

Global Situation of Poliomyelitis and Acute Flaccid Paralysis surveillance

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Global situation-1988(WHO)



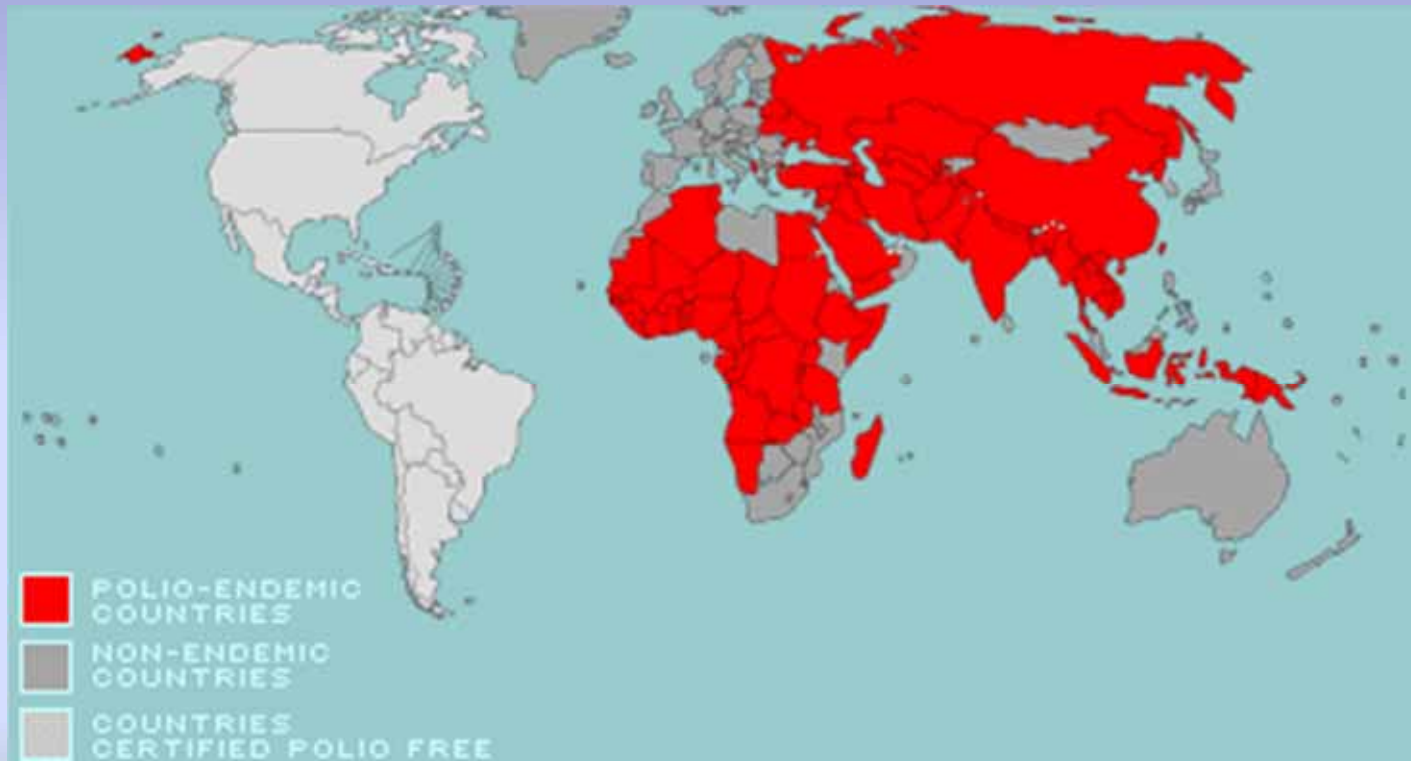
ACHIEVEMENTS

- In 1988 polio was widely endemic on five continents with more than 125 countries affected.
- In 1988- polio virus caused paralysis in nearly 1000 children daily.
- The GPEI has reduced the cases of polio by nearly 99% and saved 5 million children from paralysis.
- In 1999, type 2 was eradicated
- In 2005, only 1951 cases were reported.
- In 2006 only 4 countries remain polio-endemic.
- In 2005 alone, more than 400 million children were immunized in 49 countries during 220 supplementary immunization activities.
- In 2006, the partners of GPEI immunized 375 million children in 36 countries, using 2.1 billion doses of vaccine.
- Polio surveillance improved, as reflected by the increase in AFP rates

Achievements[cont]

- In many countries, the GPEI has expanded the capacity to tackle other diseases
- Has brought about improved disease-reporting and surveillance systems
- Routine immunization services have been strengthened.
- Complementary activities such as Vit A distribution,during SIAs, have helped improving health status of millions of children.

Global situation-1994(WHO)



Global situation-1998(WHO)

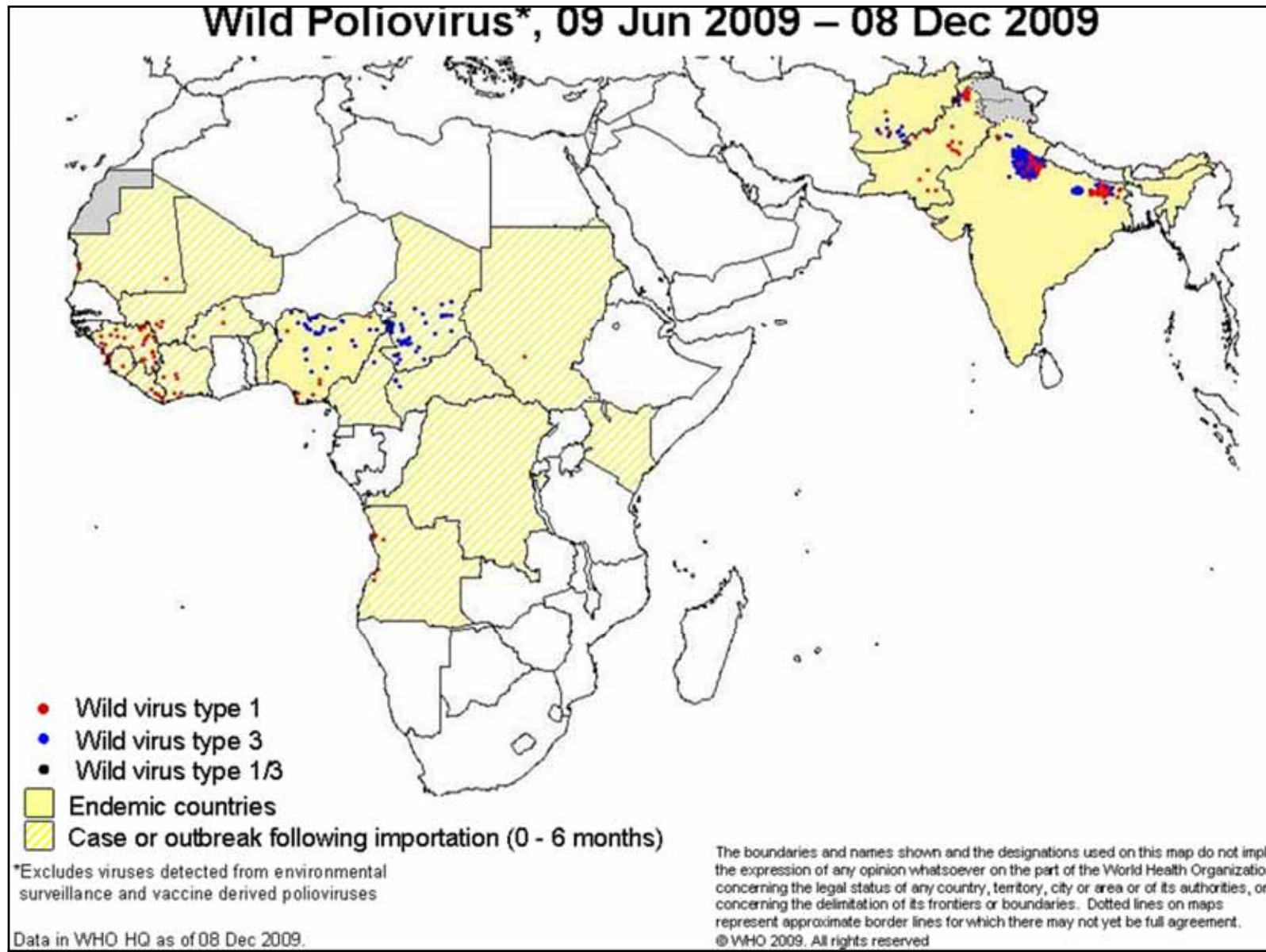


Global situation-2000(WHO)

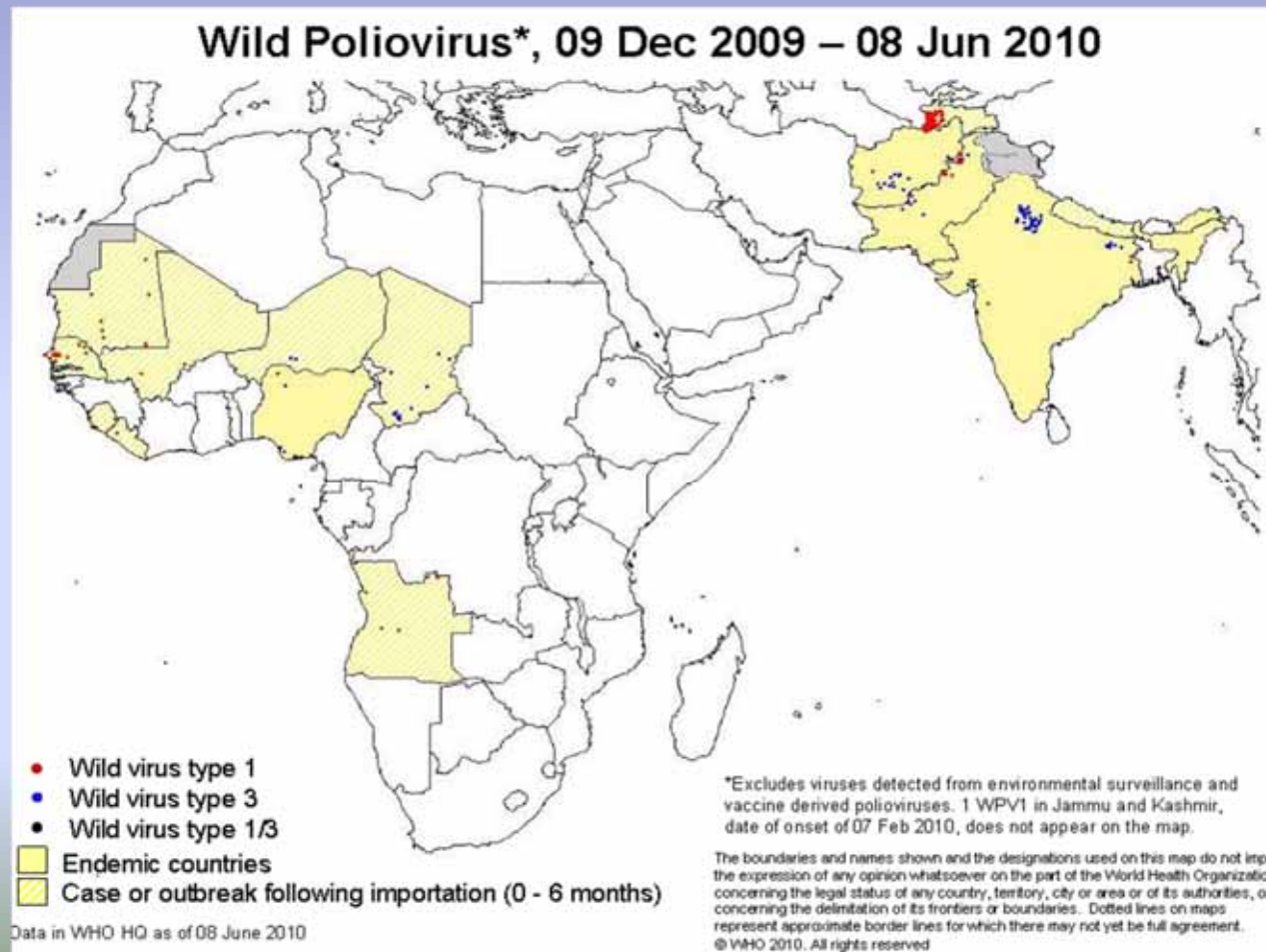


Global situation-2003(WHO)

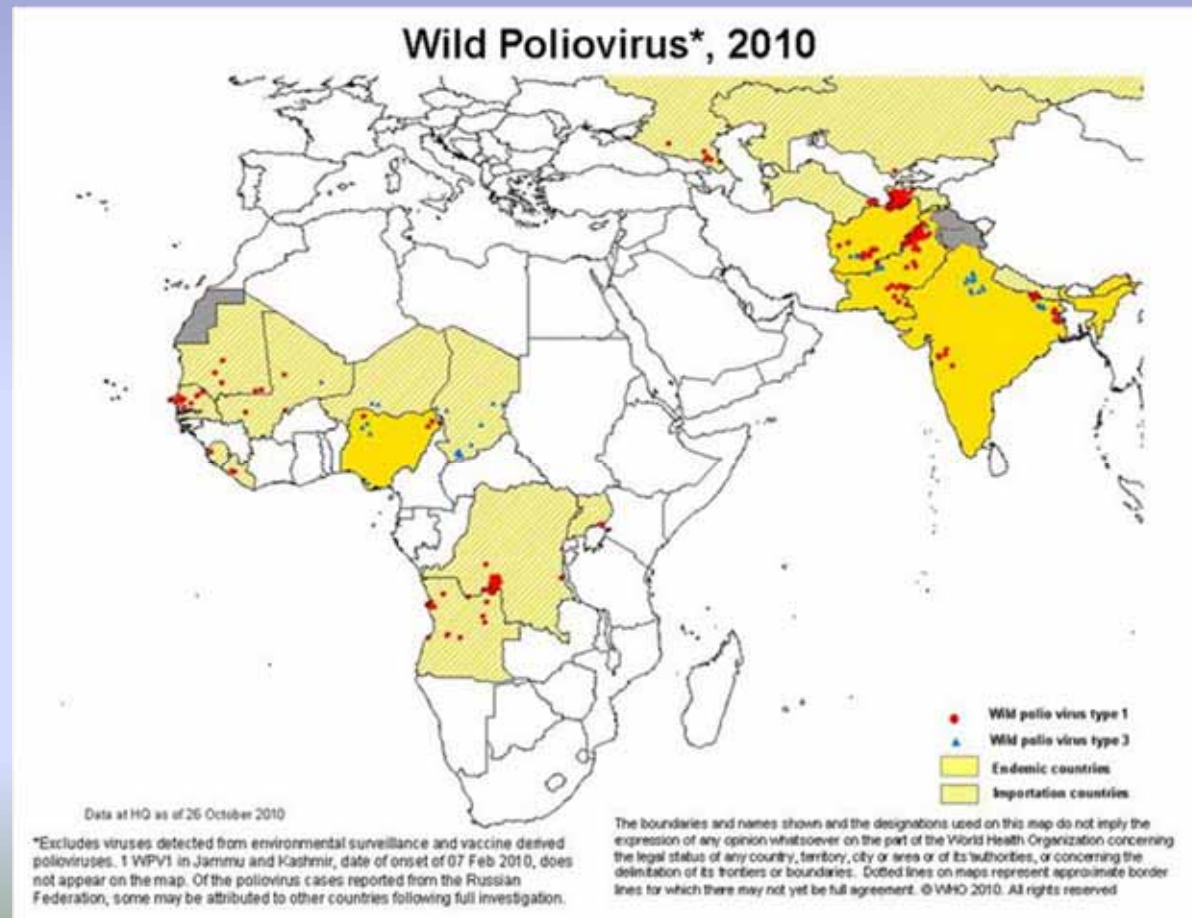


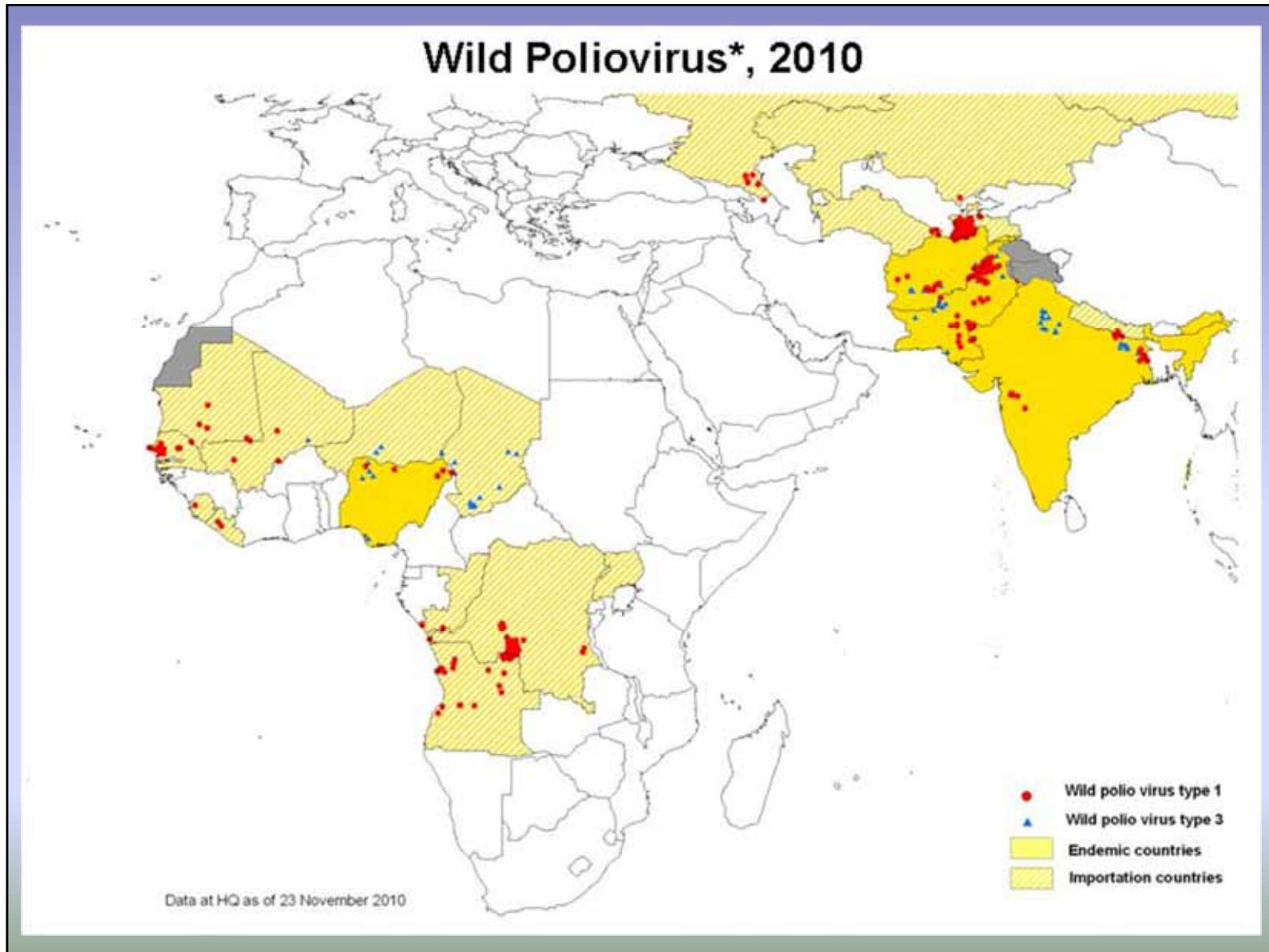


Poliomyelitis- Global situation



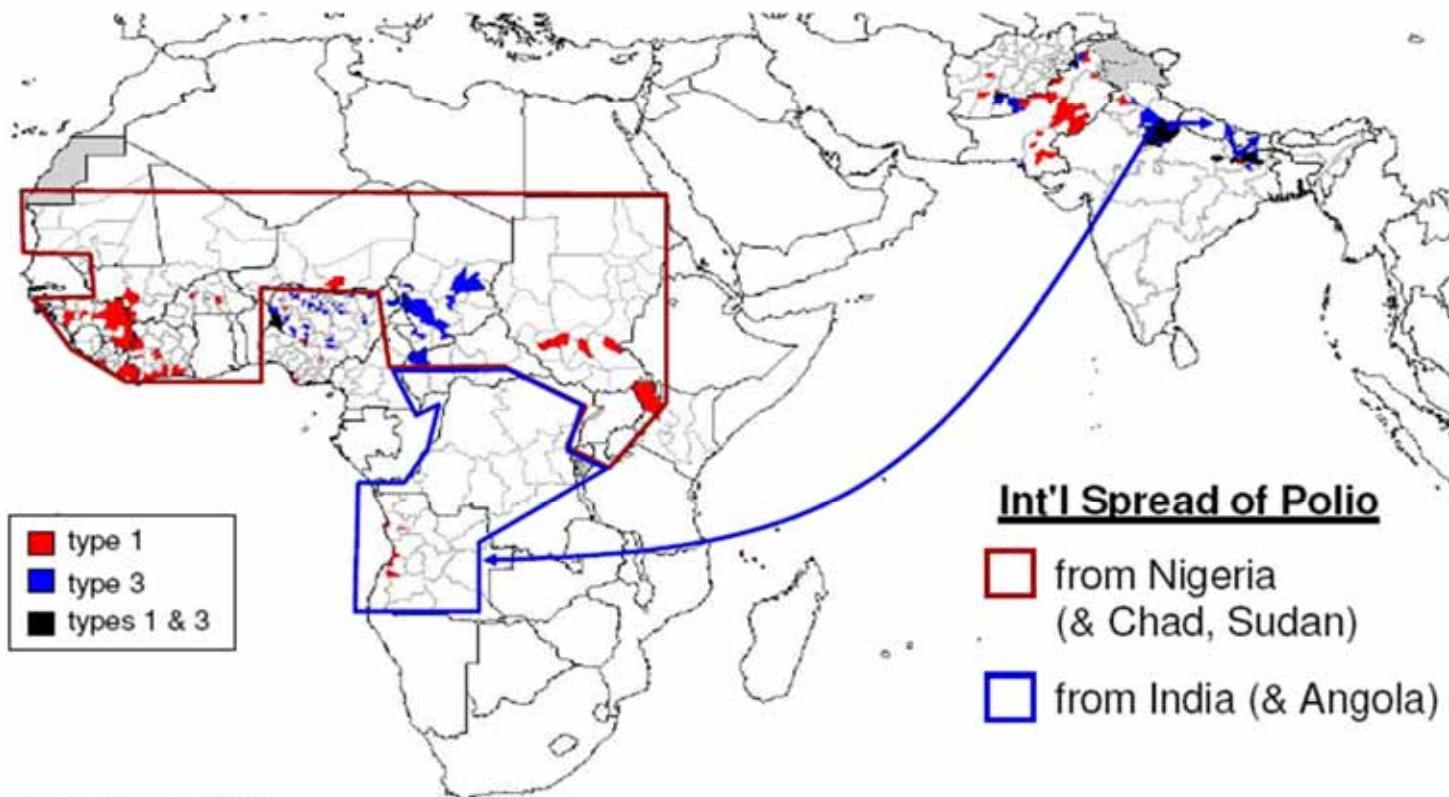
Global situation





Highest-Risk Areas for Importations & Outbreaks

*Polio-reporting districts, last 6 months**



* 11 May– 10 Nov 2009

Global Case Count

	Year-to-date 2010	Year-to-date 2009	Total in 2009
Total cases			
Globally	787	1337	1657
- in endemic countries:	180	1051	1256
- in non- endemic countries:	587	286	348

Tajikistan and surrounding countries

- Poliovirus type 1 had been detected in diagnostic samples from cases of Acute Flaccid Paralysis (AFP) from Tajikistan in April 2010. This represented the first importation of poliovirus in the WHO European Region since it was certified polio-free in 2002.
- 458 cases of acute flaccid paralysis had been reported from Tajikistan(WPV1) . Ten of the children died. The vast majority of the cases are children < five years of age. **Preliminary data suggests >45% had four or more doses of oral polio vaccine.**
- Tajikistan's last case of clinically confirmed polio was in 1997; the last case of polio confirmed by virological testing was in 1991. **Reported OPV3 coverage nationwide was 87% in 2008**

Tajikistan and surrounding countries

Most recent case in **Tajikistan was in July 2010**

- Wild poliovirus type 1 (WPV1) had been detected in four acute flaccid paralysis (AFP) cases in Russia.
- 14 cases identified in the Russian Federation, 3 identified in Turkmenistan, and one identified in Kazakhstan. –last case in September 2010

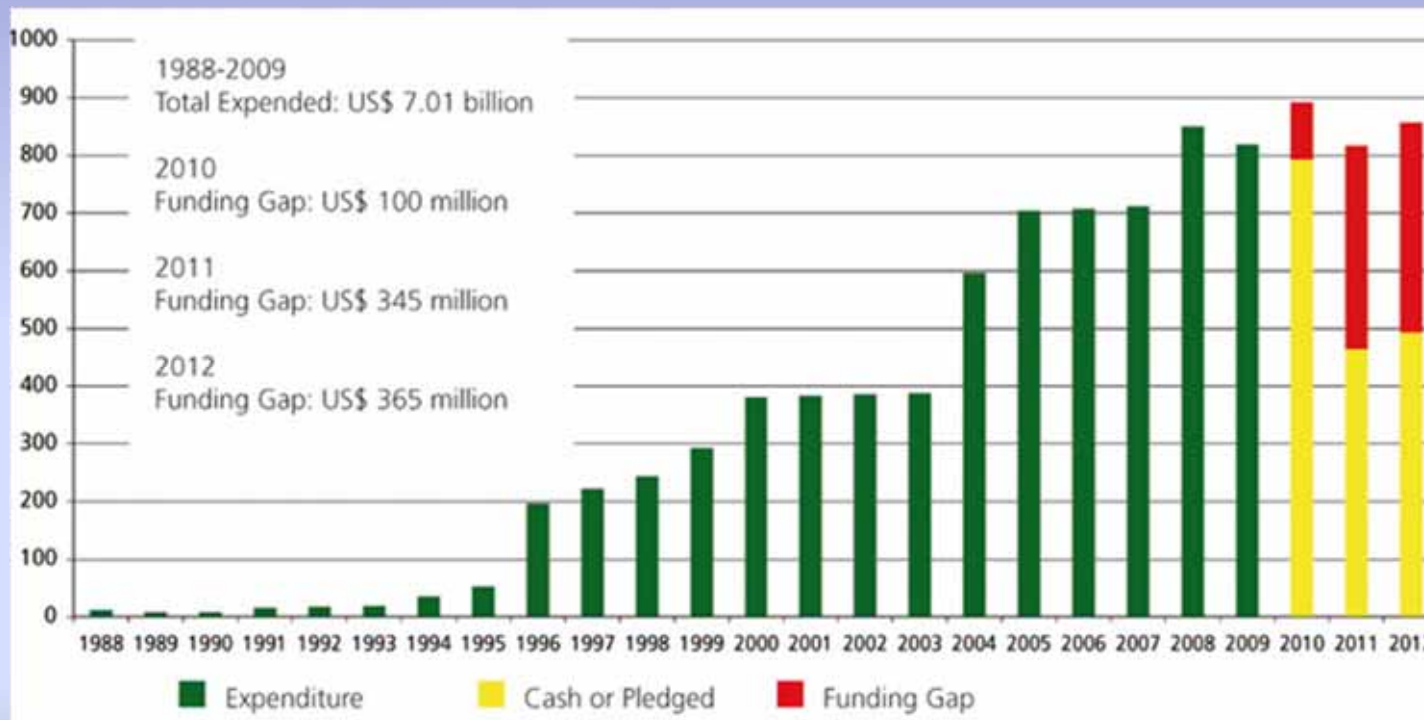
Republic of Congo

226 cases of acute flaccid paralysis and 97 deaths have been reported from the site of the acute poliomyelitis outbreak centered in Pointe Noire, Republic of Congo. Four cases have been confirmed to have been caused by wild poliovirus type 1 and laboratory testing continues. **The majority of the reported cases and deaths have occurred in the population aged over 15 years.**

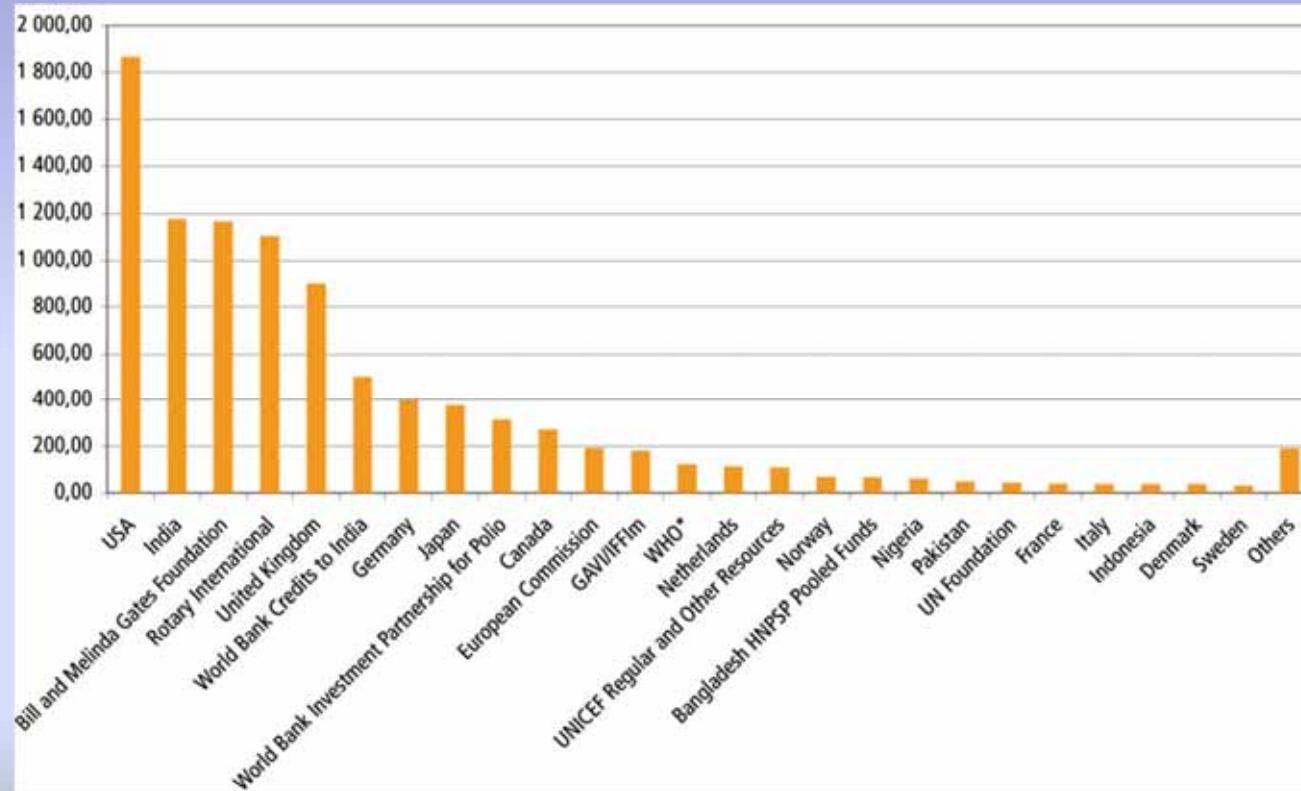
Republic of Congo

- Genetic sequencing has determined that the cases are caused by a poliovirus most closely related to that circulating in neighbouring Angola. Congo had recorded its last case of indigenous polio in 2000.
- **It is an unusual outbreak of polio that is primarily claiming victims amongst adults**

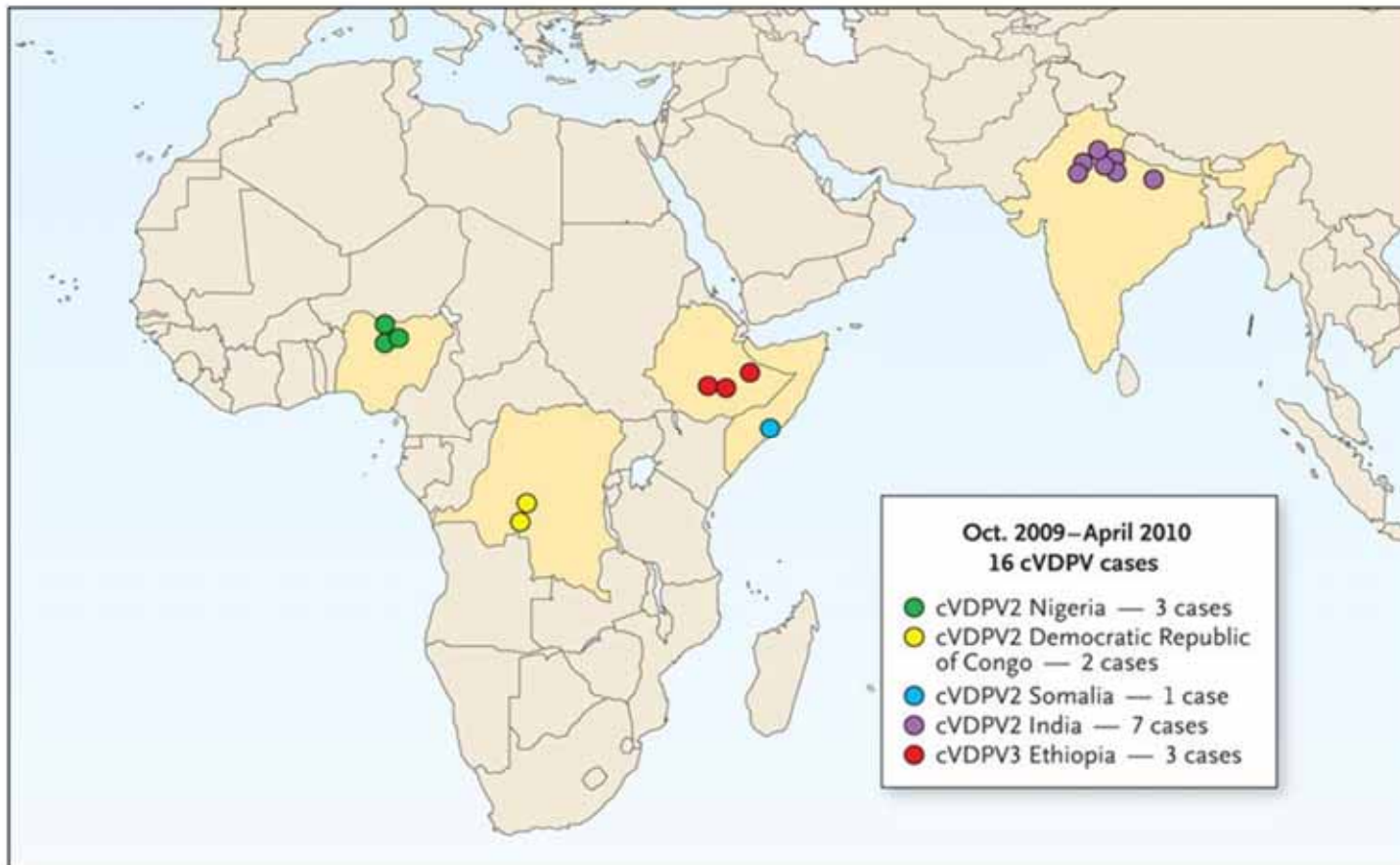
Annual expenditure 1988- 2009, Funding gaps 2010-2012(USD millions)



GPEI-Contributions 1985-2012 (USD Millions)



Current Outbreaks of Circulating Vaccine-Derived Poliomyelitis.(WHO)



Why talk of poliomyelitis today?

- Four countries in the world still remain polio-endemic, down from more than 125 in 1988. The remaining countries are Afghanistan, India, Nigeria and Pakistan.
- War, conflict, lack of health infrastructure, lack of resources are major obstacles
- As long as a single child remains infected, children in all countries remain at risk of contracting polio. Recent outbreaks in Tajikistan and Angola, which had previously been free of the disease, were imported from endemic countries.
- More cases this year in non endemic countries.

Why talk of poliomyelitis today?

- \$2.6 billion is needed to fight polio for the 2010 to 2012 period and there is currently a funding gap of \$810 million.
- The danger is that, as the number of polio cases continues to fall and the risk of infection recedes, people will become complacent about polio and let their guard down—enabling the disease to stage a come-back.

How vulnerable are we?

- We still have travel links with countries where wild polio is circulating, thus importation is possible
- We cannot ignore the possibility of having circulating vaccine derived polio virus and /or Vaccine Associated Paralytic Poliomyelitis

Why talk of poliomyelitis today?

- It is a crippling disease associated with significant morbidity and mortality and it is a crippling disease proving tough to beat
- Poliomyelitis, or polio, is a viral disease that can cause irreversible paralysis in a matter of hours.
- There is no cure for polio, it can only be prevented
- Among those paralysed, 5 percent to 10 percent die when their breathing muscles become immobilized.

How about receptivity?

- Immunization coverage is high in Mauritius. Low risk
- However, we may still have a few expatriates/ mobile population who would not have completed childhood vaccination
- Can we safely relate level of population immunity with vaccination coverage?
- Are we having an increase in number of persons with immunodeficiency ?
- Environmental sanitation is good

Safeguard against reintroduction of polio virus

- High immunization coverage rate
- Proper sanitary conditions- safe water supply
- Proper surveillance system- **including highly sensitive AFP surveillance**(also environmental and surveillance of enteroviruses)
- Ability to respond promptly to an eventual introduction of the wild polio virus

Rationale for surveillance of poliomyelitis

- Poliomyelitis is targeted for **eradication**. Highly sensitive surveillance for acute flaccid paralysis (AFP), including immediate case investigation, and specimen collection are critical for the detection of wild poliovirus circulation with the ultimate objective of polio eradication. AFP surveillance is also critical for documenting the absence of poliovirus circulation for polio-free certification

Recommended types of surveillance

- Aggregated data on AFP cases should be included in routine monthly surveillance reports
- Designated reporting sites at all levels should report at a specified frequency (e.g. weekly or monthly) even if there are zero cases (often referred to as "zero reporting")
- All outbreaks should be investigated immediately
- All AFP cases under 15 years of age or with paralytic illness at an age where polio is suspected should be reported immediately and investigated within 48 hours, and two stool specimens should be collected 24-48 hours apart and within 14 days of the onset of paralysis
- Active surveillance: Regular weekly visits should be made to selected reporting sites that are most likely to admit acute flaccid paralysis patients (e.g. major hospitals, physiotherapy centers) to look for unreported AFP cases

Case Definition

- **Case Definition:**
- In the Global Polio Eradication Initiative (PEI), acute flaccid paralysis is defined as:
 - *Any case of AFP in a child aged <15 years, or any case of paralytic illness in a person of any age when polio is suspected.*
 - **Acute:** *rapid progression of paralysis from onset to maximum paralysis*
 - **Flaccid:** *loss of muscle tone, “floppy” – as opposed to spastic or rigid*
 - **Paralysis:** *weakness, loss of voluntary movement*
- Any case meeting this definition undergoes a thorough investigation to determine if the paralysis is caused by polio

Components of AFP Surveillance

- Active case detection- visits to facilities
- zero reporting
- AFP case notification: immediate notification of AFP cases is essential:important activities including rapid case investigation with stool collection, outbreak response immunization, and active searches for additional cases in the community should occur early

Components of AFP Surveillance

- **Case and laboratory investigation**

All AFP cases are immediately investigated, usually within 48 hours of notification

The complete case investigation includes the history (including details of immunization and travel), physical examination, collection and transportation of stool specimens for laboratory testing, search for additional cases and outbreak response investigation (ORI) in the affected community, 60-day follow-up examination, analysis of laboratory results and case classification

Components of AFP Surveillance

- **Stool specimen collection and transportation**

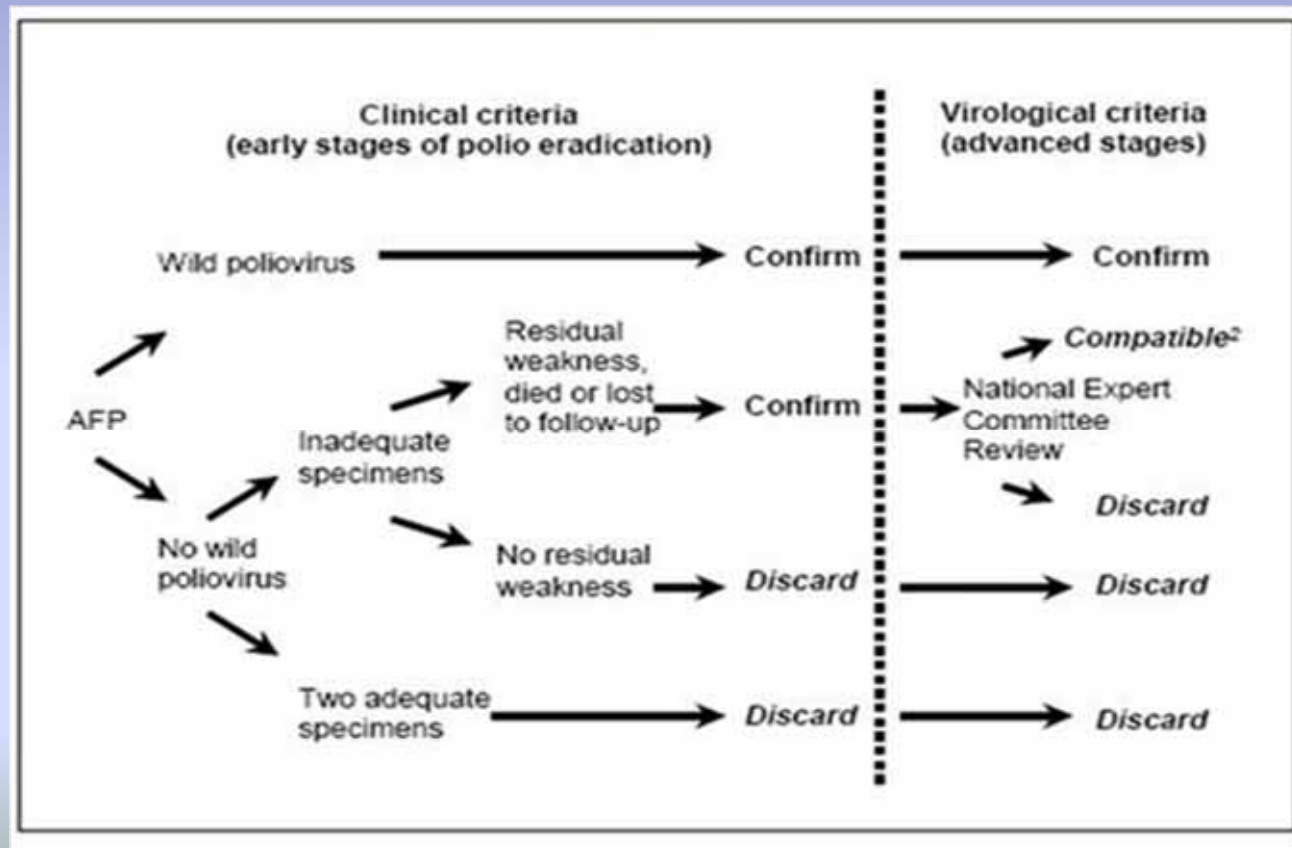
Collection of stool specimens from every AFP case is a critical aspect of the polio eradication strategy. Only by examination of the child's stool specimen in a WHO-accredited laboratory can it be determined whether or not poliovirus is the cause of the child's paralysis.

From every case of AFP, two stool specimens are collected, and must be collected as soon as possible after the onset of paralysis in the child – ideally within 14 days of onset of paralysis and at least 24 hours apart

Components of AFP Surveillance

- The specimens are collected, labeled and then transported in the “cold chain” – on frozen ice packs or ice, in a stool specimen carrier or a vaccine carrier specifically designated for this purpose – to one of India’s eight WHO-accredited polio laboratories. A standard lab request form (LRF), which includes the unique identification number that is assigned to each AFP case, is also filled out by the investigator and accompanies the stool specimen.

Classification of cases



Surveillance indicators

- **1. Non-polio AFP rate in children < 15 years of age. (Target $\geq 1/100,000$)**

- **Non-Polio AFP Rate =**

Number of reported non-polio AFP cases < 15 years of age x 100,000

Total number of children < 15 years of age

The non-polio AFP rate is an indicator of surveillance sensitivity. If it is < 1/100,000 then the surveillance system is probably missing cases of AFP.

Surveillance indicators

- **Completeness of weekly “zero” reporting. (Target $\geq 90\%$)**

- **% Complete =**

Number of Weekly reports received x 100%

Number of Weekly reports expected

- **Timeliness of weekly “zero” reporting. (Target $\geq 80\%$)**

- **% timely =**

Number of weekly reports received before a specified deadline X100%

Number of weekly reports expected

Surveillance indicators

- **Reported cases investigated \leq 48 hours of report (Target \geq 80%)**

Every reported case of AFP is a public health emergency to be investigated by a trained, designated case investigator within 48 hours of receiving the report.

- **Reported AFP cases with 2 stool specimens collected \leq 14 days since paralysis onset (Target \geq 80%)**

Surveillance indicators

- **Reported AFP cases with a follow-up exam at least 60 days after paralysis onset to verify the presence of residual paralysis or weakness (Target \geq 80%).**

AFP cases that should undergo 60-day follow-up include a) cases with inadequate or no stool specimens; b) cases with isolation of vaccine virus from the stool; c) cases with isolation of wild poliovirus from the stool; and d) any case that the investigator thought was strongly suggestive of poliomyelitis on initial examination.

Surveillance indicators

- **Specimens arriving at the national laboratory ≤ 3 days of being sent (Target $\geq 80\%$)**
- **Specimens arriving at the laboratory in “good condition” (Target $\geq 80\%$)**
- **“Good condition” means that upon arrival:**
 - **there are frozen ice packs or ice, or a temperature indicator (showing $< 8^{\circ}$ C) in the container**
 - **the specimen volume is adequate (> 8 grams)**
 - **there is no evidence of leakage or desiccation**
 - **appropriate documentation (laboratory request/reporting form) is completed**

Surveillance indicators

- **Specimens with a turn-around time ≤ 28 days (Target $\geq 80\%$)**

The turn-around time is the time between specimen receipt and reporting of results

- **10. Stool specimens from which a non-polio enterovirus is isolated (Target $\geq 10\%$)**

This is an indicator of the quality of the “reverse cold chain” (i.e. that the specimen has been continuously maintained at temperatures $< 8^{\circ}$ C during transportation from the field to the laboratory) and how well the laboratory is able to perform routine isolation of enteroviruses.

AFP Surveillance in Mauritius

- All activities of the AFP surveillance are carried out under the aegis of the Ministry of Health & Quality of Life, thus making full use of the existing health system, in terms of infrastructure, qualified and experienced human resources and also the available logistic support.
- Every week, six Senior Community Health Nursing Officers undertake regular visits to a total of 22 AFP Surveillance sites, scattered evenly in the 6 health regions, under the supervision of a National Surveillance Officer.

AFP Surveillance in Mauritius

- In 2005, 100% of the stools specimen collected from AFP patients were adequate and AFP detection rate was 2 cases per 100,000 children under 15 years.
- In 2006 and 2007, eight cases of AFP were detected annually. In 2008, five such cases have been detected **and in 2009 only one case.**

Surveillance indicators, polio endemic regions October 2008 - September 2009

Non-polio AFP rate



Adequate stool collection rate



The designations used on this map do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its borders. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data in WHO HQ as of 27 Oct 2009

Thank You