vaccination campaigns in a short space of time, the Argentinean campaign being the largest, vaccinating 20 million children on each national vaccination day. Brazil, with its continental scale, had vaccinated 20 million children on each of its National Vaccination Days.

The repercussions of this achievement were great, not just for the impact on the incidence of polio in the country, but also because it showed the feasibility of the strategy of vaccinating the whole population on a single day, as expounded by

---

38 Yekutieli, P. *Eradication of Infectious Diseases. A critical study*. New York, Karger, 1980.

39 Donald Henderson ran the WHO's Smallpox Eradication Program from 1966 to 1977.

40 Donald Henderson. "Como é que a varíola mostrou o caminho". *A Saúde no Mundo*, Organização Mundial de Saúde, pp. 19-21, 1989, p.20.

41 Evans, op. cit., 1985, p. 204.

42 James P. Grant (1922-1995) became executive director of Unicef in January 1980. As of 1982 he was responsible for major investments by Unicef in its Universal Childhood Immunization program to fight what he called the "silent global emergency" that was the death of millions of children of preventable diseases.

Sabin. This reinforced the PAHO's decision to design a strategy for the disease in the whole of the Americas.

Having acquired "strong enough political will,"<sup>43</sup> the PAHO announced its target of interrupting the transmission of wild poliovirus in the Americas by 1990, disregarding the opinion of international authorities who had taken part in the smallpox program.

At the 31<sup>st</sup> meeting of the PAHO's Directing Council in September 1985, the member countries approved and committed to this initiative. In Brazil, breaking the transmission of wild poliovirus was included in the social priorities of Brazil's post-military government in 1986.

Although the modern concept of eradication<sup>44</sup> established at the 1<sup>st</sup> International Conference on Disease Eradication in 1980 implies a global reach, the controversies over the use of the concept persist, and the proposal to interrupt the transmission of wild poliovirus in the Americas, despite its regional footprint, came to be regarded as an eradication program.

As Moulin<sup>45</sup> explains, immunization is an extremely complex act, involving laboratories, the pharmaceutical industry, national and international policies, the perception of the disease to be prevented, rights and protection of liberties, among other aspects. The "adventure of vaccination" could not exist without political validation and the activation of a type of social compact.

And just such a compact was established between the PAHO, Unicef, the Inter-American Development Bank (IDB), USAID, Rotary International, and the governments of all the countries in the continent. The participation of international agencies was fundamental for the success of the proposal to eradicate the transmission of wild poliovirus in the Americas.

The role of Rotary International is particularly worthy of note in global efforts to eradicate polio. In 1985 it set up a program called Polio Plus to help with the immunization of all the children in the world, first until 2005, but since then until the disease has been wiped out. Not only is it the biggest non-governmental donor, but hundreds of thousands of its volunteers around the world have helped deliver the vaccines, mobilize society, and provide logistical planning. These voluntary efforts by Rotarians were extremely valuable in eradicating polio in the Americas.

In 1986, a working group for polio eradication was set up in Brazil, tasked with making vaccination coverage more efficient, improving the quality of the surveillance of the epidemiological behavior of poliomyelitis, and establishing

---

43 Evans, 1985, op. cit., p. 199.

44 "Eradication of an infection means that the infection has disappeared completely from all countries in the world because transmission of the causative organism has ceased completely." (Reviews of Infectious Diseases, 4(5), sept/oct.1982. p. 16).

45 Anne Marie Moulin (ed.) *L'Aventure de la vaccination*. Paris, Fayard, 1996.



whatever control measures were needed, with adequate oversight and evaluation processes.

The polio eradication program was built on two pillars: increasing immunization in order to attain and maintain high, homogeneous vaccination coverage (around 90%), and new or expanded disease surveillance activities and measures for controlling outbreaks.

In response to the cases it investigated and new clinical and epidemiological knowledge produced on the disease, the program reviewed and modified its surveillance concepts and methods. One new measure was to create clinical evaluation commissions of neurologists to identify cases of polio in the absence of stool samples.

In March 1989 the last case of wild poliovirus was notified in the country, in the municipality of Souza, Paraíba state.<sup>46</sup> As of 1990, while maintaining the strategies it had used thus far to eradicate polio, Brazil reoriented the program towards fulfilling the criteria established by the International Commission for the Certification of Poliomyelitis Eradication.

This commission convened in Washington in August 1994, where it declared that wild poliovirus transmission had been interrupted in the Americas. Polio had been eradicated from Brazil.

## Concluding Comments

While Brazil's polio vaccination campaigns failed to cover the whole country and to be run consistently without breaks, they were unable to control the disease in the country. The National Vaccination Day strategy proved an effective policy for fighting polio in Brazil with the objective of controlling it.

After the National Vaccination Days earned public recognition, they were employed as a strategy that has survived to this day. They acquired an international dimension when the Pan-American Health Organization recommended them as a model for interrupting wild poliovirus transmission in the Americas; i.e., the effective eradication of poliomyelitis in the region.

To eradicate the disease, sufficient political will was needed in intergovernmental negotiations to get all the stakeholders behind the idea of running an Americas-wide campaign. This immunization campaign was led by the PAHO in conjunction with Unicef, the IDB and Rotary International, and was showcased as an example of partnership between the public and private sectors and community engagement in public health activities.

---

<sup>46</sup> The last case of polio in the Americas was in Peru in June 1991.

The policy to eradicate polio from the Americas was a successful health strategy that involved the engagement of several sectors of civil society, and brought gains beyond the eradication of the disease, such as the strengthening of vaccination programs, which were expanded considerably and had new vaccines included, and the development of a culture of prevention in society.

*Dilene Raimundo do Nascimento*, is researcher and professor in the Graduate Program in the History of Science and Health at Casa de Oswaldo Cruz, Fundação Oswaldo Cruz.

## References

- Abreu, M. Lima, testimonial, 2002. *Memória da poliomielite: acervo de depoimentos orais*. eds de Sá Almeida, A. B., Nascimento, D.R. & Maciel, L. R.. (Rio de Janeiro, Fiocruz, 2005).
- Becker, R. testimonial, 2002. *Memória da poliomielite: acervo de depoimentos orais*. eds Anna Beatriz de Sá Almeida, Dilene Raimundo do Nascimento, Laurinda Rosa Maciel. (Rio de Janeiro, Fiocruz, 2005).
- Correio da Manhã*, October 15, (1961), p. 3.
- Correio da Manhã*, April 8, (1961), p. 3.
- Evans, A., “The eradication of communicable diseases: myth or reality?” *American Journal of Epidemiology*, 122(2), (1985), pp 199-207.
- Exposição do Ministro da Saúde*, Dr. Waldyr Mendes Arcoverde, na Câmara dos Deputados. (Brasília, 1980)
- Figueira, A. F., Doença de Heine-Medin no Rio de Janeiro. Rio de Janeiro, *Tipografia do Jornal do Comércio*, (1911).
- Henderson, D. “Como é que a varíola mostrou o caminho”. *A Saúde no Mundo*, Organização Mundial de Saúde, pp. 19-21, (1989), p. 20.
- Jornal do Brasil*, March 22, 1980, “1º Caderno” supplement
- Koprowski and Stanley, H. La histoire alternative de la vaccin oral. In: Moulin N, A.-M. ed. *La aventure de la vaccination*. (Paris: Fayard, 1996).
- Mackay H W, Fodor A R, Kokko U P. Viremia. Following the Administration of Live Poliovirus Vaccines. *AM J Public Health* 53(274) (1963).
- Moulin, A.M. (ed.) *L’Aventure de la vaccination*. (Paris, Fayard, 1996).
- Nascimento, D. R. and Maranhão, E. P. “Uma gota, duas doses: Criança sadia, sem paralisia”, pp.229-241, in: Nascimento, D.R. & Carvalho D.M. eds *Uma história brasileira das doenças*. Brasília: Paralelo 14, (2004), p. 230.
- O Estado de São Paulo*, July 27, (1960), p. 9.
- O Globo*, March 28, 1980:14.
- Risi Jr., J. B., “Considerações sobre a consultoria prestada pelo doutor Sabin ao Ministério da Saúde – Esclarecimentos necessários em face das repercussões de seu afastamento”. Brasília, April 18, (1980).
- Risi Jr., J. B. testimonial, 2000. *Memória da poliomielite: acervo de depoimentos orais*. (ed.) Anna Beatriz de Sá Almeida, Dilene Raimundo do Nascimento, Laurinda Rosa Maciel. (Rio de Janeiro, Fiocruz, 2005).
- Robbins, F. C. The History of Polio Vaccine Development. In: Plotkin, S. A. & Orenstein, W. A. eds. *Vaccines*. (Philadelphia: Saunders, 1999).
- Rogers, N.. *Dirt and Disease: polio before FDR*. New Brunswick, NJ, (Rutgers University Press, 1996).

- Rosenberg, C. *Explaining Epidemics and Other Studies in the History of Medicine*. (Cambridge, University Press, 1992).
- Salles Gomes Júnior, F. *Epidemia de poliomielite infantil em Villa Americana*. São Paulo, Serviço Sanitário do Estado de São Paulo/Officinas Gráficas Olegário Ribeiro, (1919).
- Schatzmayr, H. et al. “Erradicação da poliomielite no Brasil: a contribuição da Fundação Oswaldo Cruz”. *História, Ciências, Saúde – Manguinhos*, 9(1), 11-24, jan.-abr., (2002).
- Thacker & Berkelman. History of Public Health Surveillance. In: *Public Health Surveillance*. Edited by William Halperin & Edward L. Backer Jr. Van Nostrand Reinhold, (New York, 1992).
- Vieira de Campos, A.L. A história da poliomielite no Brasil antes da vacina: modelos, epidemias e dilemas. In: Nascimento, D.R. ed. *A história da poliomielite*. (Rio de Janeiro, Garamond, 2010).
- Yekutieli, P. *Eradication of Infectious Diseases. A critical study*. (New York, Karger, 1980).

# HYGIEA INTERNATIONALIS

An Interdisciplinary Journal  
for the History of Public Health

ISSN, Print: 1403-8668; Electronic: 1404-4013

