

# **Acute Flaccid Paralysis Surveillance**

## **Background**

The global effort to eradicate polio has become the largest public health initiative in history and is spearheaded by the World Health Organisation (WHO). Polio is one of only a limited number of diseases that can be eradicated. This is because polio only affects humans, an effective, inexpensive vaccine is available and immunity is life-long. There are no long-term carriers of the disease, no animal or insect reservoir and the virus can only survive for a short time in the environment.

The maximum benefits of this global eradication of polio will only be realised when immunisation against poliovirus will no longer be required. Prior to stopping polio immunisation it will be necessary to certify the absence of wild poliovirus circulation from every country in the world. WHO has appointed an independent Global Commission to manage the certification process. The most important criteria for certification of a region or the world, is the absence of wild poliovirus for at least three years under conditions of certification-standard surveillance.

## **AFP Surveillance**

Acute flaccid or floppy paralysis is defined as any case of new onset of hypotonic weakness in a child aged less than 15 years of age. This includes possible illness due to Guillian-Barré syndrome, transverse myelitis, traumatic neuritis, viral infections caused by other enteroviruses, toxins and tumours. Isolated facial paralysis is not included. In the early stages of the disease polio may be difficult to differentiate from other forms of AFP. Therefore, to insure that no case of polio goes undetected surveillance targets a symptom (AFP) rather than a specific disease (e.g. polio).

AFP surveillance is the intelligence network that underpins the entire eradication initiative. The objective of AFP surveillance is to detect poliovirus wherever it may still circulate. It is also the key to detecting re-importation of poliovirus into polio-free areas. The quality of AFP surveillance becomes crucial in countries approaching the final phase of polio eradication and forms the basis of the documentation needed for certification of polio-free status. Without high quality surveillance, it is impossible to

prove the successful interruption of wild poliovirus transmission. All cases of AFP in children less than 15 years and all cases of suspected poliomyelitis in individuals of any age should be reported. All AFP cases should have a full clinical, epidemiological and virological investigation.

### **AFP surveillance in the Republic of Ireland**

AFP surveillance was introduced in the Republic of Ireland in 1998. Under the Global Polio Eradication Programme participating hospitals in the Republic of Ireland are required to complete a surveillance report form (AFP1) each month. This report should be sent to the National Virus Reference Laboratory (NVRL) at UCD, even in the absence of AFP cases (zero reporting).

Surveillance for acute flaccid paralysis must meet certain stringent criteria in each country before certification can be considered.

**(1) Surveillance should be sensitive enough to detect at least one case of non-polio AFP for every 100,000 children under-15 years of age.** This parameter is used as a measure of the sensitivity of the surveillance system in operation in each country. Therefore, in the Republic of Ireland when the clinician detects a case of AFP, the NVRL should be notified immediately by telephone, so that no case of AFP goes unreported. An AFP form should be completed and returned to NVRL. (AFP surveillance form is available on HPSC website, click [here](#))

**(2) At least two stool samples, taken 24 hours apart and within 14 days of the onset of illness should be collected from at least 80% of these cases.** These stool samples should be sent to the NVRL for appropriate virological investigation (for further details contact NVRL at 01 2697611).

**(3) Detailed investigation of suspected polio cases should include clinical, epidemiological and virological examination as well as a follow-up examination for residual paralysis after 60 days.** Once these investigations are complete the AFP updated surveillance form should be returned to NVRL.

**(4) A final classification of the case should be made by a committee of experts on the basis of these examinations.**

The NVRL collates data received from participating hospitals and reports weekly to the WHO by direct web entry. Results of the virological tests performed by NVRL are reported by e-mail to the WHO on a monthly basis.

**Ireland’s performance in AFP surveillance**

In 2008, the annualised rate of non-polio AFP in children under 15 years of age in the Republic of Ireland was 0.44 per 100,000, failing to reach the target rate of  $\geq 1$  per 100,000. Based on this performance indicator alone the national AFP surveillance system has performed badly in 2008. Therefore, for those involved in the diagnosis and treatment of AFP it is imperative that the steps outlined above are strictly adhered to. Data on AFP surveillance and performance indicators are presented in Table 1.

**Table 1.** WHO recommended standards for AFP surveillance and Irish performance

WHO target	Ireland’s performance 2008
	<i>Ireland’s performance</i>
Ability to detect at least one non-polio AFP case /100,000 children < 15 years of age*	0.44/100,000 non-polio AFP cases reported in children < 15 years of age
Two adequate specimens collected from at least 80% of AFP cases**	Two adequate specimens collected from none of the AFP cases
All specimens processed in WHO accredited lab	0 specimens processed in NVRL

\* *Expected non-polio AFP rate (background rate)*

\*\* *At least 24 hours apart within 14 days of onset of paralysis, adequately shipped to the laboratory*

Ireland was certified polio free (together with the other countries in the European region) in 2002. Recent importation of poliovirus into the European region increases the risk of transmission in the European region. Continued high quality surveillance is important to maintain certification of polio-free status.

In conclusion good quality AFP surveillance is absolutely imperative to ensure the successful eradication of polio. The full cooperation by all participants is essential, in particular, for the immediate notification of AFP cases to the VRL and the collection of stools samples within 14 days of onset.

Additional information on the WHO polio eradication initiative and AFP surveillance is available at <http://www.who.int/topics/poliomyelitis/en/>.

Most recent information on AFPU surveillance in the European region can be access at the CISID website, located [here](#).

For additional queries on AFP reporting please contact either HPSC at 01 876 5300 or NVRL at 01 269 7611.

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