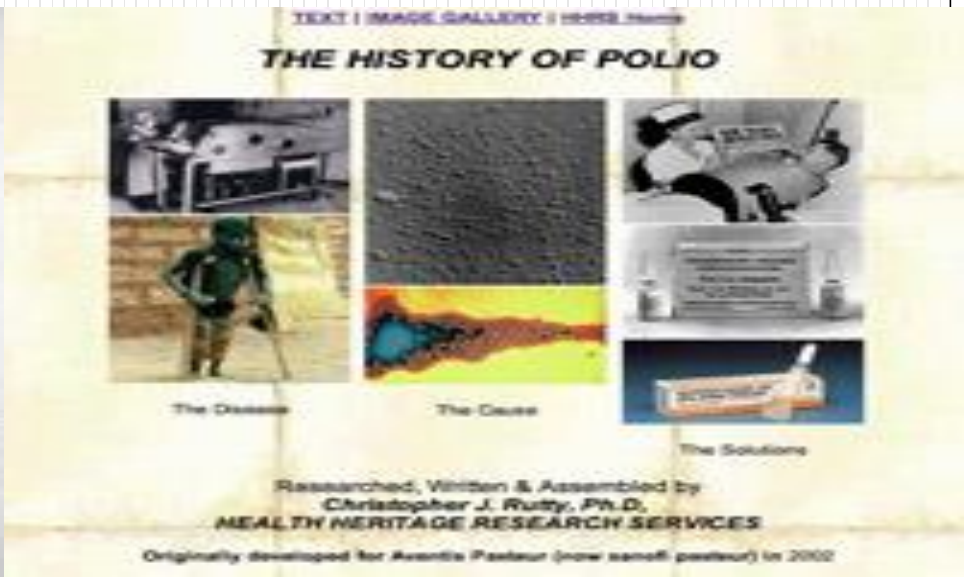
POLIOMIELITE: A História de uma doença

José M. D. Poças

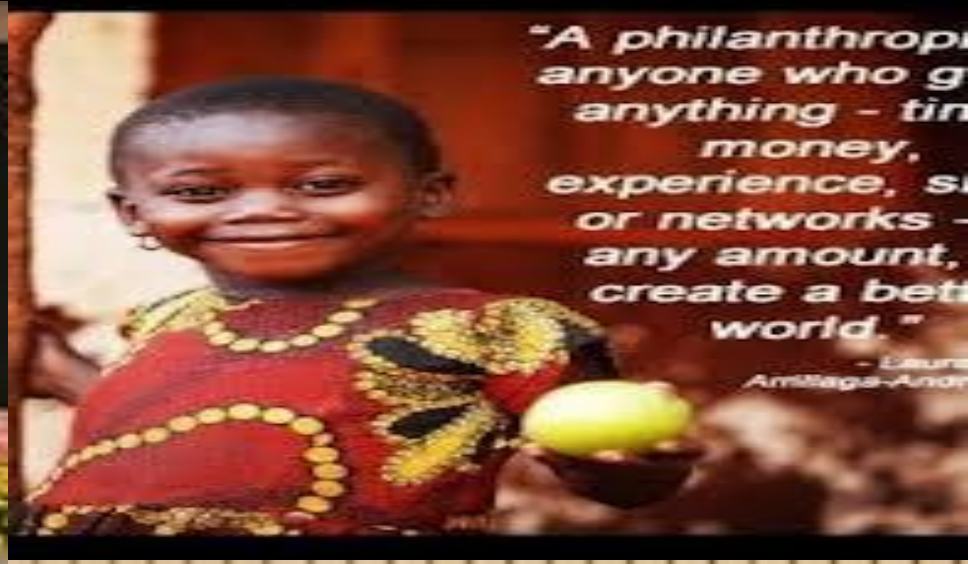
Médico Internista e Infecciologista




END POLIO NOW
Polio5060.com


KICK POLIO
OUT OF SIERRA LEONE
unicef


POLIO SUMMIT 2012
and Rotary International

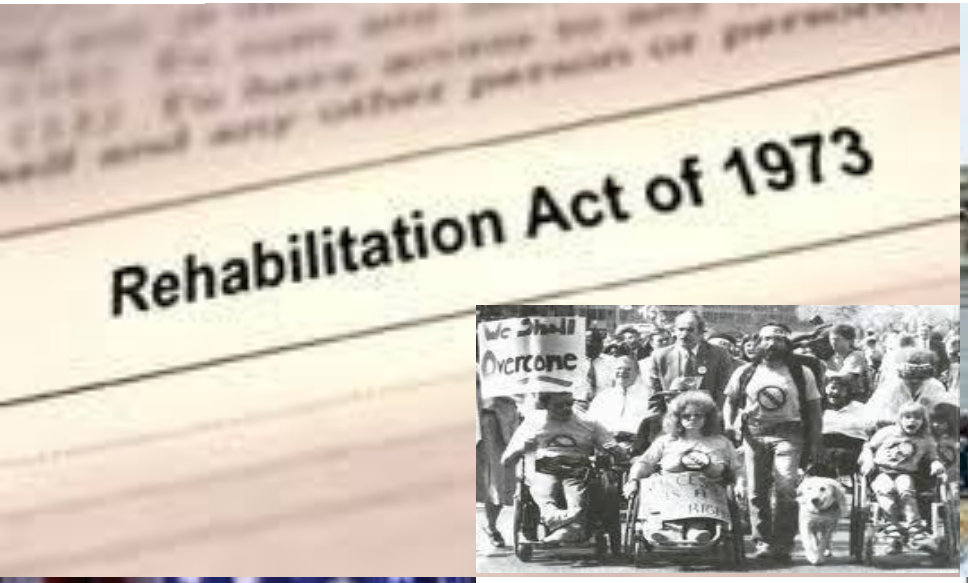

"A philanthrop
anyone who g
anything - tin
money,
experience, s
or networks -
any amount,
create a bet
world."

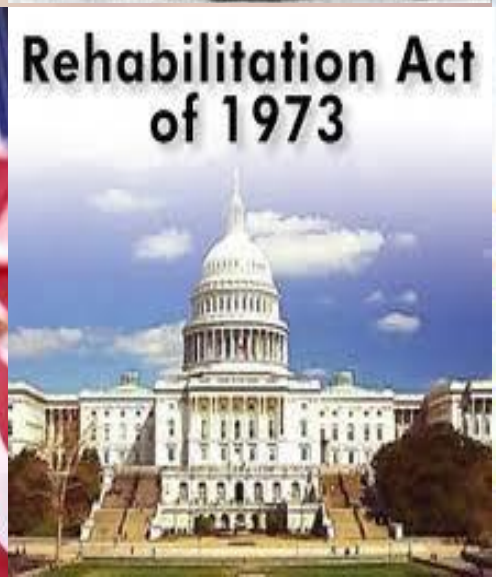

World Polio Day


POLIO SUMMIT

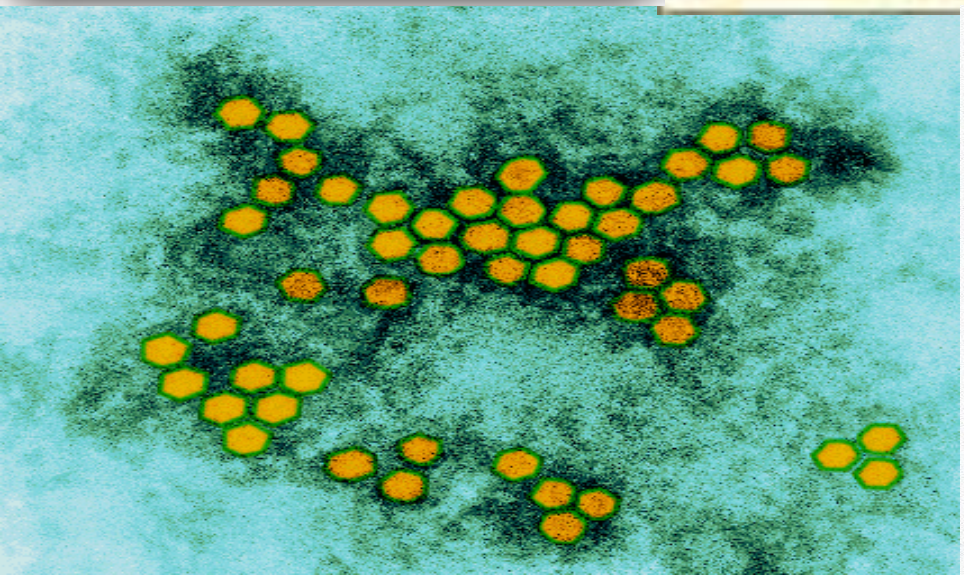
Your Rights as a Disabled Person

Luta contra a Discriminação nos EUA
Rehabilitation Act (1973), Disabilities Act (1990)





Descoberta do Vírus: 1909
Karl Landsteiner e Erwin Popper



TEM micrograph of poliovirus virions. Scale bar, 50 nm.

Virus classification

Group: Group IV ((+)ssRNA)
Order: *Picornavirales*
Family: *Picornaviridae*
Genus: *Enterovirus*

Type species

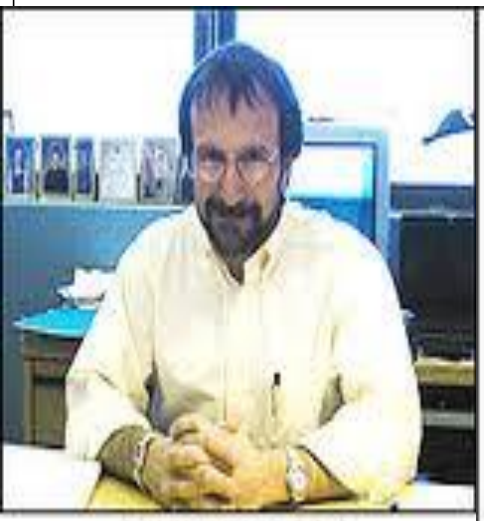
Human enterovirus C

Species

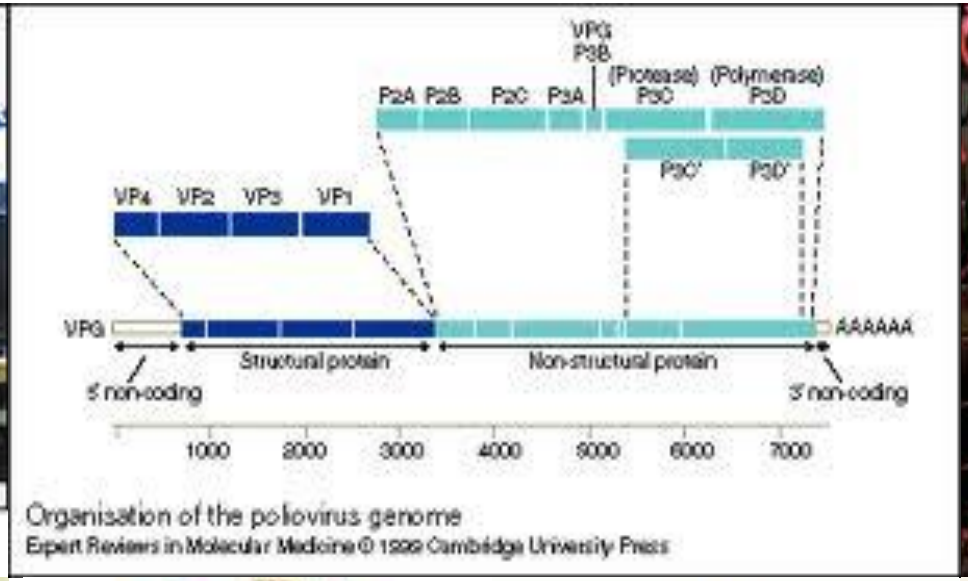
Human enterovirus C [1]

Descodificação do Genoma 1981

Vincent Racaniello, David Baltimore, Noami Kitamura e Eckard Wimmer

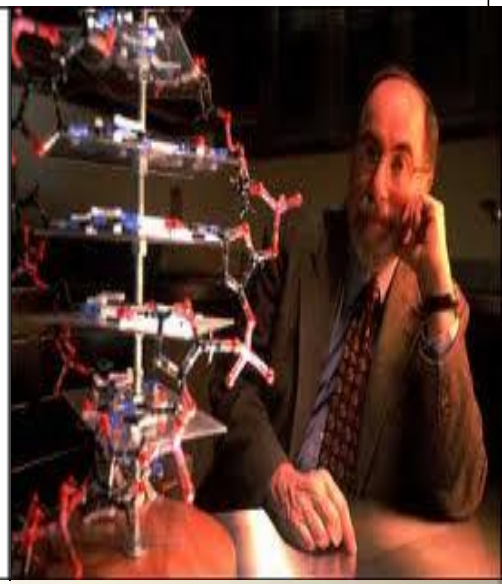


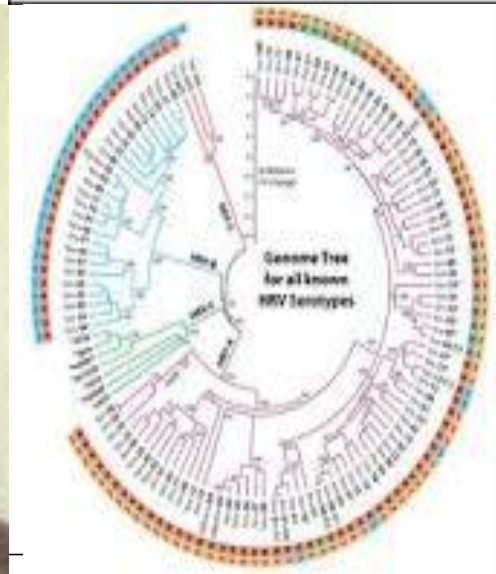
Vincent Racaniello

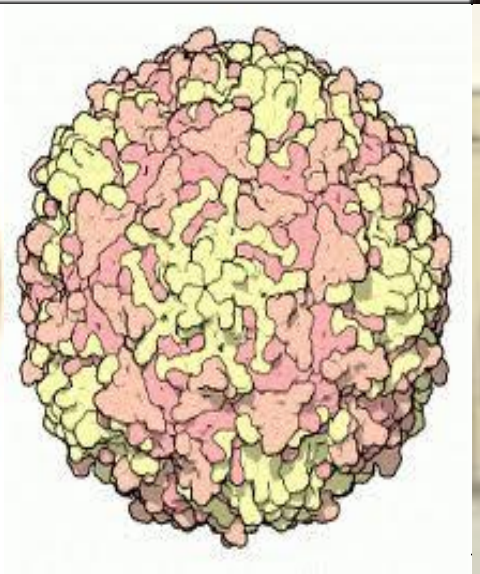


Organisation of the poliovirus genome

Expert Reviews in Molecular Medicine © 1999 Cambridge University Press



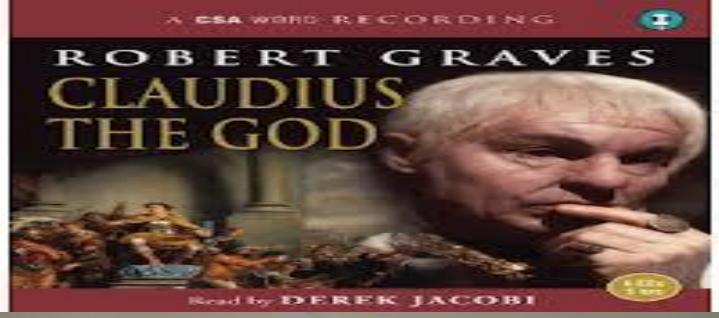




MEDICINE IN ANCIENT EGYPT

From the Period of the Old Kingdom to the New Kingdom(c. 2575-1070B.C)

Tamara T. Myers
Ancient Near East Religion, 2001



ANTERIOR POLIOMYELITIS!

INFANTILE PARALYSIS

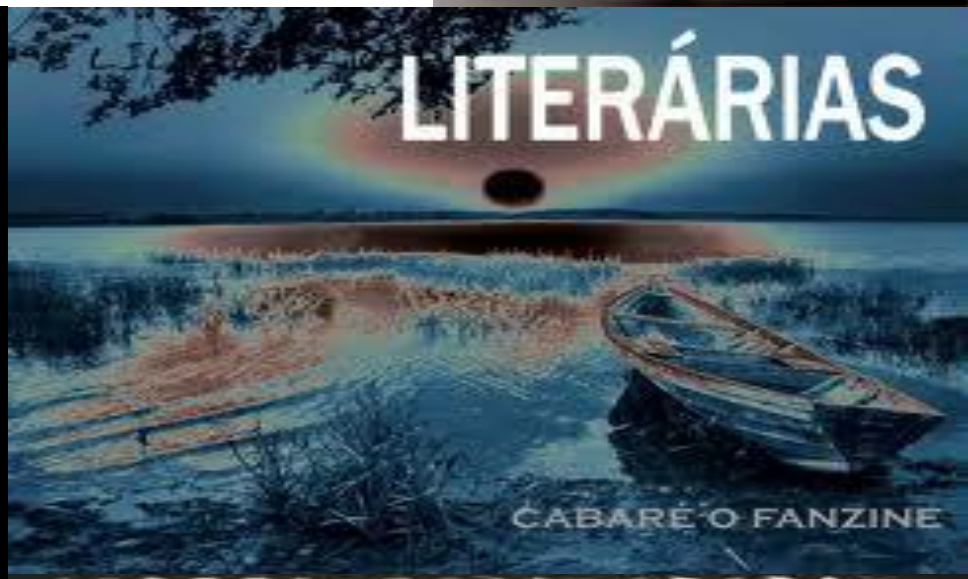
"Act of Assembly approved May 14, 1909, provides that anyone violating the provisions of this Act, upon conviction thereof may be sentenced to pay a fine of not less than $10.00 or more than $100.00, to be paid to the use of said county, or to be imprisoned in the county jail for a period of not less than ten days or more than thirty days, or both, at the discretion of the court."

BY ORDER OF THE BOARD OF HEALTH.

Health Officer.

Address.

Primeira Referência Literária Heinrich Heine (1840)



Karl Oskar Medin: Quadro Clínico (1890)

Prof. Medin ute för olycksfall.

Prof. O. Medin, som för närvarande vistas vid badorten Spa i Belgien, har vid en promenad afbrutit en af benpiporna vid fotleden. Prof. M. har med anledning däraf nödgats intaga sängen och torde bli förhindrad att röra sig fritt.

Telegram har därför ingått, att prof. M. ej kan fullgöra det uppdrag, han erhållit att såsom regeringens ombud deltaga i internationella tuberkuloskonferensen i Bruxelles i början af okt.

Fisioterapia (1940)

John Haven Emerson, Philip Drinker Agassiz Shaw e James Wilson (1928)


SALK'S VACCINE WORKS!
THE POLIO CRUSADE
POLIO ROUTED!

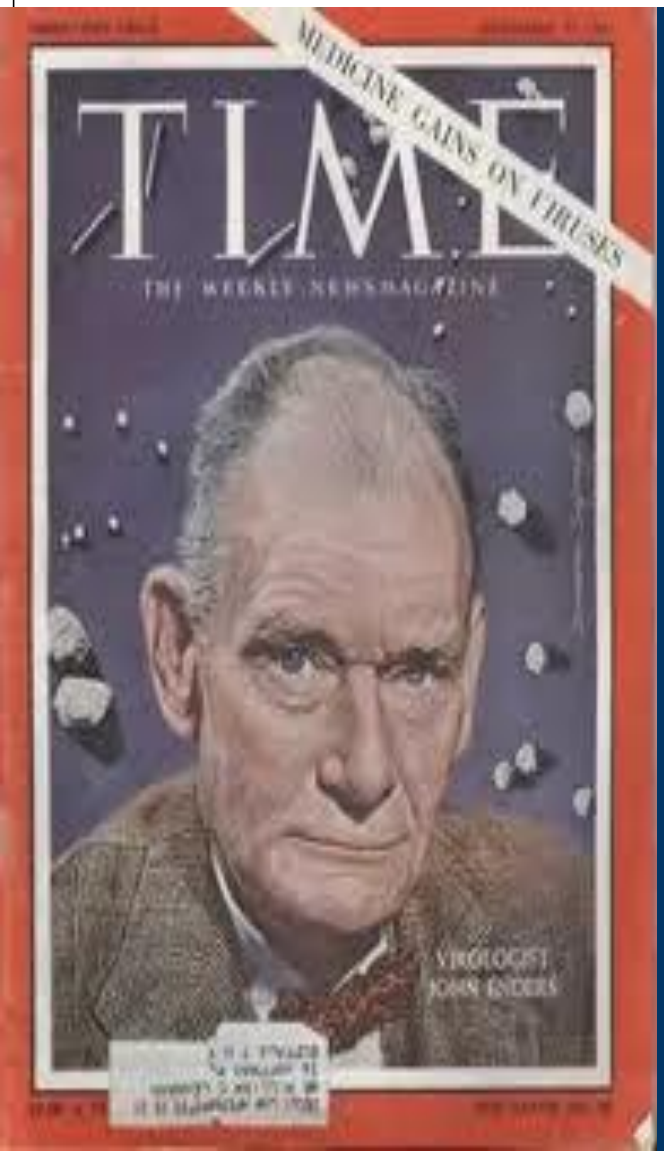
William Hammon
Imunoterapia Passiva (1950)

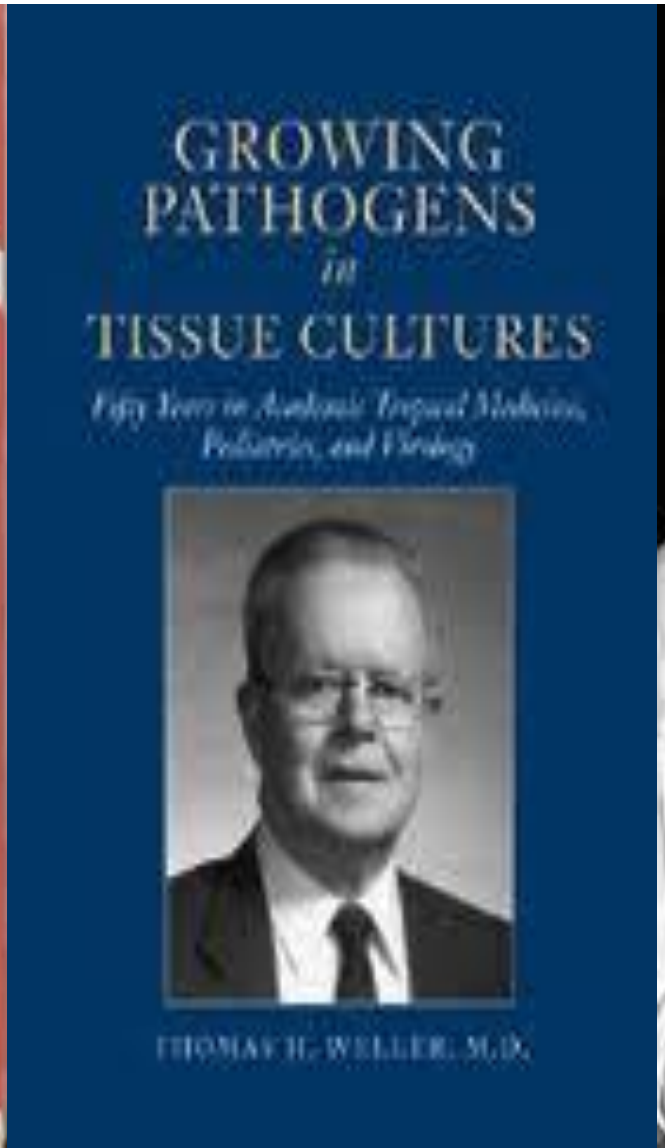
1ºs Protótipos da Vacina:
Brodie (1936) John Kolmer

Mau

Vacina (1940-1950)Prémios Nobel (1954)

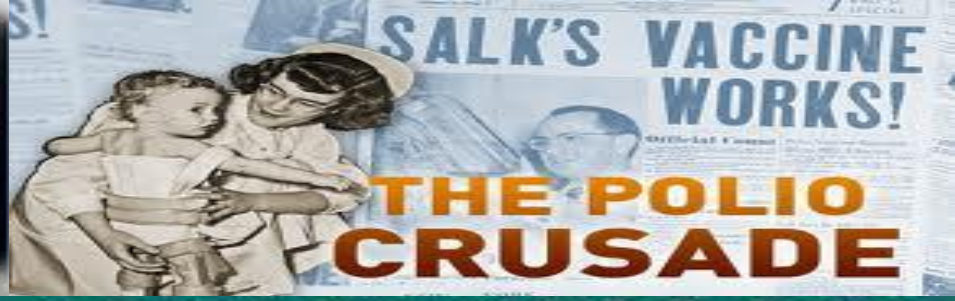
John Enders, Thomas W. Weller e Frederick C. Robbins

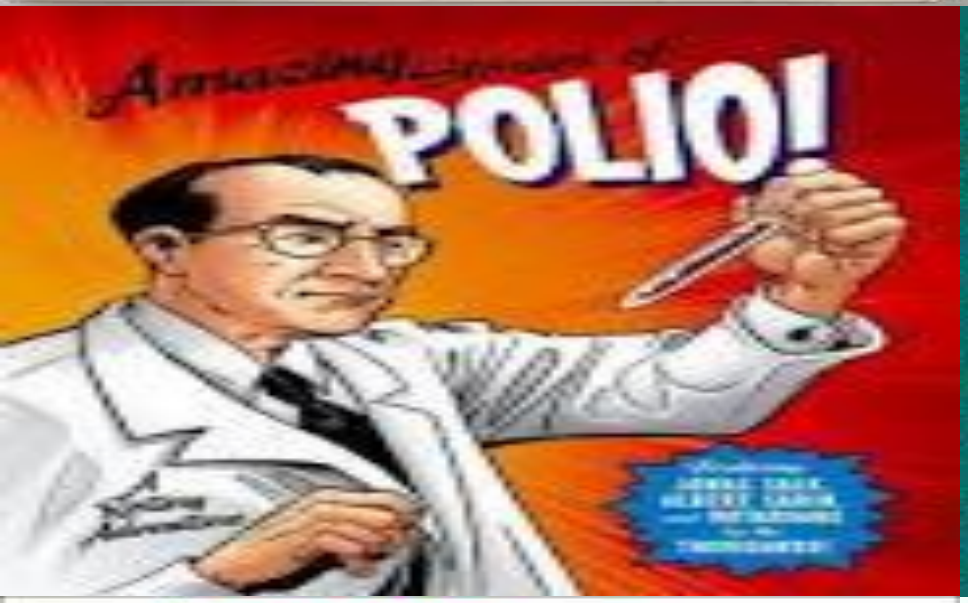




IPV (1952-1957) Jonas Salk
OPV (1957-1962) Albert Sabin


THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS
CERTIFIES THAT
HAS BEEN ENROLLED AS A
POLIO PIONEER
and this certificate of membership is
hereby presented for taking part in the first national tests
of a trial polio vaccine conducted during 1954.
PRESIDENT


SALK'S VACCINE WORKS!
THE POLIO CRUSADE

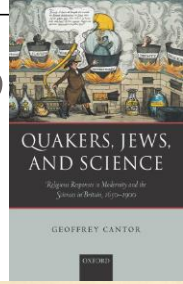

Amazing Cures of
POLIO!


भारत INDIA
300
PULSE POLIO IMMUNIZATION
पल्स पोलियो प्रतिरक्षण


"Wellbee" says
BE WELL!
take
ORAL
POLIO
VACCINE
• tastes good
• works fast
• prevents polio


All Local Teams Are
Journal American
7
SALK'S VACCINE WORKS!
Official Count
All Local Teams Are Ruled Out

“A dissertation on the method of inoculating the small-pox” by *Jacob de Castro Sarmento* (1721)



DO
USO, E ABUSO
DAS MINHAS
A G O A S
DE
INGLATERRA,
OU
DIRECTORIO, E INSTRUCCAM.
PARA
Se saber seguramente, quando se deve, ou
não, obrar dellas, assim nas enfermidades agudas;
como nas algumas chronicas; e em casos propria-
mente de Cirurgia:
Pello Inventor das mesmas Agoas,
J. De CASTRO SARMENTO,
Doutor em Medicina, do Collegio Real dos
Medicos de Londres, e Socio da
Sociedade Real.
Impresso em Londres,
Em Casa de Guilhermo Strahan.
No Anno MDCCLVI.

THE ROLL
OF THE
ROYAL COLLEGE OF PHYSICIANS
OF LONDON;
COMPRISING BIOGRAPHICAL SKETCHES
OF ALL THE EMINENT PHYSICIANS, WHOSE NAMES ARE RECORDED IN THE ANNALS,
FROM THE FOUNDATION OF THE COLLEGE IN 1518 TO ITS REMOVAL
IN 1825, FROM WARWICK LANE TO PALL MALL EAST.
By WILLIAM MUNK, M.D., F.S.A.,
FELLOW OF THE COLLEGE, ETC., ETC., ETC.

SECOND EDITION, REVISED AND ENLARGED.
VOL. III., 1801 TO 1825.
LONDON:
PUBLISHED BY THE COLLEGE, PALL MALL EAST.
MDCCCLXXVIII.
[*All Rights reserved.*]

NUGÆ CHIRURGICÆ;
OR, A
BIOGRAPHICAL MISCELLANY,
ILLUSTRATIVE OF A COLLECTION
OF
Professional Portraits.
By WILLIAM WADD, ESQ. F.L.S.
SURGEON EXTRAORDINARY TO THE KING,
FELLOW OF THE ROYAL COLLEGE OF SURGEONS, LONDON,
AND OF THE SOCIETÉ DE MÉDECINE, PARIS.
London:
PRINTED BY JOHN NICHOLS AND SON, 25, PARLIAMENT STREET;
AND SOLD BY
LONGMAN, HURST, REES, ORME, BROWN, AND GREEN, PATERNOSTER ROW;
AND CALLOW AND WILSON, PRINCES STREET, SOHO.
1824.

GRAMMATICA
LUSITANO-ANGLICA,
OU
PORTUGUEZA, E INGLEZA,
A qual serve para instruir aos Portuguezes
no Idioma Inglez;
COMPOSTA
POR
JACOB DE CASTRO.
LISBOA.
Na Offic. de Manoel Coelho Amado.
ANNO M.DCC.LXXVII.
Com licença da Real Meza Censoria.

ROLL
OF THE
ROYAL COLLEGE OF PHYSICIANS
OF LONDON.

THOMAS ARCHIBALD MURRAY, M.D., was born in Norwich, and was the son of Dr. John Murray, one of the leading physicians in that city. After a good preliminary education at the grammar school of North Walsham, he commenced the study of medicine at the Norfolk and Norwich hospital, under the direction of his father, who was one of the physicians to that institution. He then passed three years at Edinburgh, where he graduated doctor of medicine 4th June, 1796 (D.M.I. de Phænomenis et Natura Morbi ex Submersione oriundi). The ensuing winter he spent in London, attending the hospitals, and more particularly the practice of Dr. Willan at the Public dispensary. In July, 1797, he commenced business at Norwich, but in January, 1800, on the recommendation of Dr. Willan and some other friends, removed to London, and was forthwith elected physician to the Public dispensary. Dr. Murray was admitted a Licentiate of the College of Physicians 5th June, 1801. "This active, intelligent, and promising physician, through whose exertions, aided by the Society for bettering the Condition of the Poor, the London Fever Hospital was established, and to which he was nominated physician, was unfortunately cut off by fever, caught from the first patients admitted into the institution." Dr. Murray died at his house in Gre-

34

CASTRO, DE, SARMENTO, M.D.
Pine pinx. *Houston sc.*
He separated himself from the community of the Jews, by a letter which he wrote to the Elders of the Synagogue.
Gent. Mag. vol. xxviii. 501.

CENE, LE, M.D.
F. M. de Cave sc.
Born at Caen, died in London 1703.

CELSUS.
Mirabilis in Omnibus.
Wood cut.

CHAMBRE, JOHN, M.D.
Died 1549.
He is principally remarkable for being first named among the King's Physicians, as a petitioner for the foundation of the College of Physicians.
Hutchinson.

CHAMBERS, B. L.
Holbein.

CHAMBERLIN, PAUL, M.D.
R. White del. *S. Trotter sc.*
From an Original Drawing 1655.

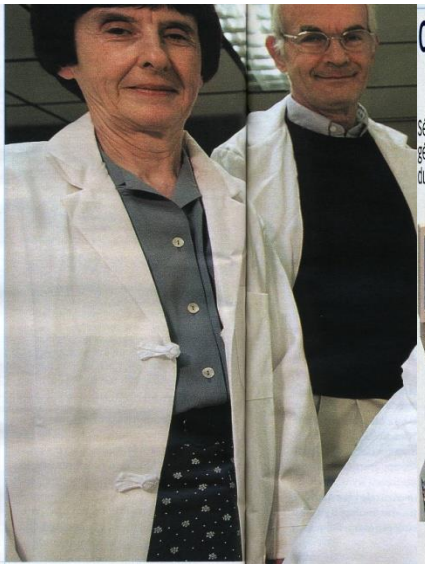
CHANSEL, CLAUDE, M.D.
T. Mariette, 1679.

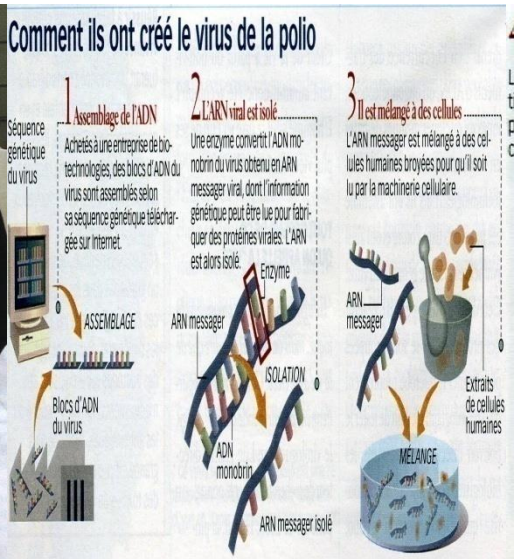
As Vantagens e os Perigos da Tecnologia Científica (1982)...

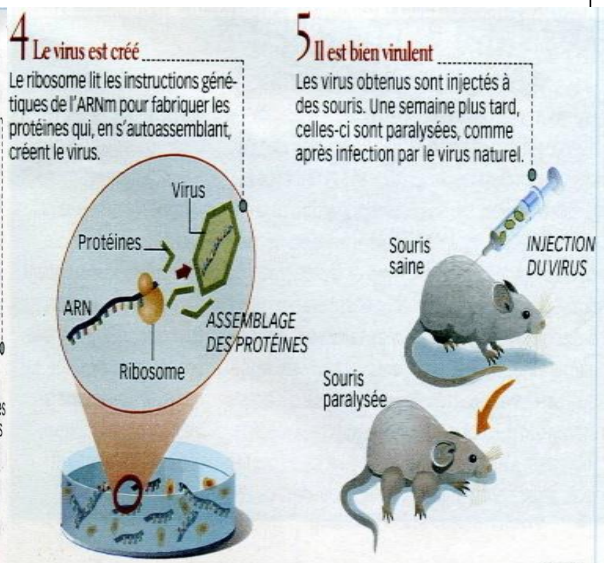
Ils cherchent à **créer la vie** à partir de "rien"

En réussissant à fabriquer le génome du virus de la polio par simple assemblage, des biologistes américains viennent de prendre date : la vie pourrait être créée à partir de l'inerte. Toutefois, les avis divergent.

Par Kheira Bettayeb







30 | CIÊNCIA | PÚBLICO, SEX 22 JUN 2012

Publicado último artigo sobre o vírus da gripe das aves feito em laboratório

Depois de meses de discussão e receios de bioterrorismo, o segundo trabalho sobre o vírus H5N1, modificado para ser transmissível entre mamíferos, foi revelado. Mas este tipo de investigação parou

NATURE | NEWS

Fears grow over lab-bred flu

Scientists call for stricter biosafety measures for dangerous avian-influenza variants.

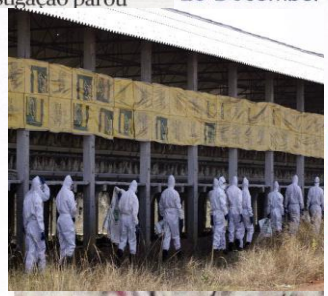
Declan Butler

20 December 2011

H5N1 Bird Flu Effects Downplayed as WHO Calls for Weaponized Strain to Go Public

Risk = Hazard + Outrage

The Peter Sandman Risk Communication Website



THE HINDU

Tim McCoy
NaturalSociety
February 24, 2012

S & T

'Lab-created H5N1 viruses removed natural barriers'

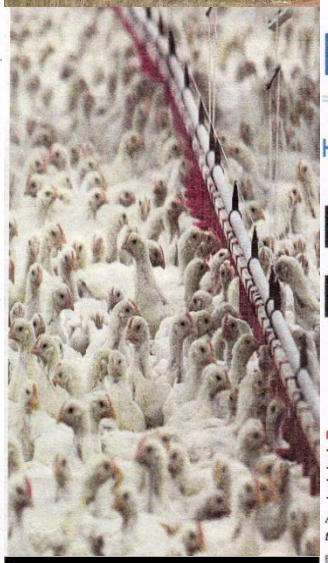
R. PRASAD

The H5N1 Debate Needs Respectful Dialogue, Not "Education" or One-Sided Advocacy

by Peter M. Sandman

(a February 17, 2012 email to Lisa Schnirring of *CIDRAP News*)

Lisa Schnirring's *CIDRAP News* article is also online.



Science News ... from universities, journals, and other research organizations

New H5N1 Viruses: How to Balance Risk of Escape With Benefits of Research?

Laboratory Mutant H5N1 Controversy

ScienceDaily
Your source for the latest research news

Science
CENSORED

As aves são o repositório natural da gripe: nelas surgiu o vírus H5N1

June 23, 2012

HUFF POST SCIENCE
THE INTERNET NEWSPAPER: NEWS BLOGS VIDEO COMMUNITY

BLOG

A New H5N1 Flu Virus? This Research Should Stop Now

Featuring fresh takes and real-time analysis from HuffPost's signature lineup of contributors
Hot on the Blog: Dr. Peggy DrexlerMarlo ThomasMuhammad Yunus

Posted: 02/19/2012 3:07 pm

Examiner.com

H5N1 | May 4, 2012 | ADD A COMMENT

Potentially deadly and highly transmissible H5N1 flu virus created in lab

TIME Healthland
A Healthy Balance of the Mind, Body and Spirit

SEARCH TIME.COM

Home | Medicine | Diet & Fitness | Family & Parenting | Love & Relationships | Mental Health | Policy & Industry | Viewpoint

FLU

H5N1 Paper Published: Deadly, Transmissible Bird Flu Could Be Closer than Thought

After an epic debate over whether to release research detailing how scientists created H5N1 in the lab, Nature finally published one of the two controversial papers on Wednesday.

By BRYAN WALSH | @bryanrwalsh | May 3, 2012 | 3

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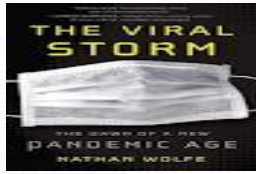


POLITICAL SCIENCE

Why is the U.S. government trying to control the contents of scientific journals?

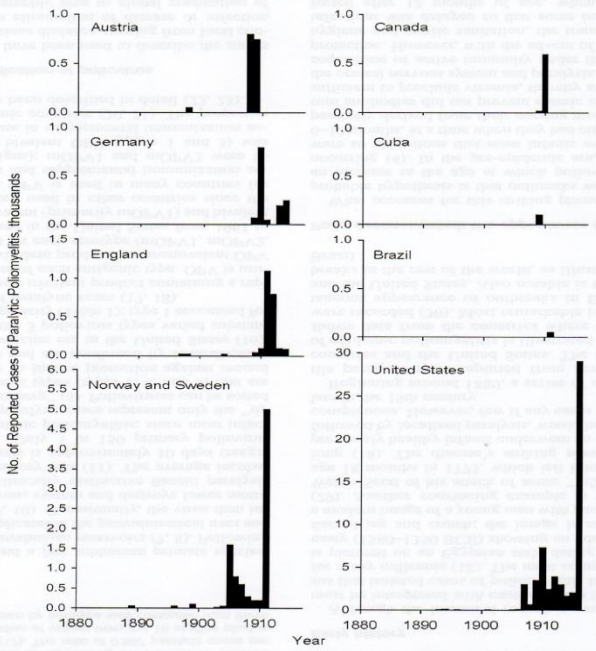


Figure 1. Reported numbers of paralytic cases in poliomyelitis epidemics occurring between 1880 and 1916, by country and year, including the countries where large outbreaks were first observed. Data were obtained from chart 1 in the article by Lavinder et al. (30).

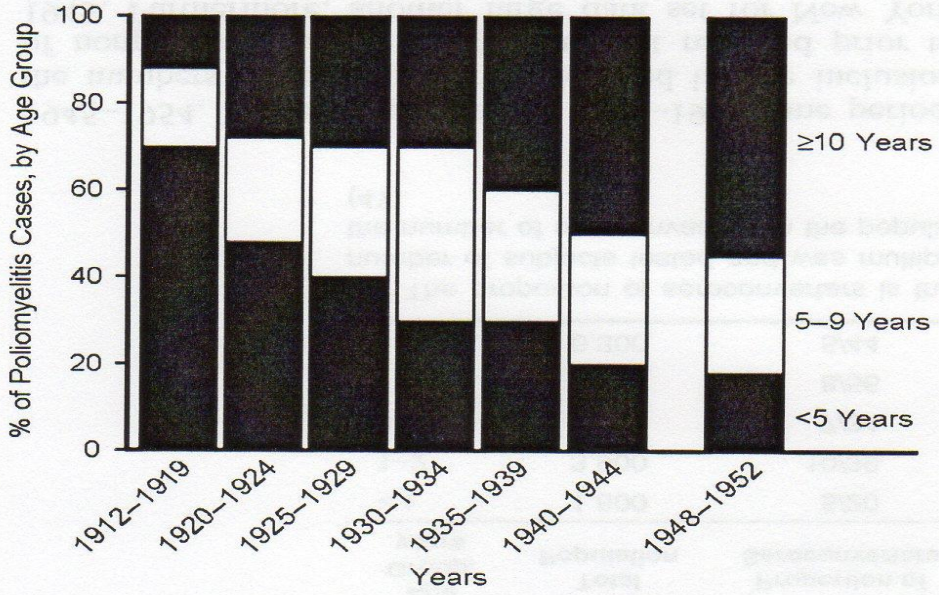


Figure 2. Age distribution of patients with poliomyelitis (paralytic and nonparalytic) in Massachusetts, 1912–1952. Data were obtained from Dauer (35).

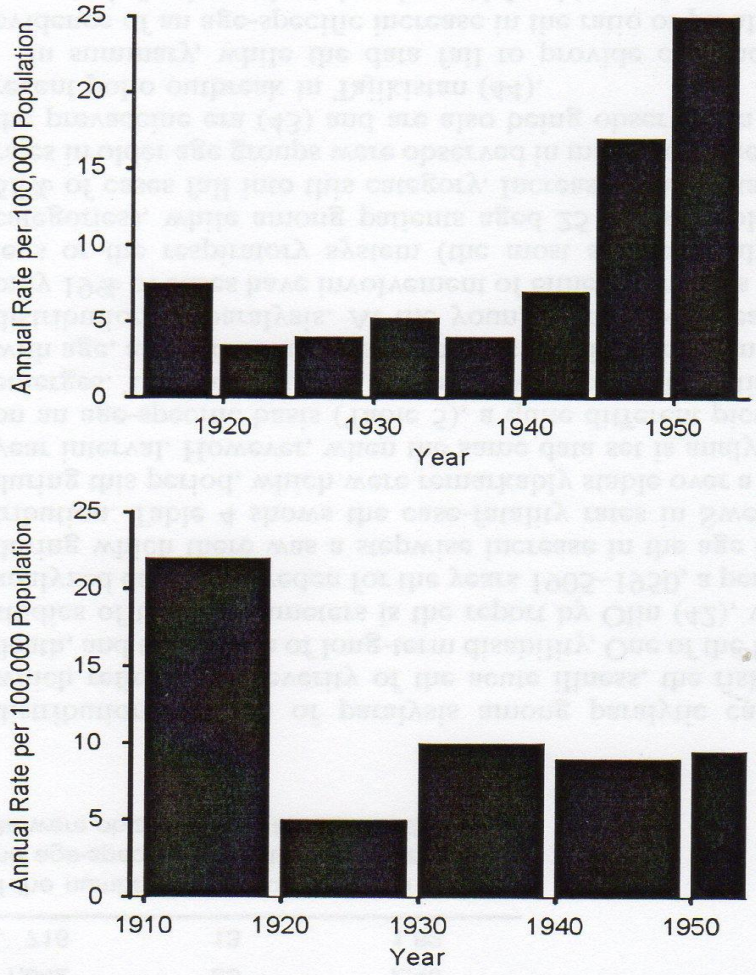


Figure 3. Annual poliomyelitis attack rates per 100,000 population in the United States (top) and New York City (bottom) during the first half of the 20th century. Upper panel: poliomyelitis incidence by 5-year period, United States, 1915–1954. Reports for 1915–1944 were almost entirely on cases of paralytic poliomyelitis, while reports for 1945–1954 comprised approximately equal numbers of paralytic and nonparalytic cases. Data were obtained from Serfling and Sherman (36) Sabin (37), and the Centers for Disease Control and Prevention (40). Lower panel: poliomyelitis incidence by 10-year period, New York City, 1910–1954. Data were obtained from Sabin (37), Greenberg et al. (38), and Siegel et al. (39).

Table 5. Age-Specific Poliomyelitis Case-Fatality Rates and Age-Specific Sites of Paralysis in Sweden, by Age Group, 1925–1944[a]

	Age Group, years				
	<3	3–6	7–14	15–24	≥25
Case-fatality rate (n = 15,611), %	4.5	6	11	18	23.5
Location of paralysis (n = 15,303), %					
Leg(s) only	58	40	34	23	20
Arm(s) only	10	9.5	10	10.5	10
Arm(s) plus leg(s)	17	27	33	38	37
Respiratory system	2	4	7	15	18
Other sites	13	19.5	16	13.5	15
Total	100	100	100	100	100

[a] Data were obtained from Olin (42).

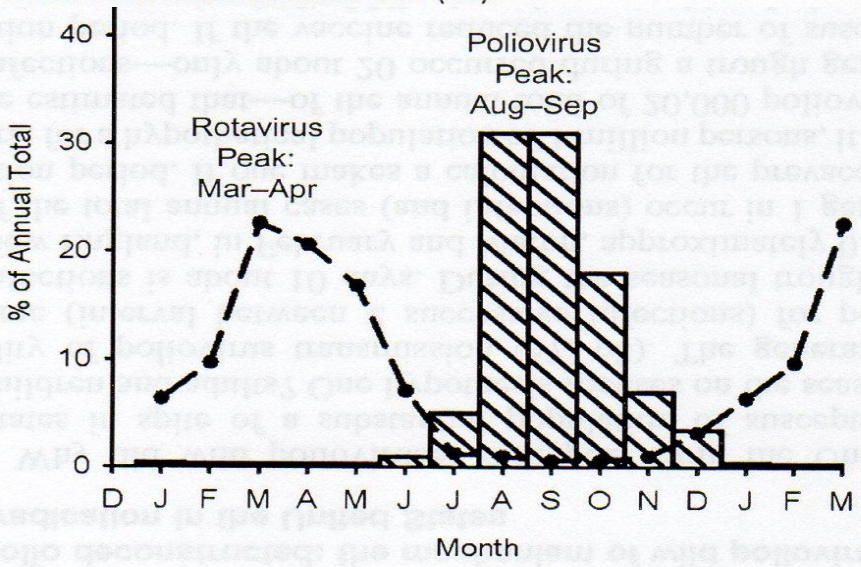


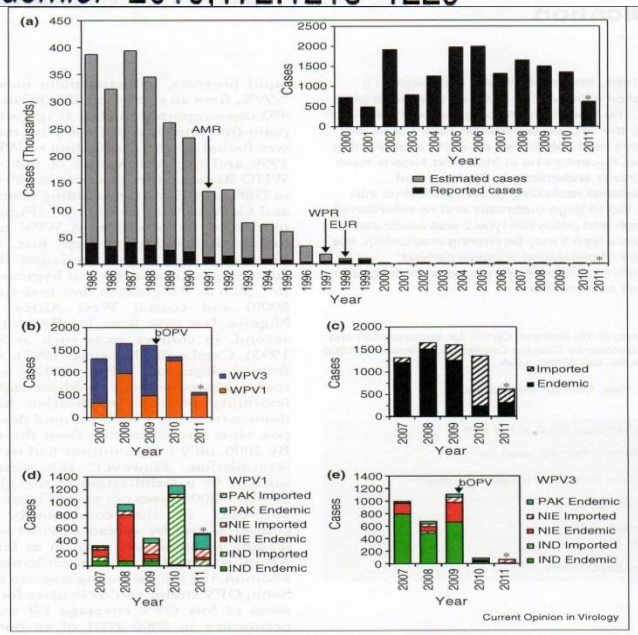
Figure 4. Seasonal variation in reported poliovirus (striped bars) in New England during 1942–1951 and in isolation of rotavirus (dashed line) in the United States during 1991–1997. Data were obtained from Serfling and Sherman (36) and Török et al. (49).

Table 4. Chronologic Trends in the Poliomyelitis Case-Fatality Rate in Sweden, 1905–1944[a]

	1905	1911–1913	1925–1934	1935–1944
No. of paralytic cases	868	6,775	4,156	11,455
No. of deaths	145	1,239	624	1,594
Case-fatality rate, %	16.7	18.3	15.0	13.9

[a] Data were obtained from Olin (42).

Am J Epidemiol 2010;172:1213–1229



(a) Incidence of paralytic polio cases associated with wild poliovirus (WPV) infections worldwide, 1985–2011 (source: http://www.polioeradication.org/). Estimated cases are shown as gray bars; reported and virologically confirmed cases are shown as black bars; asterisks indicate case counts as of 03 January 2012. Arrows below three-letter codes for WHO regions (AMR, Americas; EUR, Europe; WPR, Western Pacific) indicate year of last detection of indigenous WPV. (b) Polio cases by serotype (WPV1, wild poliovirus type 1; WPV3, wild poliovirus type 3), 2007–2011. Introduction of bivalent OPV (bOPV; types 1 + 3) in late 2009 is indicated by the arrow. (c) Polio cases from endemic and imported WPV, 2007–2011. WPV in re-established transmission countries is coded as imported from their original endemic reservoirs of India and Nigeria (see Figures 2 and 3). (d) Polio cases associated with endemic and imported WPV1, 2007–2011 (IND, India; NIE, Nigeria; PAK, Pakistan). (e) Polio cases associated with endemic and imported WPV3, 2007–2011.

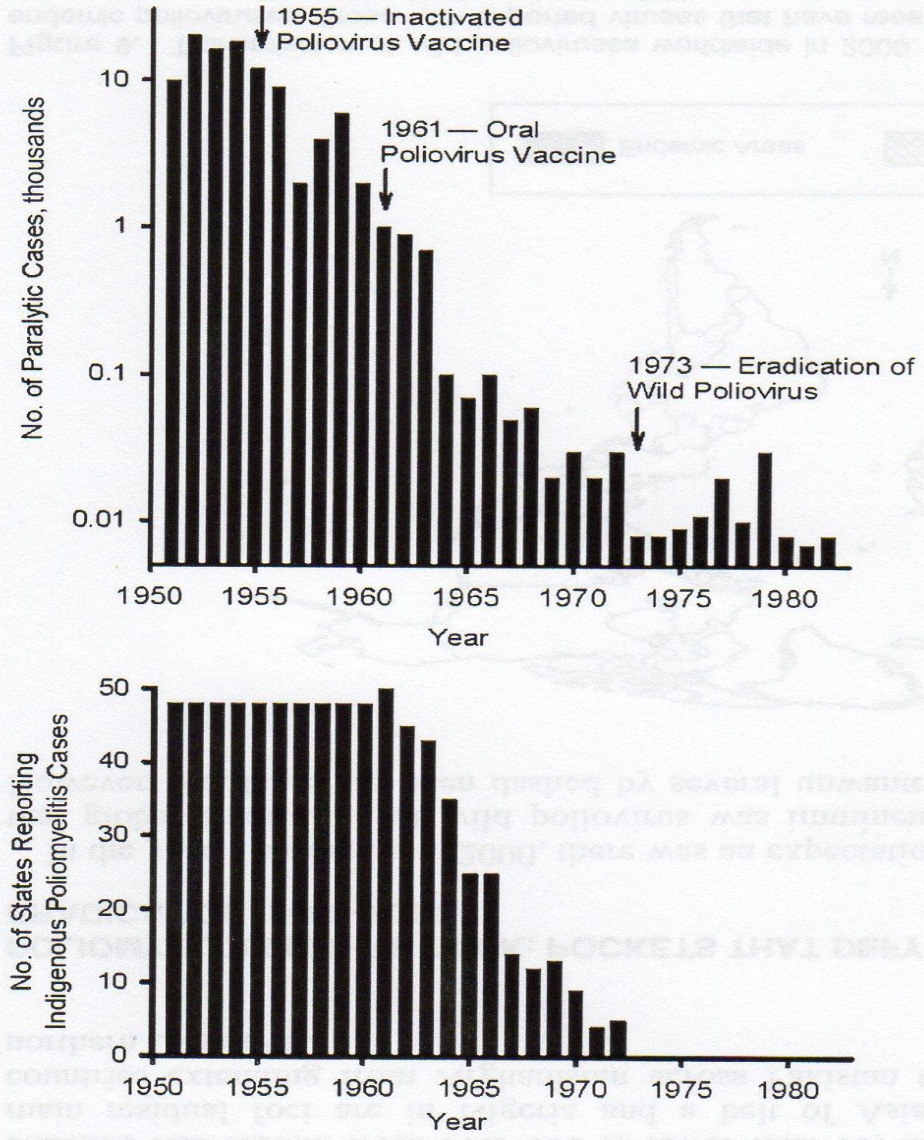


Figure 6. Upper panel: annual numbers of reported cases of poliomyelitis in the United States, 1951–1982. For the years 1973–1982, cases were either imported cases or cases of vaccine-associated paralytic poliomyelitis, with the exception of an outbreak that occurred among the Amish population in 1979. Data were obtained from the Centers for Disease Control and Prevention (65). Lower panel: number of US states reporting indigenous poliomyelitis due to wild polioviruses, 1951–1982. Data were obtained from the Centers for Disease Control and Prevention (69).

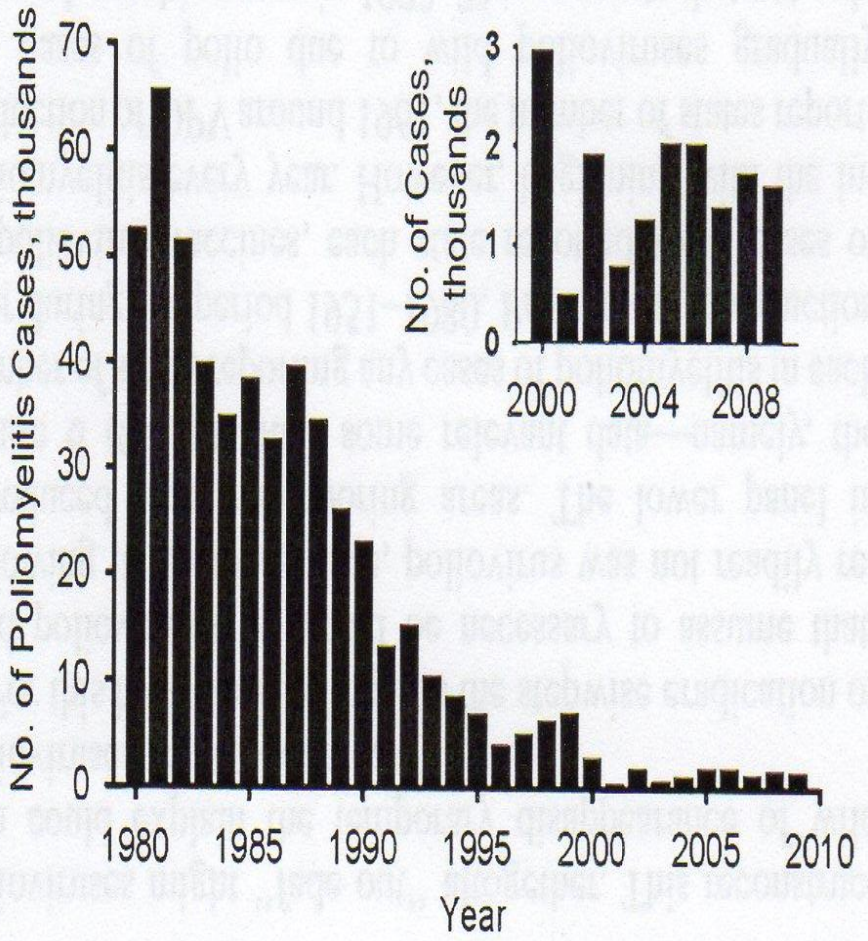
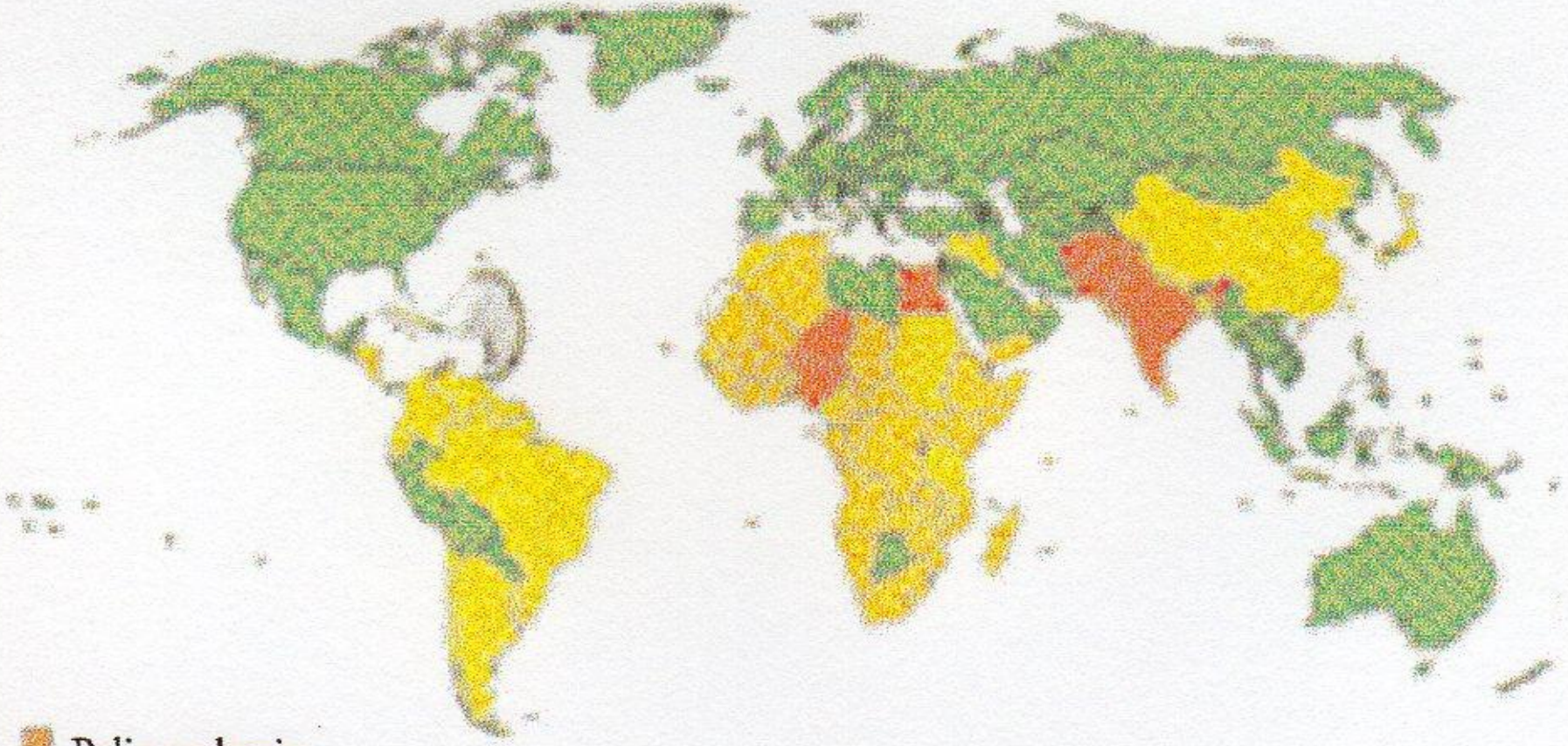


Figure 8. Global incidence of poliomyelitis, reported as virologically confirmed cases of paralytic poliomyelitis, during the period 1980–2009. Cases for 2000–2009 have been replotted in the inset to demonstrate recent incidence. It is estimated that during the period from 1980 to the late 1990s, virologically confirmed cases represented only a modest proportion (15%–25%) of all cases of paralytic poliomyelitis. Data were obtained from the World Health Organization (100).

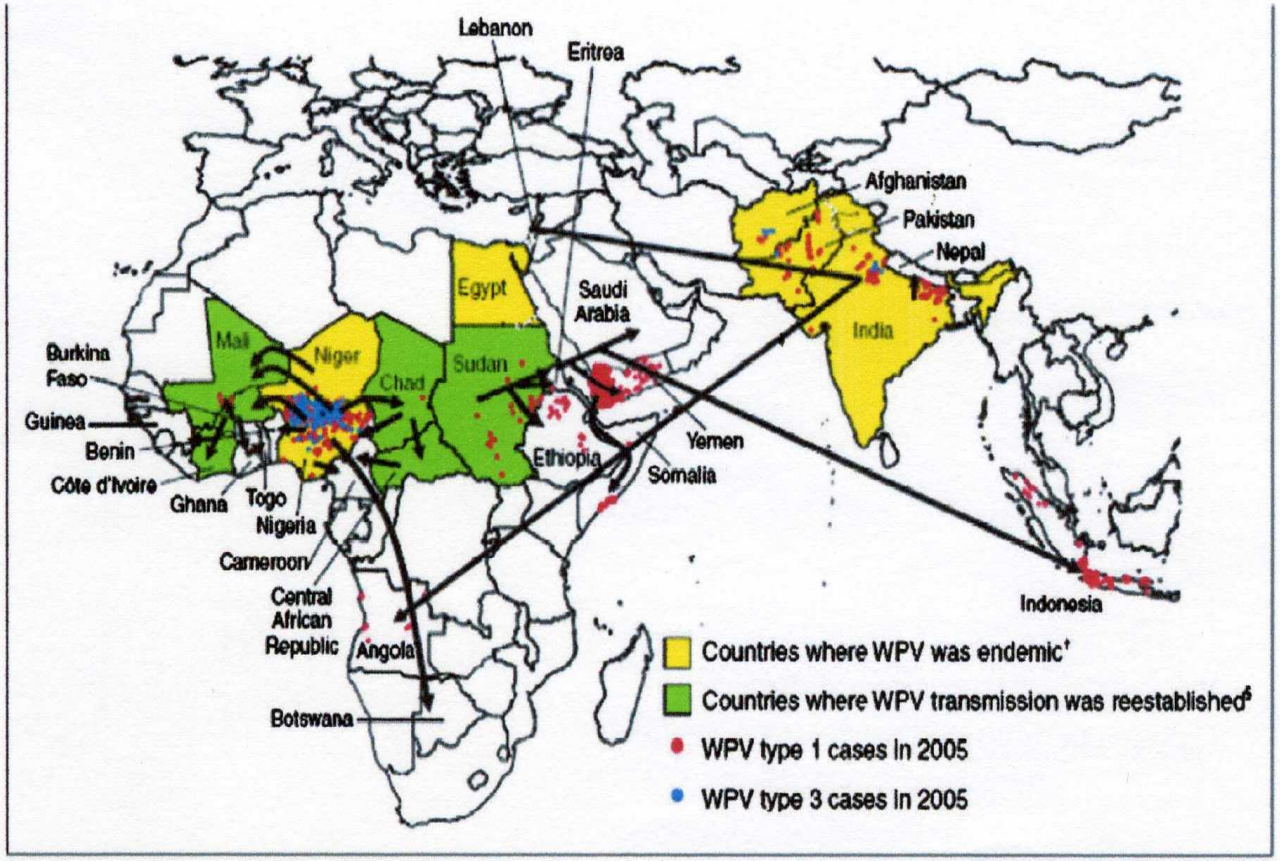
Wild poliovirus containment: progress with Phase I - Survey & Inventory, 2004



- Polio endemic
- Re-established transmission
- Survey not yet started
- Conducting survey
- Reporting completion of survey and inventory of laboratories with wild poliovirus materials

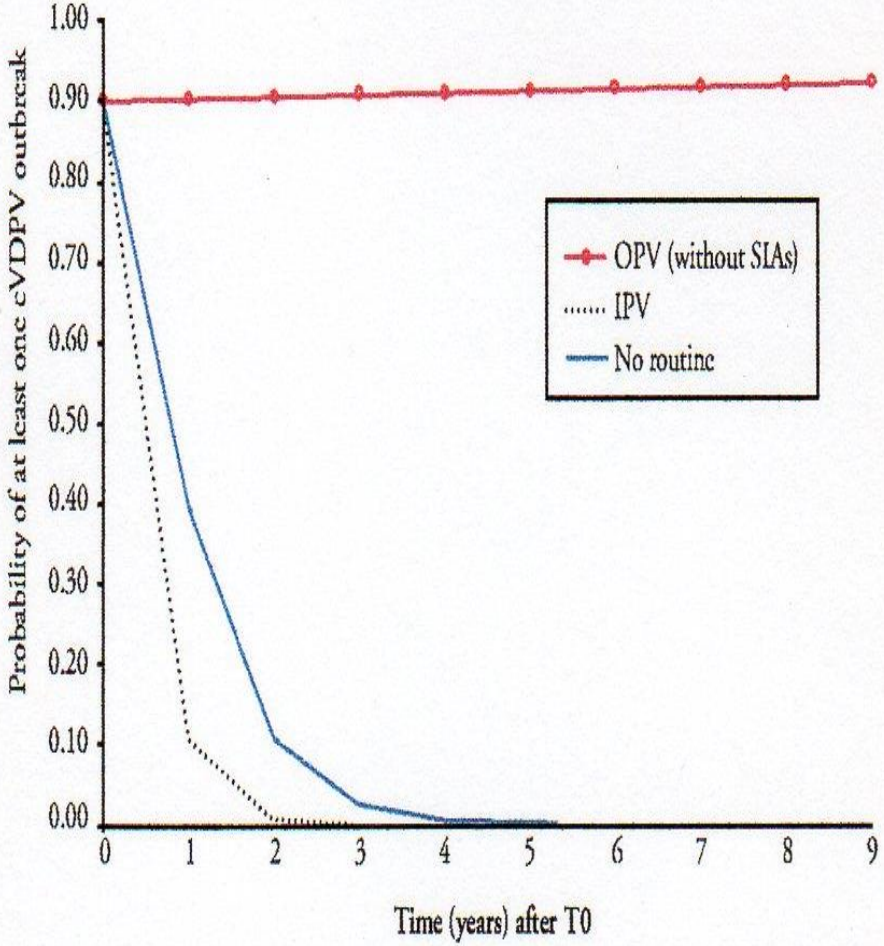
The Role of the Traveler in Emerging Infections and Magnitude of Travel

Lin H. Chen, MD, FACP[a,*], Mary Elizabeth Wilson, MD, FACP, FIDSA[b]



*Routes (not all importation events) indicated by arrows.
†As of February 1, 2006, Niger and Egypt were considered no longer endemic for WPV because neither country had indigenous transmission during the preceding 12 months.
§Countries were considered to have reestablished transmission if WPV was detected for >1 year after importation. The majority of these countries have not experienced WPV type 1 transmission since July 2005.

Fig. 3. Wild poliovirus (WPV) cases in 2005 and importation routes during 2002–2005 worldwide. (*From* CDC. Resurgence of wild poliovirus type 1 transmission and consequences of importation—21 countries, 2002–2005. Morbidity Mortality Weekly Report 2006;55(6):145–50; with permission.)



* Based on Duintjer-Tebbens RJ et al. *Risks of Paralytic Disease due to Wild or Vaccine-derived Poliovirus after Eradication* (Submitted). Probabilities assume realistic population immunity at T0, include low, lower-middle and upper-middle income countries (currently using OPV).

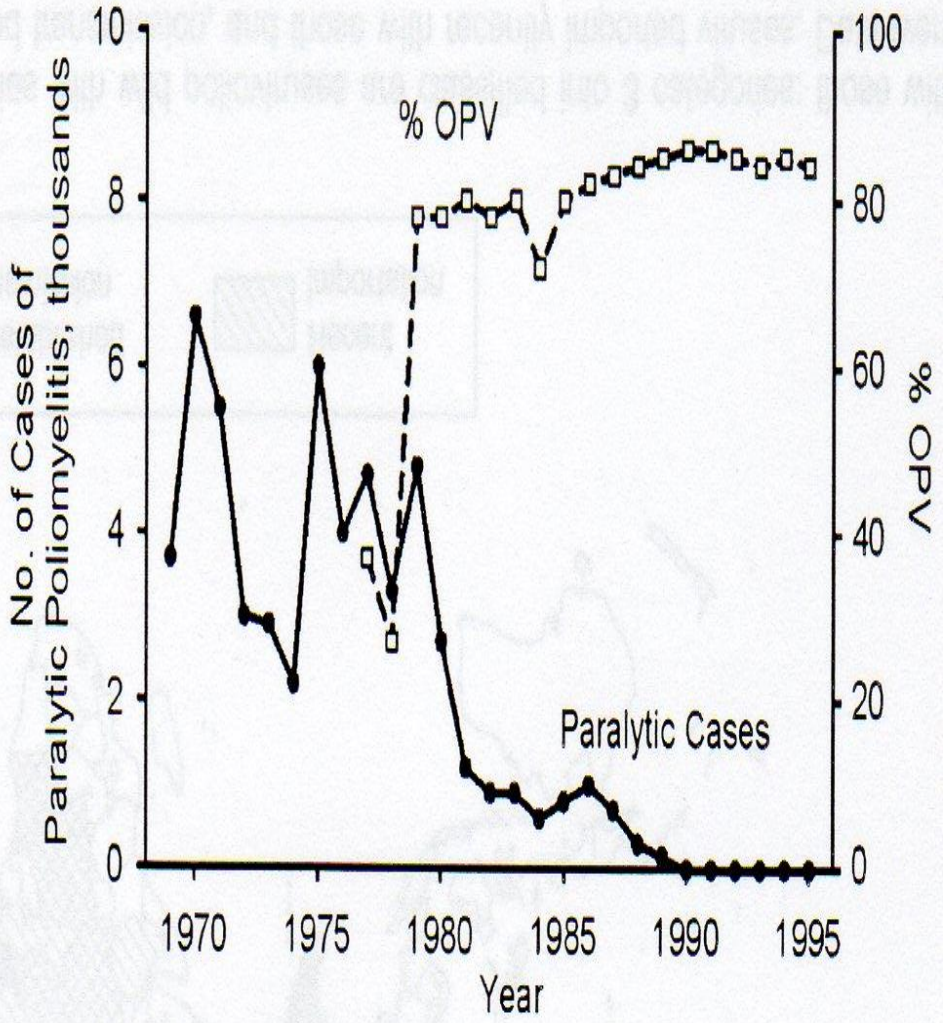


Figure 7. Reported numbers of confirmed cases of paralytic poliomyelitis (solid line) in Latin America and the Caribbean region and percentages of children aged 12 months given at least 3 doses of oral poliovirus vaccine (OPV) (dashed line), 1969–1995. Data were obtained from de Quadros et al. (5).

Polio outbreaks due to circulating vaccine-derived polioviruses (cVDPV), 2000-2004

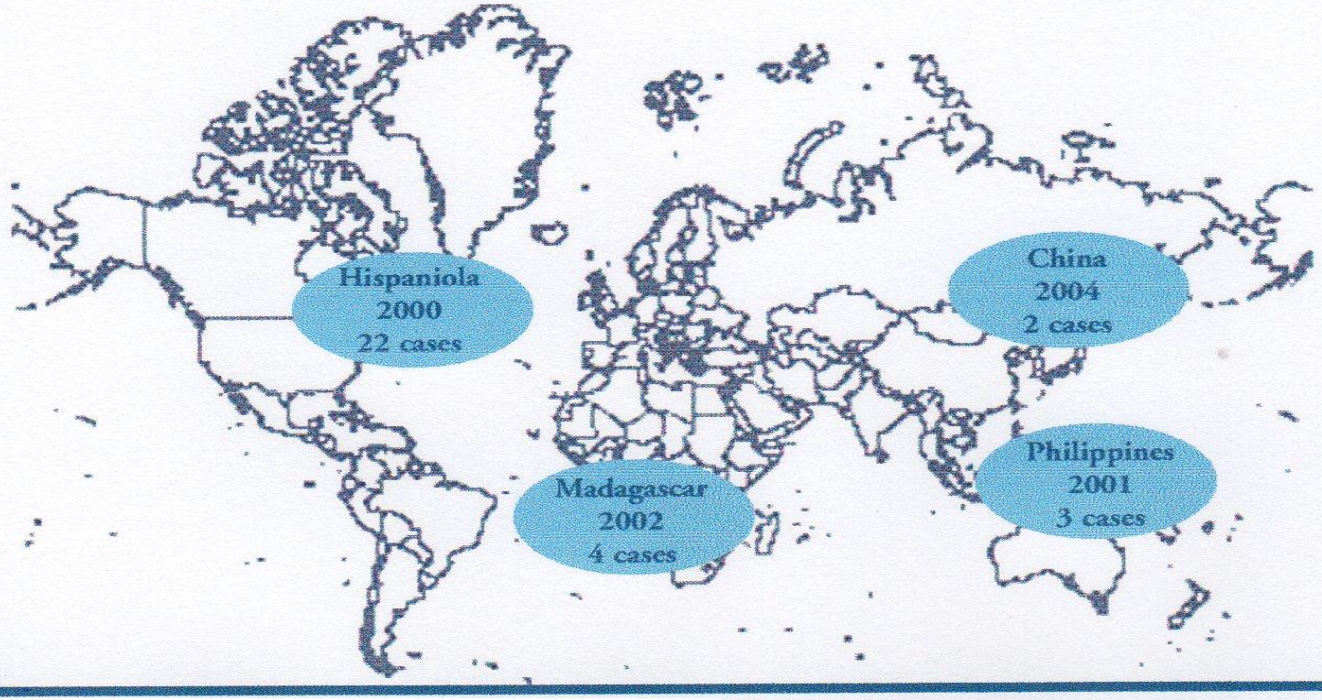


Table 9. Reported Numbers of Virologically Confirmed Cases of Paralytic Poliomyelitis Associated With Vaccine-Derived Polioviruses, 1988–June 2010[a]

Country	Poliovirus Type	1988–1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Egypt	2	30											
Hispaniola (Haiti and the Dominican Republic)	1		12	9									
Philippines	1			3									
Madagascar	2				4								
China	1						3						
Madagascar	2							5					
Indonesia	1							46					
Cambodia	3							1	1				
Nigeria	2							1	21	68	63	153	9
Niger	2								2				
Myanmar	1								1	4			
Democratic Republic of the Congo	2										14	2	3
Guinea	2											1	
India	2											11	1
Ethiopia	3											1	5

Abbreviation: VDPV, vaccine-derived poliovirus.

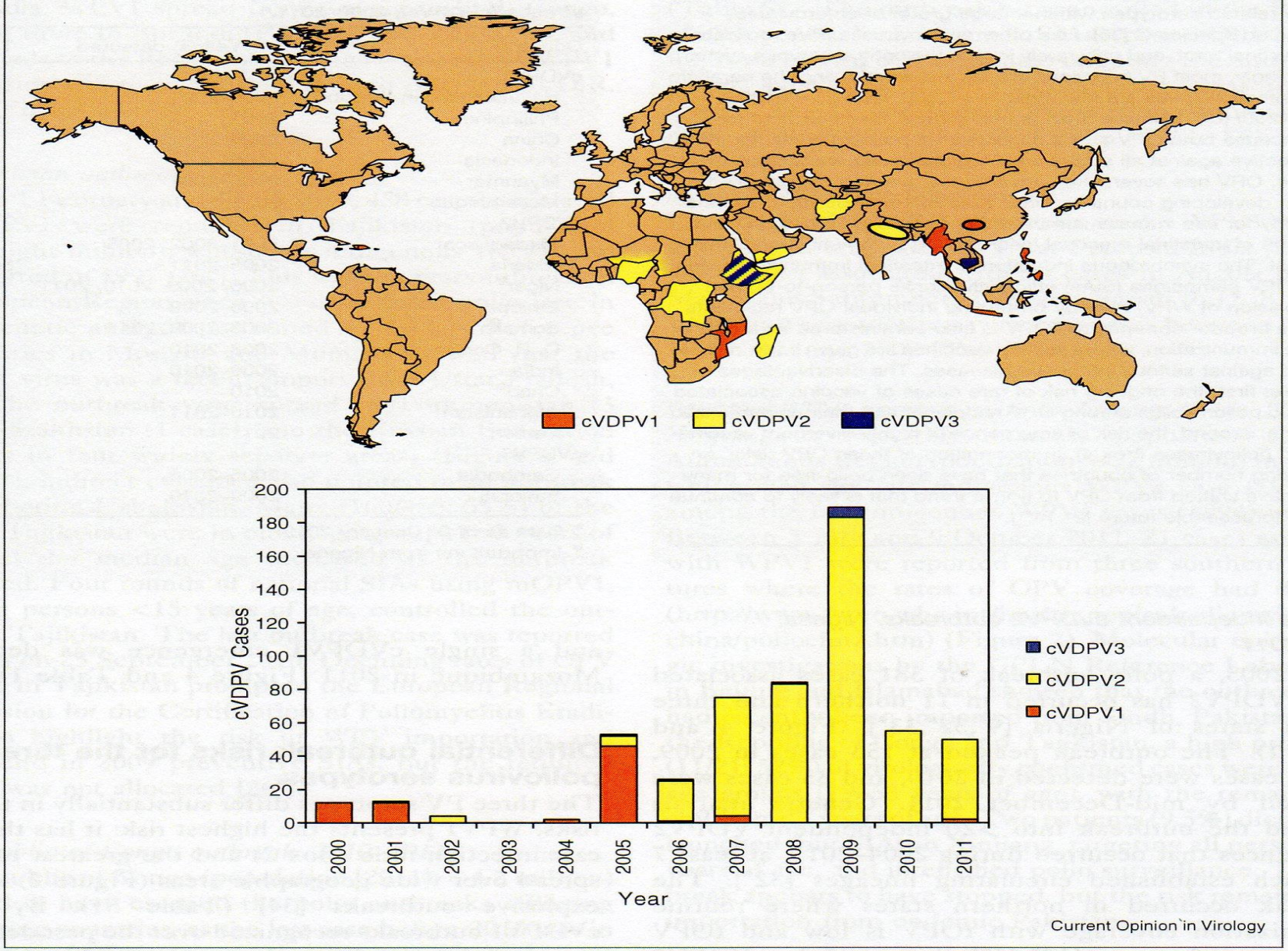
[a] This table does not include 21 polio-compatible cases in Hispaniola and 10 polio-compatible cases in Indonesia that were not virologically confirmed. Both the Niger VDPVs and the Guinea VDPV were linked to the Nigerian VDPV2 outbreak. Data were obtained from Wringe et al. (99) and the World Health Organization (100).

Table 1

Geographic distribution of circulating vaccine-derived polioviruses (cVDPVs), 2000–2011.[a]

Country	Year(s) detected	Total cases
cVDPV1		
Haiti/Dominican Republic	2000–2001	21
Philippines	2001	3
China	2004	2
Indonesia	2005	46
Myanmar	2006–2007	5
Mozambique	2011	2
cVDPV2		
Madagascar	2001–2002; 2005	8
Nigeria	2005–2011	381
Niger[b]	2006, 2009, 2010, 2011	6
Ethiopia	2008–2009	4
Somalia	2008–2009, 2011	14
D. R. Congo	2008–2010	36
India	2009–2010	17
Chad[b]	2010	1
Afghanistan	2010–2011	6
Yemen	2011	7
cVDPV3		
Cambodia	2005–2006	2
Ethiopia	2009–2010	7

[a] Data as of 03 January 2012.
[b] Importations from Nigeria.



Circulating vaccine-derived poliovirus (cVDPV) outbreaks, 2000–2011. Map: location of cVDPV outbreaks, color-coded by serotype (red, cVDPV type 1 [cVDPV1]; yellow, cVDPV2; blue, cVDPV3). The major focus of cVDPV transmission in India is shown by the yellow ellipse, and localized, transient circulation in China is shown by a red circle. The emergence of cVDPV2 and cVDPV3 in Ethiopia is indicated by upward yellow and blue diagonal patterns. Apart from the 2000–2001 cVDPV1 outbreak on the island of Hispaniola (Haiti and the Dominican Republic) and the limited spread of the cVDPV2 from Nigeria to Niger and Chad (indicated by yellow tint across borders), all other outbreaks are independent events. Some countries had successive (e.g., Madagascar) or concurrent (e.g., Nigeria and D. R. Congo) cVDPV2 outbreaks. Table 1 cases associated with cVDPV outbreaks, 2000–2011, color-coded by serotype.

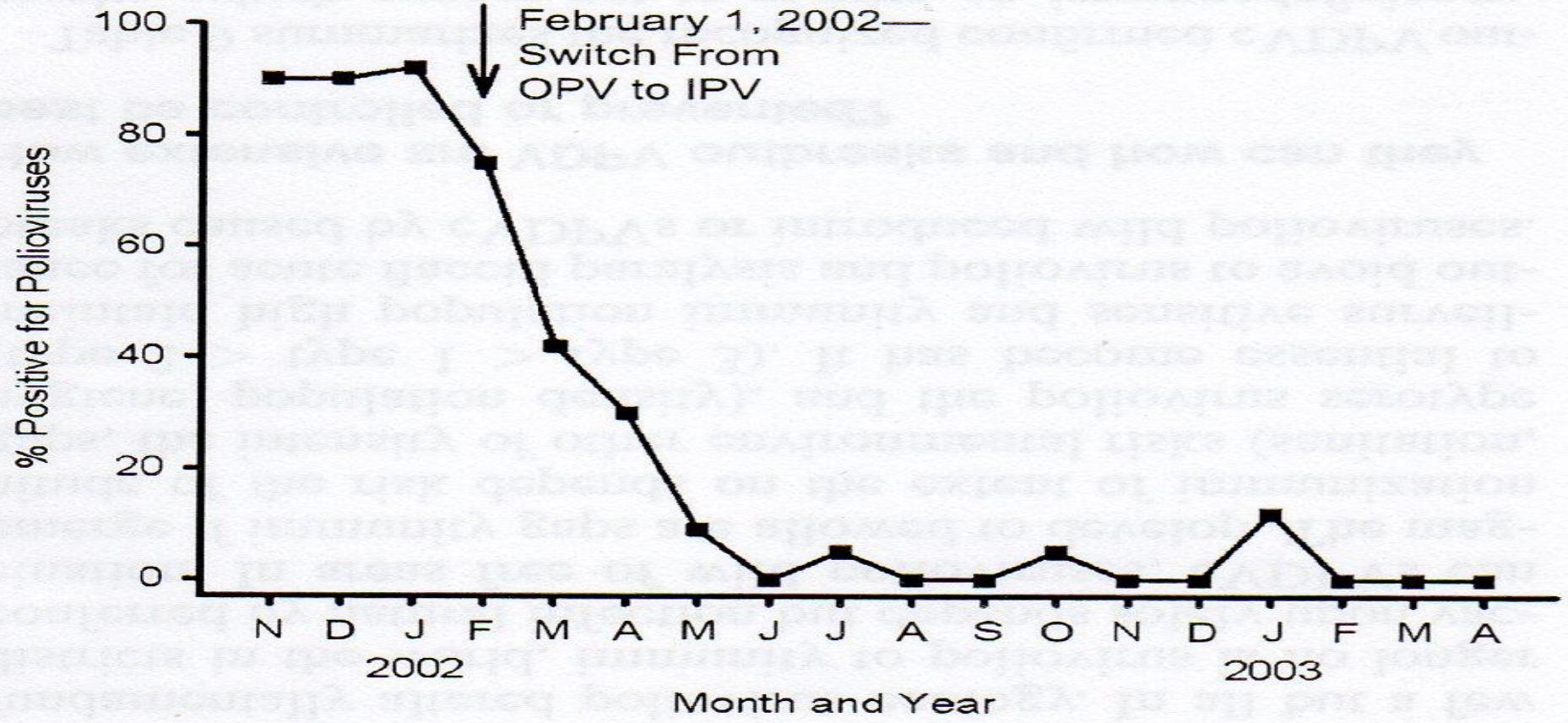


Figure 11. Environmental surveillance for poliovirus excretion following the transition from oral poliovirus vaccine (OPV) to inactivated poliovirus vaccine (IPV) in New Zealand, 2001–2003. Sewage samples were collected weekly from 3 different sewage treatment plants before and after the termination of OPV utilization. Routine use of OPV ended on February 1, 2002, and the prevalence of OPV in sewage fell from approximately 90% to 0% by June 2002 (4 months later). During the following 10 months (July 2002–April 2003), there were 5 isolates of OPV; on the basis of sequence analysis, all of these isolates were determined to be from children recently immunized with OPV, suggesting that they represented imported OPV. Data were obtained from Huang et al. (108).

Potential timeline and priority activities for eventual cessation of oral polio vaccine (OPV) for routine immunization

Phase of OPV cessation work

Interruption of wild poliovirus	Certification & Preparation for OPV Cessation	OPV Cessation & Verification	'Post OPV' Era
	Certify interruption of wild virus transmission	Simultaneously stop all routine use of OPV	Maintain surveillance
	Contain wild & vaccine-derived polioviruses	Contain Sabin strain polioviruses	Maintain stockpile
	Develop mOPV stockpile & criteria for use	Verify the absence of cVDPV & Sabin virus	Verify containment
	Establish national policy on IPV use	Fully integrate poliovirus surveillance into *IHR*	

-1 0 1 2 3 4 5 6 7 8

Years after last circulating wild poliovirus

WHO/POLIO/05.02

Framework for National Policy Makers in OPV-Using Countries

Cessation of routine oral polio vaccine (OPV) use after global polio eradication

World Health Organization

EXPERT REVIEWS

Current polio global eradication and control policy options: perspectives from modeling and prerequisites for oral poliovirus vaccine cessation

Expert Rev. Vaccines 11(4), 449–459 (2012)

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As the Global Polio Eradication Initiative progresses toward the eradication of wild polioviruses, national and global health leaders must still actively consider options for managing poliovirus risks, including risks associated with using oral poliovirus vaccine. Oral poliovirus vaccine continues to represent a highly effective tool, but its use causes noticeable, rare cases of vaccine-associated paralytic polio and with low coverage it can evolve to become circulating vaccine-derived polioviruse that causes outbreaks. National leaders face a wide range of options, but their choices depend in part on global policies. This article explores the current set of global options for poliovirus eradication or control, discusses constraints and prerequisites for their implementation and offers some insights based on dynamic modeling to inform discussions and frame future economic analyses.

KEYWORDS: control • eradication • inactivated poliovirus vaccine • oral poliovirus vaccine • policy • polio • risk analysis

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Special Article

From Emergence to Eradication: The Epidemiology of Poliomyelitis Deconstructed

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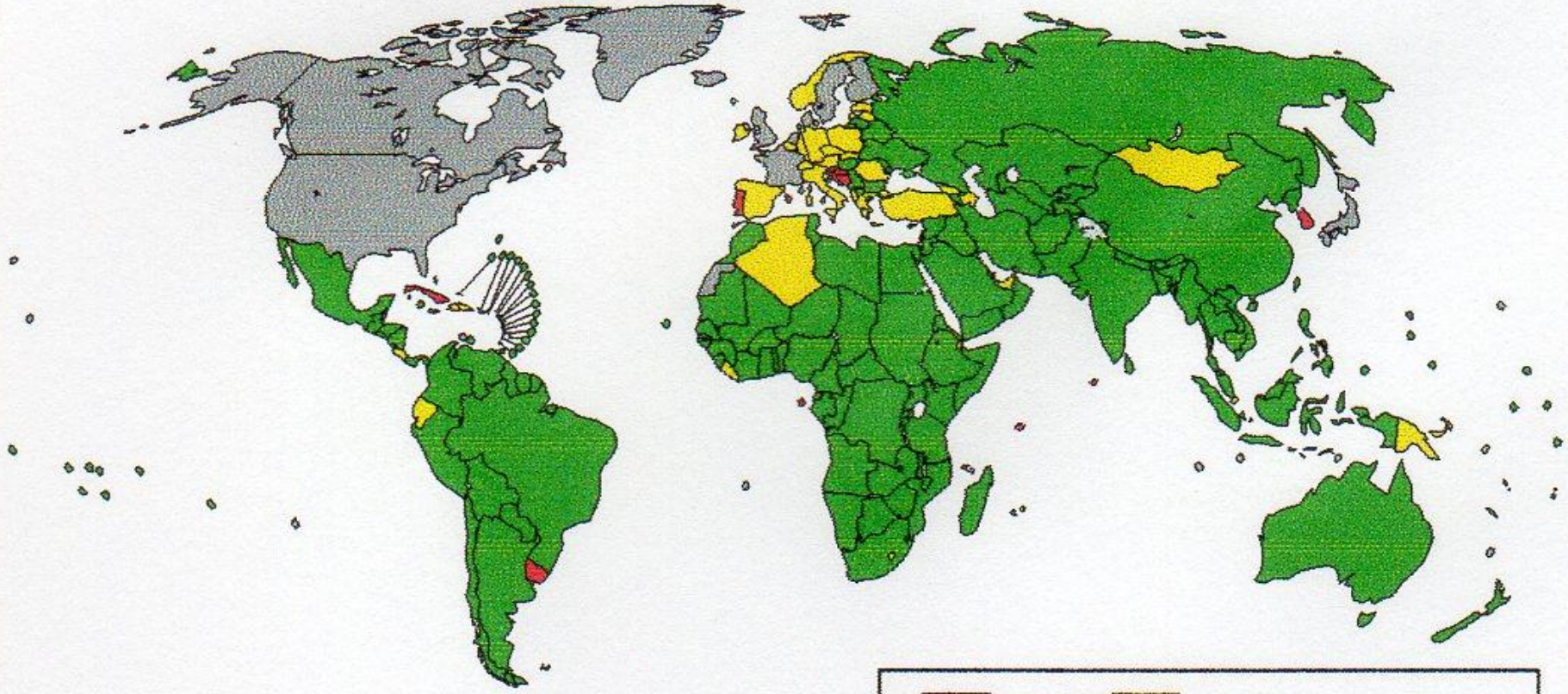
Initially submitted May 3, 2010; accepted for publication August 24, 2010.

Poliomyelitis has appeared in epidemic form, become endemic on a global scale, and been reduced to near-elimination, all within the span of documented medical history. Epidemics of the disease appeared in the late 19th century in many European countries and North America, following which polio became a global disease with annual epidemics. During the period of its epidemicity, 1900–1950, the age distribution of poliomyelitis cases increased gradually. Beginning in 1955, the creation of poliovirus vaccines led to a stepwise reduction in poliomyelitis, culminating in the unpredicted elimination of wild polioviruses in the United States by 1972. Global expansion of polio immunization resulted in a reduction of paralytic disease from an estimated annual prevaccine level of at least 600,000 cases to fewer than 1,000 cases in 2000. Indigenous wild type 2 poliovirus was eradicated in 1999, but unbroken localized circulation of poliovirus types 1 and 3 continues in 4 countries in Asia and Africa. Current challenges to the final eradication of paralytic poliomyelitis include the continued transmission of wild polioviruses in endemic reservoirs, reinfection of polio-free areas, outbreaks due to circulating vaccine-derived polioviruses, and persistent excretion of vaccine-derived poliovirus by a few vaccinees with B-cell immunodeficiencies. Beyond the current efforts to eradicate the last remaining wild polioviruses, global eradication efforts must safely navigate through an unprecedented series of endgame challenges to assure the permanent cessation of all human poliovirus infections.

epidemiology; history of medicine; poliomyelitis; poliovirus; vaccines

Abbreviations: cVDPV, circulating vaccine-derived poliovirus; IPV, inactivated poliovirus vaccine; mOPV, monovalent oral poliovirus vaccine; OPV, oral poliovirus vaccine; VAPP, vaccine-associated paralytic poliomyelitis; VDPV, vaccine-derived poliovirus.

Surveillance for non-polio acute flaccid paralysis (AFP) - 2004



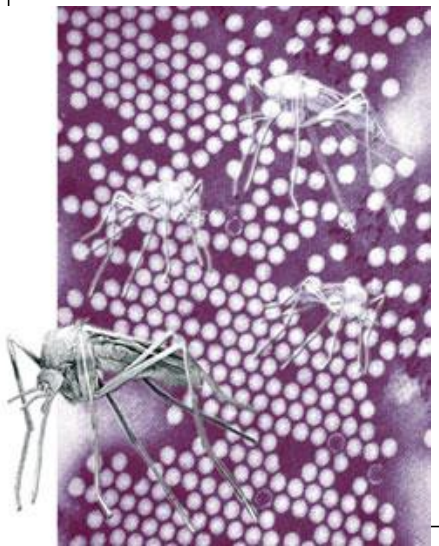
Data in WHO HQ as of 25 April 2005

Clinical Spectrum of WNV Illness: Revised

WN Meningitis

WN Fever

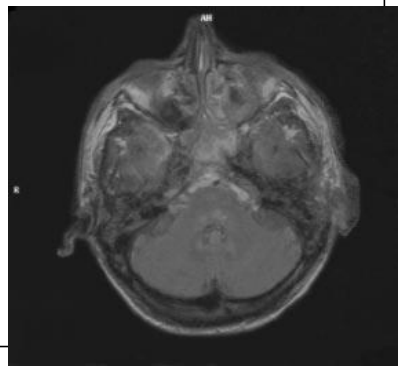
WN Encephalitis



WN "Poliomyelitis"

Inflammatory Neuropathy

Radiculopathy / plexopathy



VOLUME 8

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CASO CLÍNICO / *CLINICAL CASE*

Infecção por vírus *West Nile* (Flavivírus) em Portugal

Considerações acerca de um caso clínico de síndrome febril com exantema

West Nile virus (Flavivirus) infection in Portugal

Considerations about a clinical case with febrile syndrome and rash

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/ Resumo

O vírus *West Nile* (WN) é um flavivírus transmitido por mosquitos e agente etiológico de febre e de doença neuroinvasiva. O vírus WN mantém-se na natureza em ciclos enzoóticos que envolvem mosquitos ornitofílicos, como vectores primários, e algumas espécies de aves como reservatório primário.

A sua presença em Portugal é conhecida, surgindo esporadicamente alguns casos de infecção em equinos e humanos. Em 2010 foi identificado um caso humano na região sul de Portugal, tendo sido o único caso humano detectado em toda a época de actividade de mosquitos nesse ano.

Neste caso a paciente apresentava quadro febril com hiperpirexia muito irregular, por vezes com calafrios e picos de febre superiores a 39ºC, cefaleias, mialgias, adinamia e astenia acentuada, adenomegalias volumosas e dolorosas na região cervical, assim como exantema eritematoso difuso com maior expressão no tronco. Os exames laboratoriais identificaram seroconversão de anticorpos IgM contra o vírus *West Nile*.

Palavras-chave: vírus *West Nile*; síndrome febril; zoonoses.

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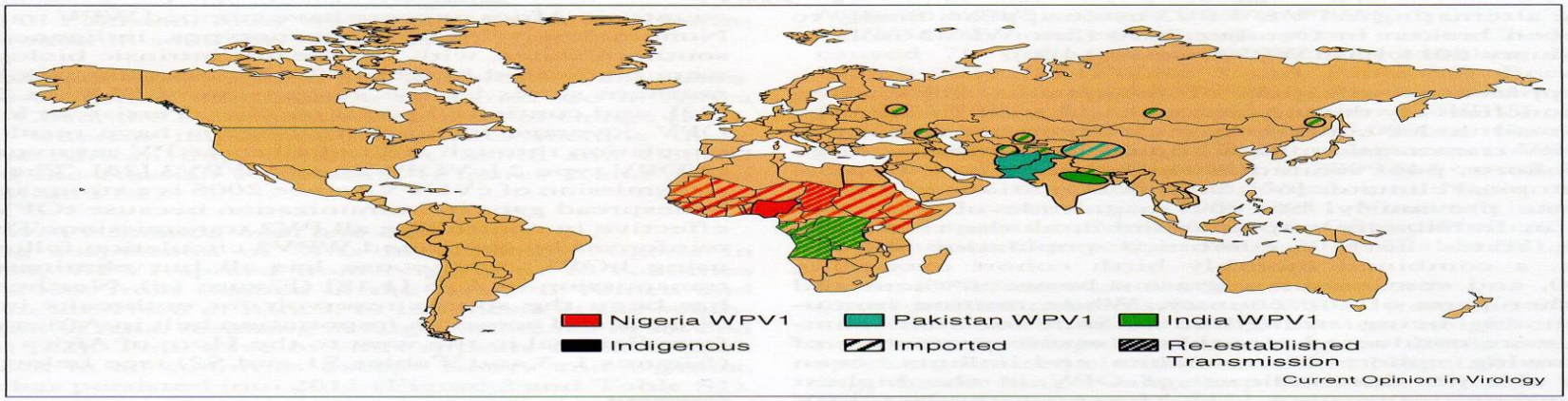
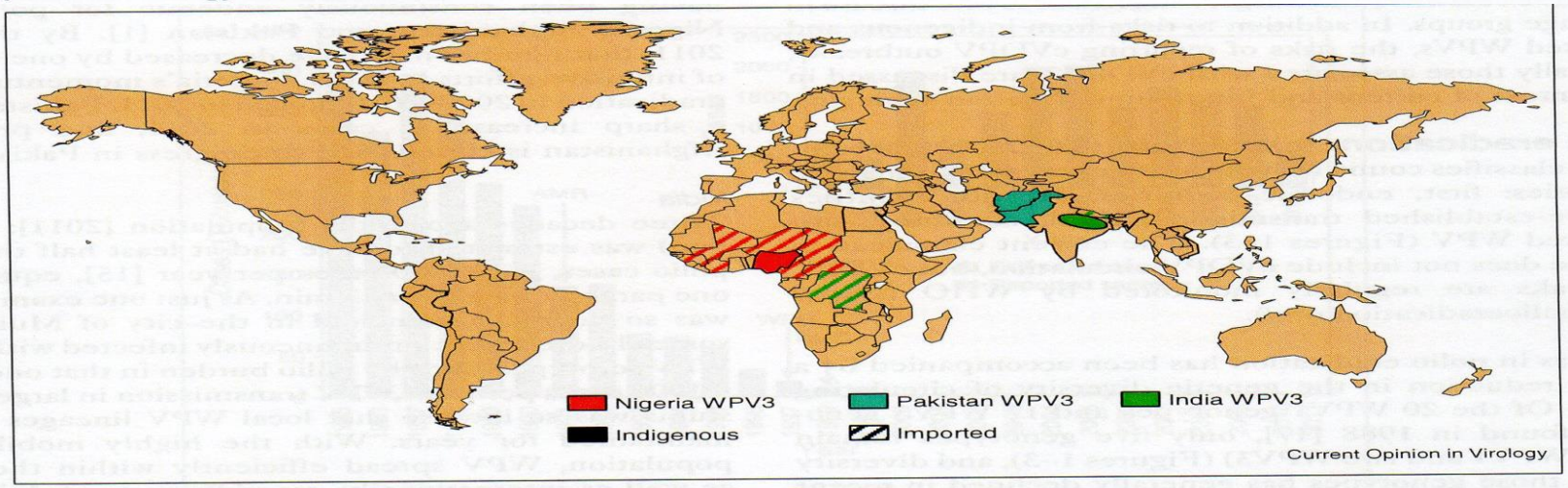
ELSEVIER
Current Opinion in Virology

Reaching the last one per cent: progress and challenges in global polio eradication

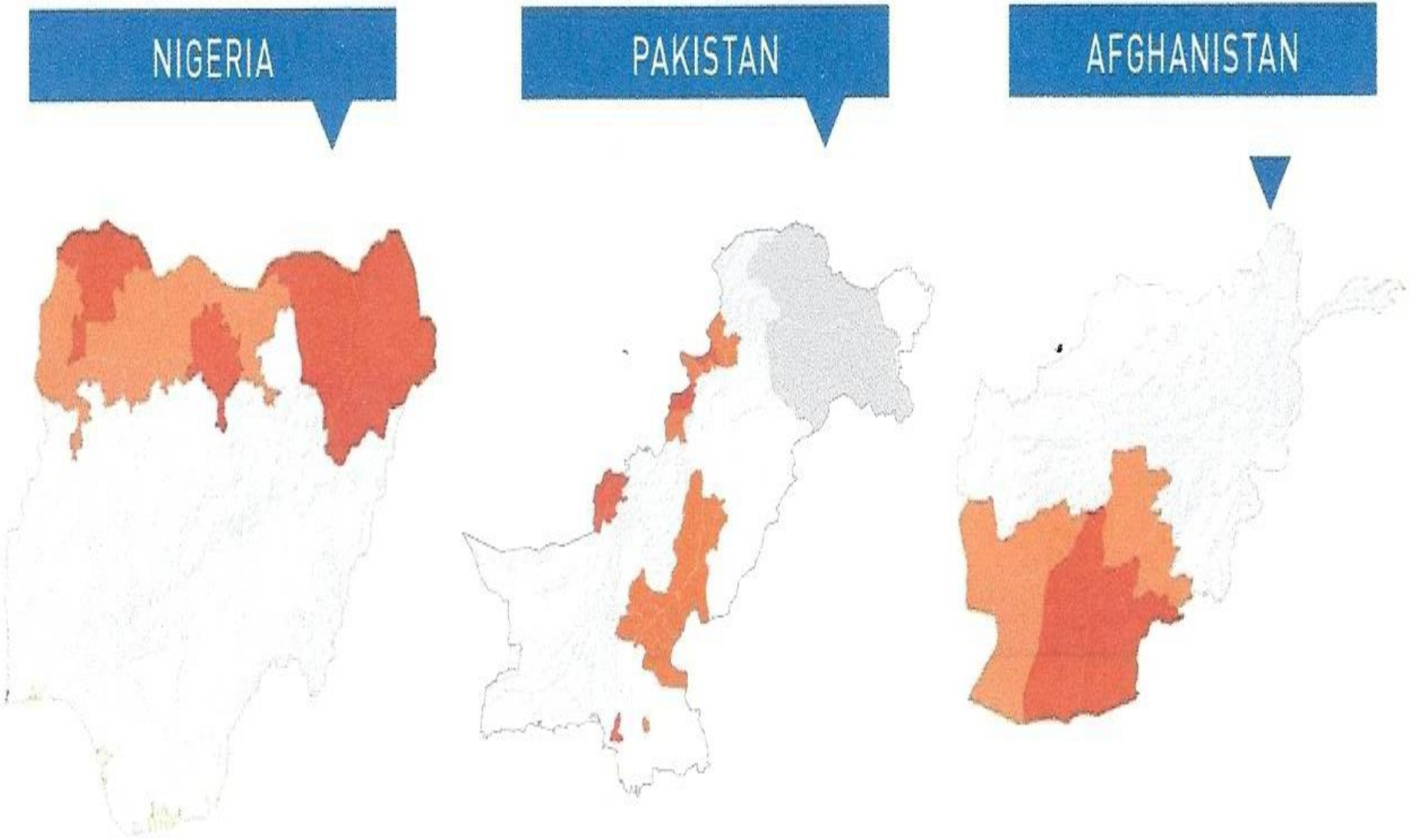
Olen Kew



Countries with known WPV1 transmission, 2009–2011. Countries (or areas within countries) that had not eradicated indigenous WPV1 are indicated by solid colors; countries with re-established WPV1 transmission are indicated by dark upward diagonal pattern; countries with imported WPV1 are indicated by wide upward diagonal pattern. Colors correspond to WPV1 genotypes indigenous to Nigeria (dark red), Pakistan and Afghanistan (blue green), and India (dark green). Spread of Indian WPV1 in 2010 from Tajikistan, to Turkmenistan, Kazakhstan, and the Russian Federation is indicated by circles enclosing wide upward diagonal patterns. The 2011 WPV1 outbreak in Xinjiang in Western China of WPV1 imported from Pakistan is indicated by an ellipse enclosing a wide upward diagonal pattern. The last case in India associated with WPV1 was reported on 13 January 2011.



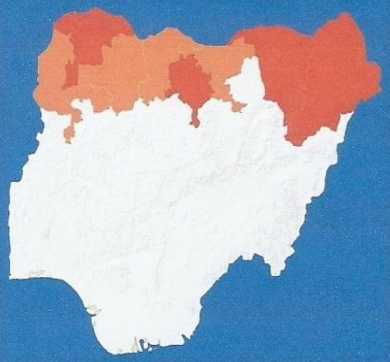
Countries with known WPV3 transmission, 2009–2011. Colors and patterns are as described for Figure 2. The last case in India associated with WPV3 was reported on 22 October 2010.


NIGERIA
PAKISTAN
AFGHANISTAN
Persistent/recurrent transmission area with significant performance gaps
Persistent/recurrent transmission area

Nigeria

Situational Analysis

Polio cases, 2011	• 62 WPV cases (47 WPV1 and 15 WPV3) • 33 cVDPV2 cases	Threefold increase in WPV cases compared to 2010
Worst performing areas,2011	Borno, Kano, Sokoto and Yobe States	

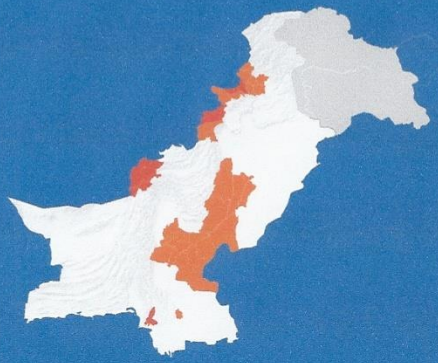


In 2011 Nigeria reported 62 cases due to wild poliovirus (47 due to WPV1 and 15 to WPV3), a three-fold increase over 2010. In addition, 33 cases due to circulating vaccine derived poliovirus type 2 (cVDPV2) were reported. Transmission of all three types was restricted to the endemic northern states, particularly Kano, Jigawa, and Borno, with significant transmission also in Sokoto, Zamfara, and Kebbi. In 2011 Nigeria continued to export virus to neighbouring countries (Niger and Cameroon).

Pakistan

Situational Analysis

Polio cases, 2011	198 cases (196 WPV1 and 2 WPV3)	40% increase in WPV cases compared to 2010
Worst performing areas,2011	Baluchistan, FATA and Karachi	

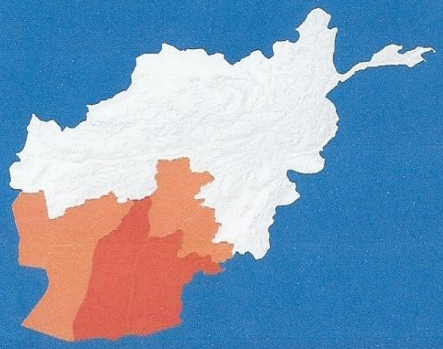


In 2011 Pakistan reported 198 cases due to wild poliovirus (196 due to WPV1 and two due to WPV3), an increase of nearly 40% compared with 2010. In the first half of the year transmission was heavily concentrated in the known, poor-performing transmission zones in Baluchistan, FATA, and Karachi, but during the high transmission season virus spread more widely out of these zones, including into areas that had been polio-free. Nonetheless the worst- performing areas, which have been identified by the national programme for several years now, carry by far the largest burden of disease.

Afghanistan

Situational Analysis

Polio cases, 2011	80 cases of WPV1	Threefold increase in WPV cases compared to 2010
Worst performing areas,2011	Hilmand and Kandahar provinces	

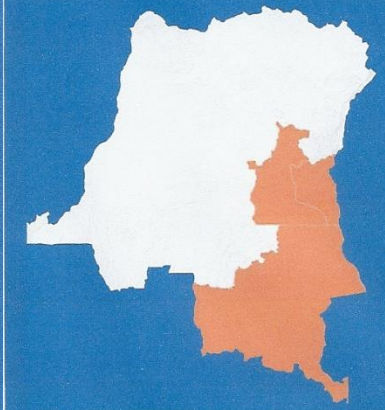


A major setback for polio eradication in Afghanistan occurred in 2011, when 80 cases due to wild poliovirus type 1 were reported - a more than three-fold increase compared to the 25 cases reported in 2010. The majority of cases in 2011 (85%) occurred again in the south-western endemic zone comprising the Southern Region and Farah province of the Western Region. As in Pakistan, some spread of WPV out of the endemic zone occurred during the high transmission season of 2011, with 13 cases reported from nine previously polio-free provinces.

Democratic Republic of the Congo

Situational Analysis

Polio cases, 2011	93 cases (WPV1)	70% decrease in WPV cases in Q3/Q4 2011 compared to Q1/Q2
Worst performing areas,2011	Katanga, Maniema and South Kivu	



DR Congo reported 93 cases due to wild poliovirus in 2011, all due to WPV1. As in Chad, transmission was most intense in the first half of the year, declining significantly in the third and fourth quarters; DR Congo reported a drop of over 70% in the second half of the year compared with the first half. In addition to case numbers dropping, transmission became much more focal, and at the end of 2011 the only remaining active transmission zone appeared to be in the south-east of the country, in Katanga and neighbouring areas of Maniema. The poor immunization status in Katanga is also evidenced by an outbreak of cVDPV2 in the province in late 2011.

Chad

Situational Analysis

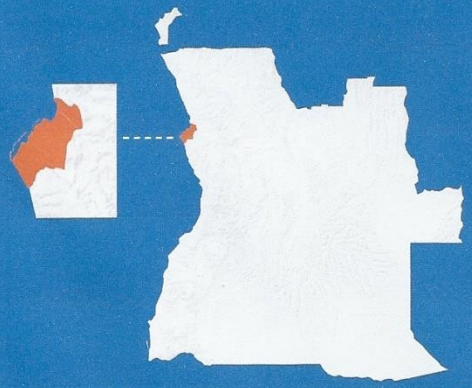
Polio cases, 2011	132 cases (129 WPV1 and 3 WPV3)	75% decrease in WPV cases in Q3/Q4 2011 compared to Q1/Q2
Worst performing areas,2011	See map below	

Chad reported a total of 132 cases in 2011, 129 due to WPV1 and three due to WPV3, the most cases of any re-established transmission country and the second highest in the world after Pakistan. Following intensive transmission in the first half of 2011, the epidemiological situation in Chad has improved in the third and fourth quarters; the number of cases declined by 75% in the second half of the year. Transmission in the last six months has been much more focal following a series of SIAs in the fourth quarter of 2011 and the first quarter of 2012. The principal reasons for children being missed in Chad remain operational, although social and communication issues are also important, particularly in key high-risk areas. Nomadic communities and remote populations are at relatively higher risk of being missed than the general community.

Angola

Situational Analysis

Polio cases, 2011	5 cases (WPV1)	85% decrease in WPV cases compared to 2010
Worst performing areas,2011	Luanda	



Angola has reported only five cases due to wild poliovirus in 2011, a significant decrease from the 33 reported in 2010. In the first quarter, transmission of the re-established WPV1 in the south-east of the country accounted for four cases; however, that particular lineage has not been detected since March 2011. In July a single case was reported from Uige province in the north, bordering the then active transmission zone of Bandundu and Bas Congo in DR Congo, and representing a re-introduction of WPV1 from that zone.

EVERY LAST CHILD

www.polioeradication.org

Potential Use of Antiviral Agents in Polio Eradication

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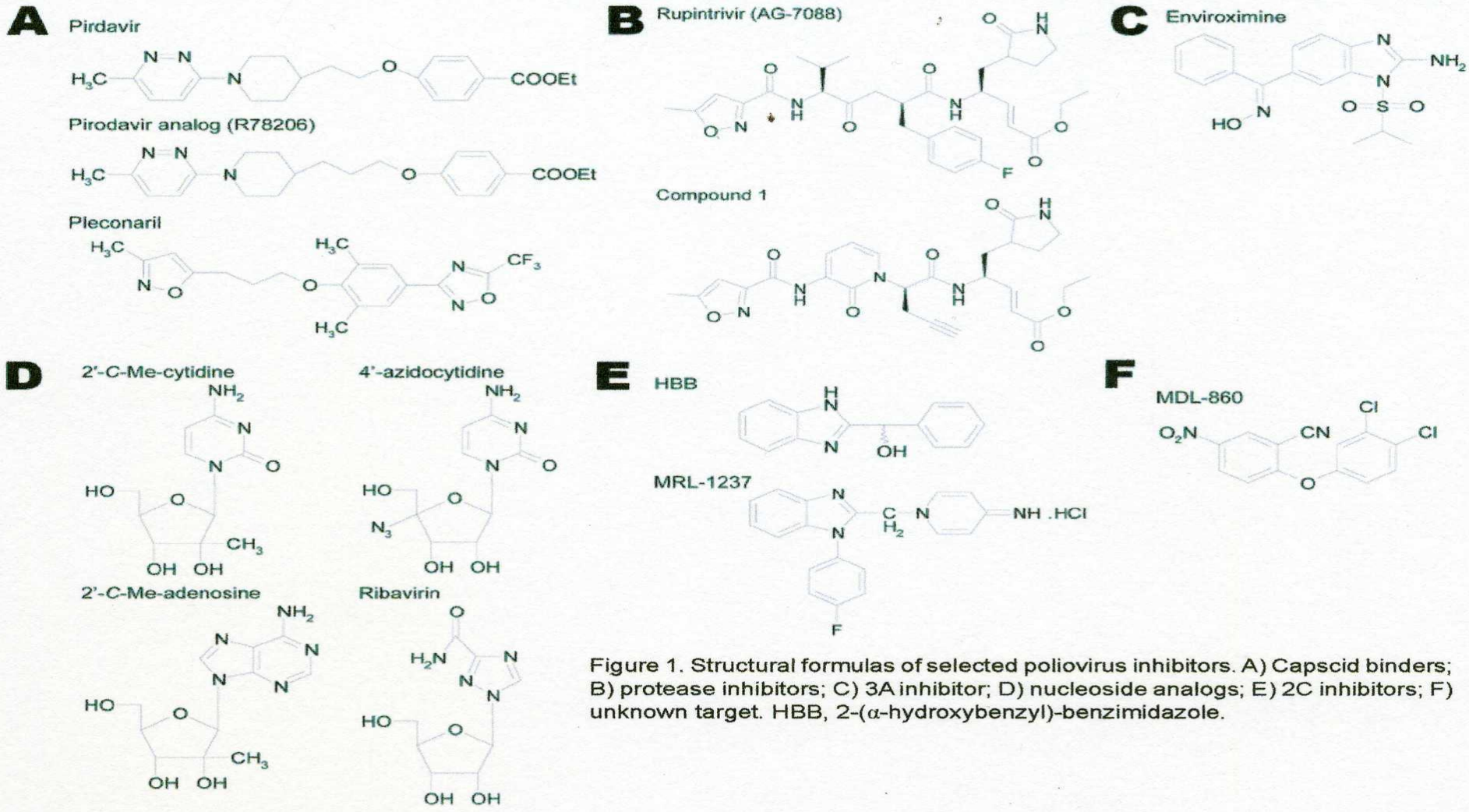


Figure 1. Structural formulas of selected poliovirus inhibitors. A) Capscid binders; B) protease inhibitors; C) 3A inhibitor; D) nucleoside analogs; E) 2C inhibitors; F) unknown target. HBB, 2-(α-hydroxybenzyl)-benzimidazole.

Os "remédios" dos nossos Avós...

Olhem 100 a 120 anos para trás e... PASMEM!!!

Vinho Mariani

O Vinho Mariani (1865) era o principal vinho de coca do seu tempo. O Papa Leão XIII carregava um frasco de Vinho Mariani consigo e premiou o seu criador, Ângelo Mariani, com uma medalha de ouro.

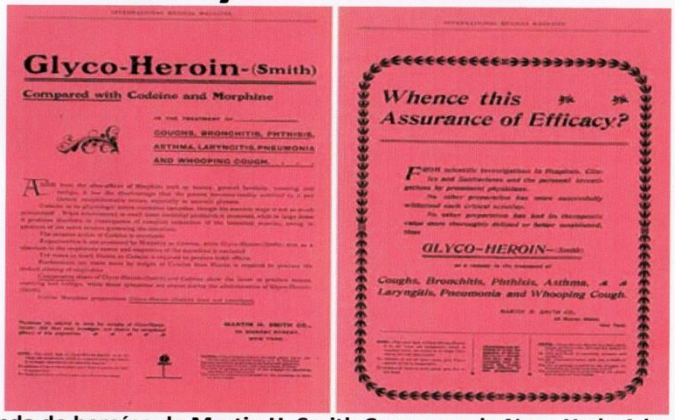
Heroína da Bayer

Um frasco de heroína da Bayer. Entre 1890 a 1910 a heroína era divulgada como um substituto não viciante da morfina e um remédio contra tosse para crianças.

Vinho de coca

O vinho de coca da Metcalf era um de uma grande quantidade de vinhos que continham coca disponíveis no mercado. Todos afirmavam que tinham efeitos medicinais, mas indubitavelmente eram consumidos pelo seu valor "recreador" também.

Glyco-Heroína



Propaganda de heroína da Martin H. Smith Company, de Nova York. A heroína era amplamente usada não apenas como analgésico, mas também como remédio contra a asma, tosse e pneumonia. Misturar heroína com glicerina (e comummente açúcar e temperos) tornava o opiáceo mais agradável para a ingestão oral.

Tablete de cocaína (1900)

Estas tabletes de cocaína eram "indispensáveis para os cantores, professores e oradores". Eles também aquietavam a dor de garganta e davam um efeito "animador" para que estes profissionais atingissem o máximo de sua performance.

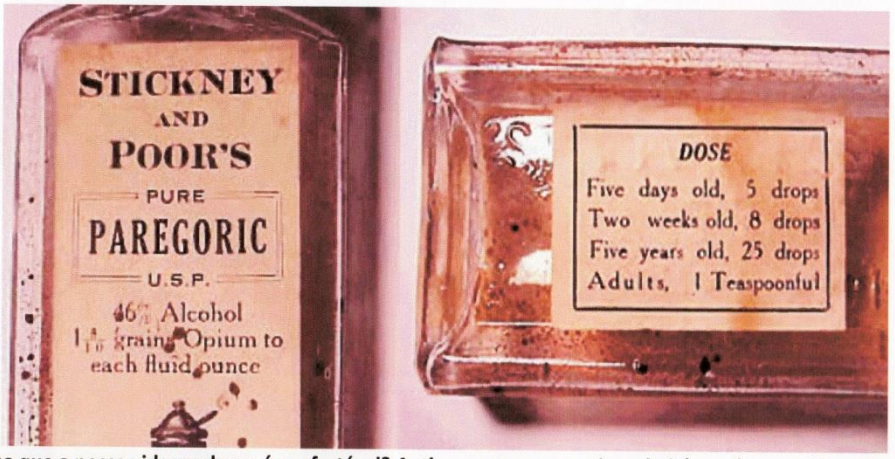
Ópio para a asma

Este National Vaporizer Vapor-OL era indicado "Para asma e outras afecções espasmódicas". O líquido volátil era colocado numa panela e aquecido por um lampião de querosene.

Maltine

Este vinho de coca foi fabricado pela Maltine Manufacturing Company de Nova Yor
A dosagem indicada dizia: "Uma taça cheia junto com, ou imediatamente após, as refei
Crianças em proporção."

Ópio para bebés recém-nascidos



Acha que a nossa vida moderna é confortável? Antigamente para aquietar bebés recém-nascidos não era necessário um grande esforço dos pais, mas sim, ópio. Este frasco de paregórico (sedativo) da Stickney and Poor era uma mistura de ópio e de álcool que era distribuída do mesmo modo que os temperos pelos quais a empresa era conhecida. "Dose – [Para crianças com] cinco dias, 3 gotas. Duas semanas, 8 gotas. Cinco anos, 25 gotas. Adultos, uma colher cheia."

O produto era muito potente, e continha 46% de álcool.

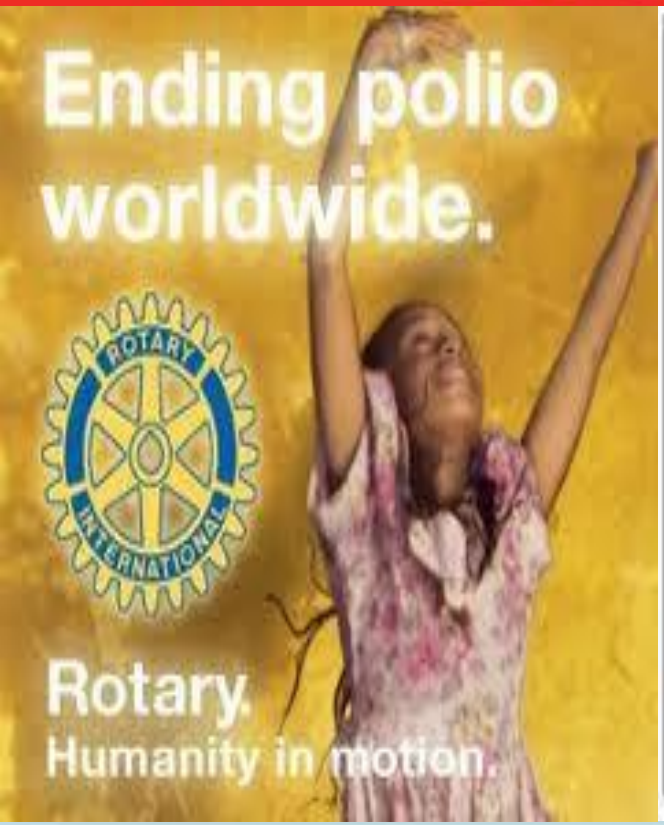
Drops de Cocaína para Dor de Dentes – Cura instantânea

Os dropes de cocaína para dor de dentes (1885) eram populares para crianças. Não apenas

Peso de papel

Um peso de papel promocional da C.F. Boehringer & Soehne (Mannheim, Alemanha), "os maiores fabricantes do mundo de quinino e cocaína". Este fabricante tinha orgulho na sua posição de líder no mercado de cocaína.

END POLIO NOW



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End Polio Now
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PolioPlus

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ROOSEVELT
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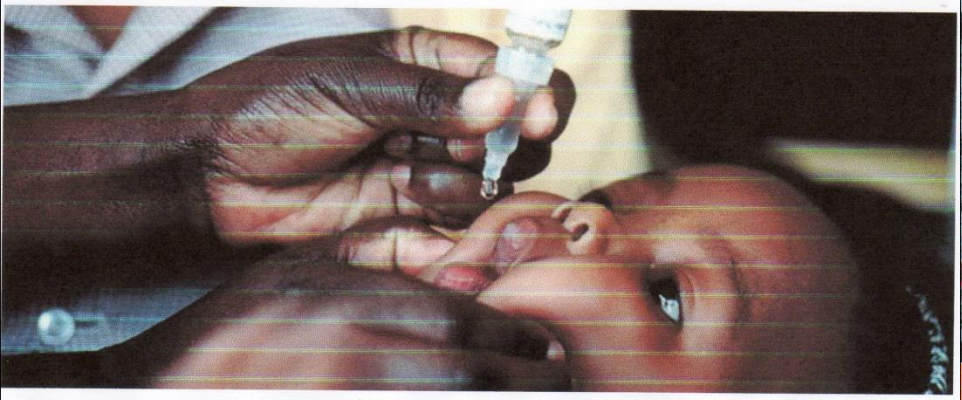
POLIO WORLD

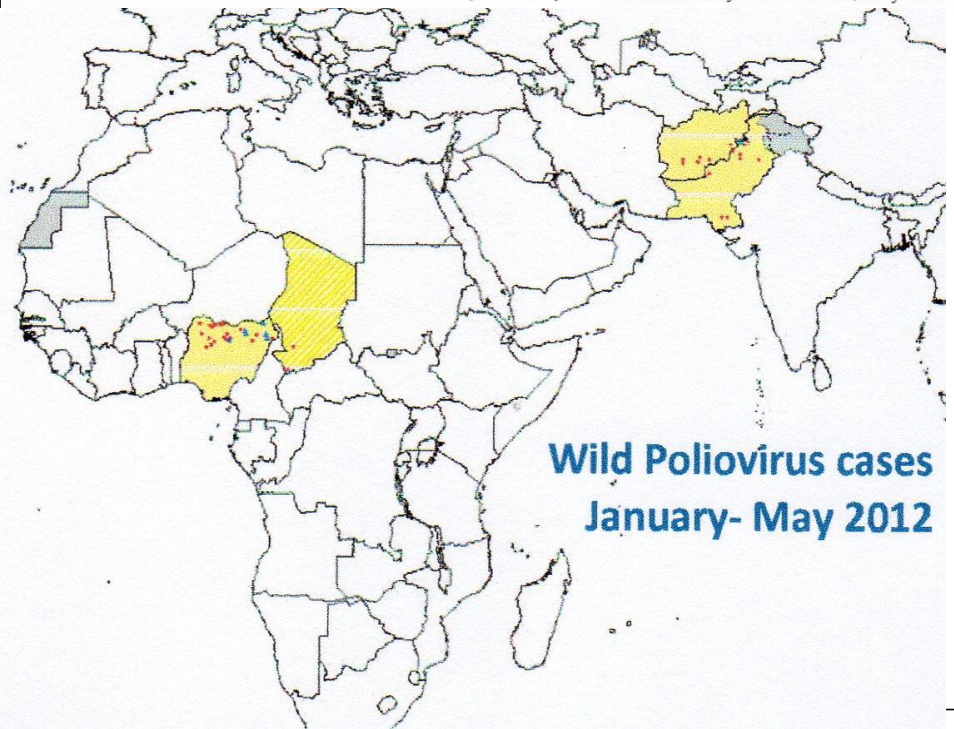
POLIO GLOBAL ERADICATION INITIATIVE

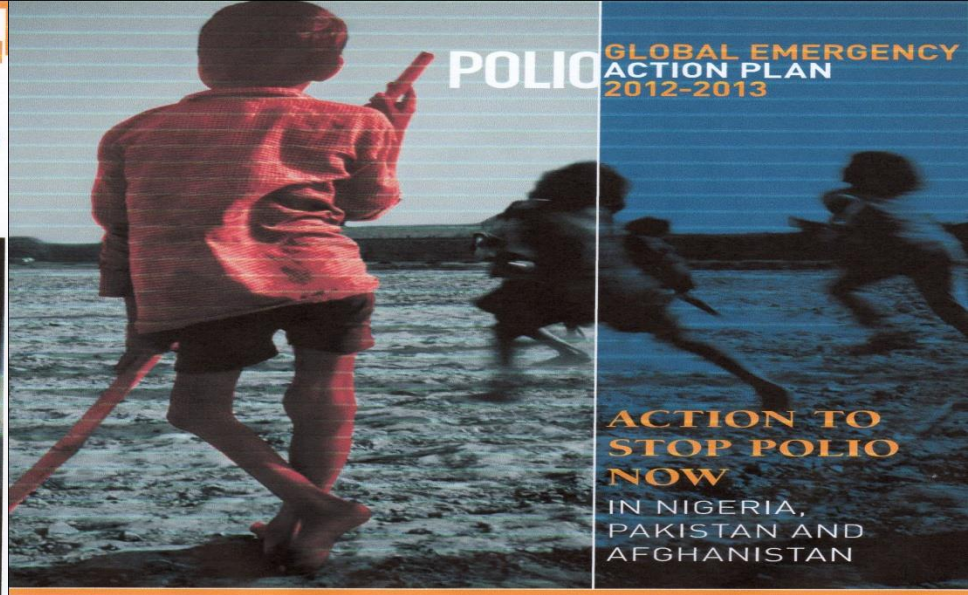
GLOBAL EMERGENCY ACTION PLAN FOR POLIO

The Global Polio Eradication Initiative (GPEI) has launched a global Emergency Action Plan representing urgent escalation of national and international efforts to eradicate polio.



"Do we choose to deliver a polio-free world to future generations, or do we choose to allow 55 cases this year to turn into 200,000 children paralyzed for life, every single year?"
–Kalyan Banerjee, President, Rotary International, May 2012





Developed by the Governments of Nigeria, Pakistan and Afghanistan

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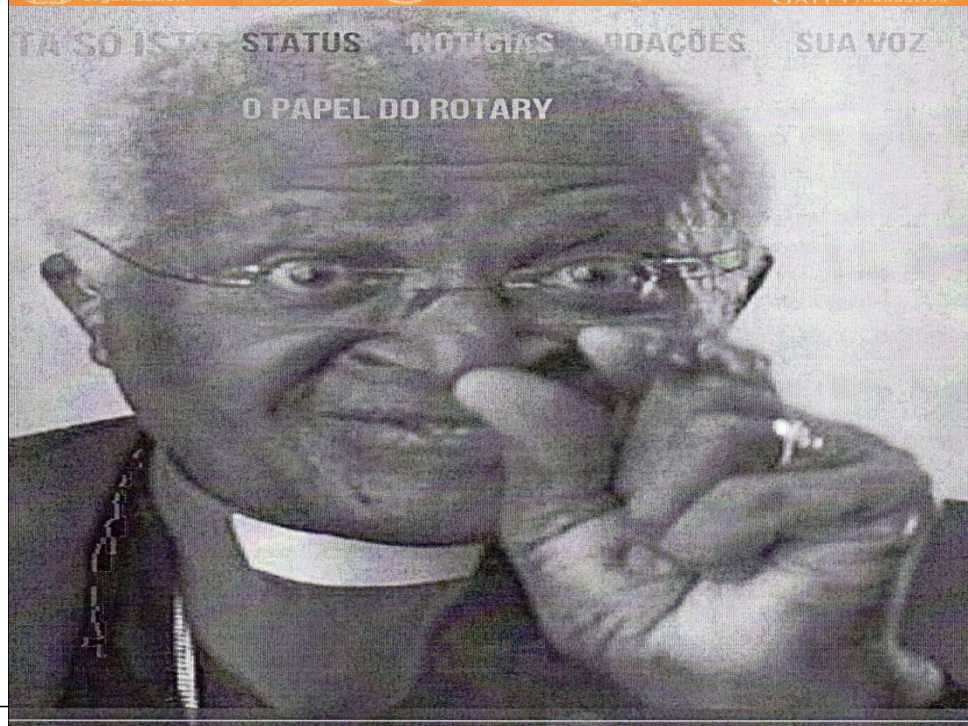
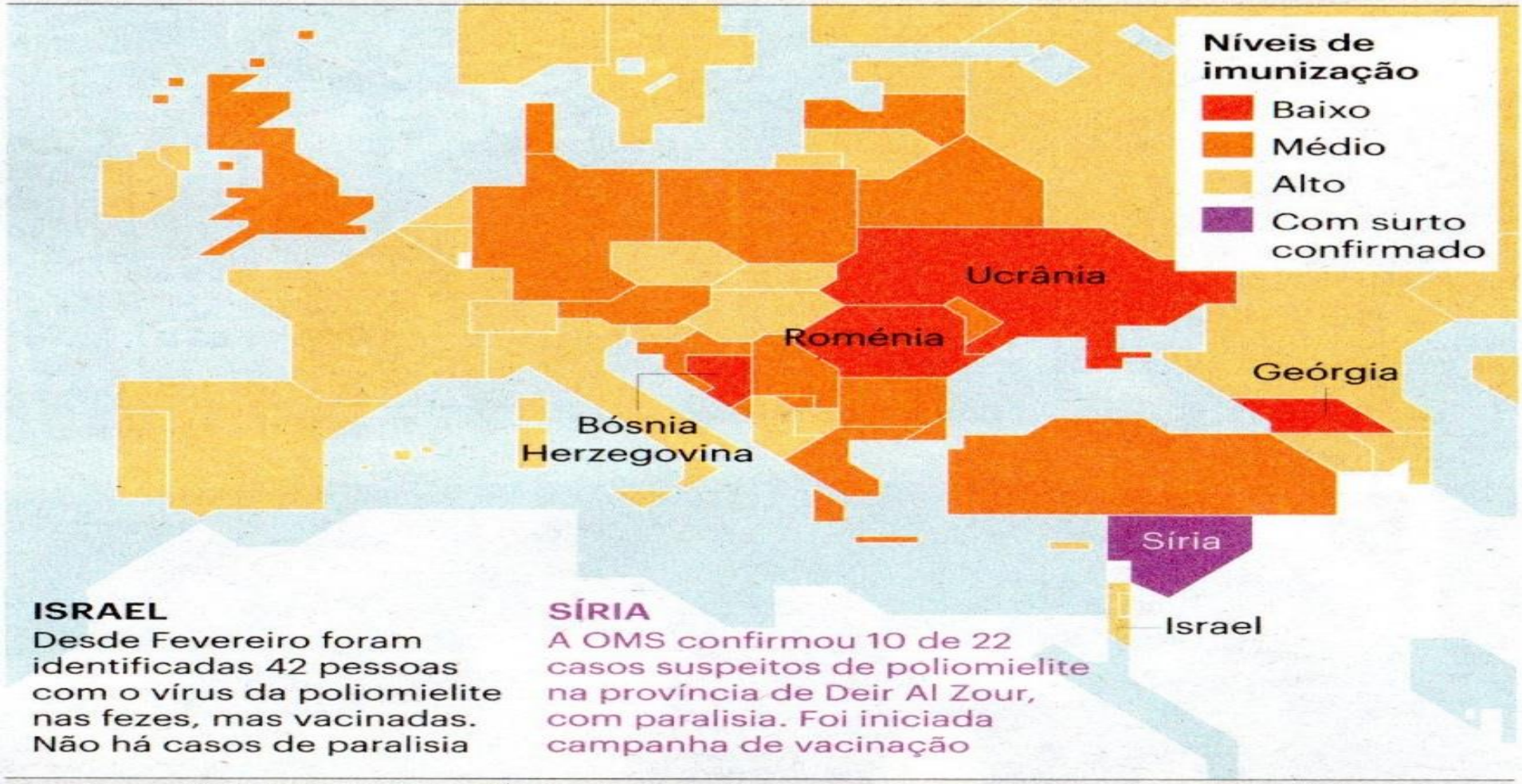


Poliomielite volta à Síria e ameaça a Europa

As péssimas condições sanitárias criadas pela guerra fizeram regressar uma doença que há 14 anos não existia no país e podem trazê-la de volta à Europa, onde não há um caso desde 2002

Uma ameaça real para a Europa



ISRAEL
Desde Fevereiro foram identificadas 42 pessoas com o vírus da poliomielite nas fezes, mas vacinadas. Não há casos de paralisia

SÍRIA
A OMS confirmou 10 de 22 casos suspeitos de poliomielite na província de Deir Al Zour, com paralisia. Foi iniciada campanha de vacinação

Fontes: revista *Nature* e Organização Mundial da Saúde

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Vítimas II: E a Família ....