How to report a case of acute flaccid paralysis/ acute flaccid myelitis (AFP/AFM)

Information for health professionals
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1. Introduction

Public Health England has received an increase in reports of acute flaccid paralysis and acute flaccid myelitis (AFP/AFM) cases in England, particularly since September 2018. So far, 28 cases have been reported this year. An increase in reports of cases has also been observed in the United States of America (USA) this year: https://www.cdc.gov/acute-flaccid-myelitis/afm-surveillance.html.

Whilst AFP/AFM is not on the list of notifiable diseases in the UK, health professionals are encouraged to report cases as part of national surveillance for polio. This is a World Health Organization requirement to demonstrate that the UK continues to be free of wild poliovirus infection.

In response to the apparent increase, PHE has declared a national incident, with the aim of strengthening current surveillance for AFP/AFM and to gather information on clinical history, possible risk factors and outcomes for reported cases. Health professionals are requested to report all cases of AFP/AFM that meet the case definition below, including retrospective reporting for cases with an onset date in 2018.

“Acute flaccid paralysis/myelitis in an individual aged 30 and under, not explained by a non-infectious cause”

AFP/AFM is characterised by rapid onset of weakness of an individual's extremities, often including weakness of the muscles of respiration and swallowing, progressing to maximum severity within 10 days. The term 'flaccid' indicates weakness accompanied by hyporeflexia or areflexia in the affected limb(s).

This document describes how reports should be made to PHE and advised virological investigations.

2. Aims of surveillance

Aims of surveillance are to:

- to investigate and exclude poliovirus infection
- to investigate the potential contribution of other enteroviruses, especially enterovirus D68
- to systematically characterise the illness and document long-term sequelae
3. How to report

Health professionals managing patients meeting the above case definition should contact the Duty Doctor at the national PHE offices in Colindale by calling 020 8200 4400, during daytime hours (9am to 5.30pm, Monday to Sunday), to obtain advice about virological investigations.

The Duty Doctor will request the following information:

- patient details
- presenting symptoms, particularly neurological and respiratory symptoms
- investigations performed to date, including virology, and results
- details and results of any neuroradiological investigations
- polio vaccination history, if available
- recent overseas travel history, if available

Retrospective reporting is encouraged. Cases with onset in 2018 who have since died or been discharged home should be reported by completing the online patient summary form or by emailing the patient summary form (available here) to phe.afp@nhs.net. We would also be interested in reporting of cases older than 30 years that fit the distinctive pattern of acute flaccid myelitis, through this route.

PHE will follow up with the GP to obtain vaccination and travel history, if not available at the time of reporting. PHE will also follow up with local laboratories for results of locally performed tests. PHE is working with professional networks to develop a protocol for detailed follow up.

4. Samples to be sent to reference laboratory

The following samples should be taken as close as possible to the onset of neurological signs and symptoms and sent to the PHE Virus Reference Department (VRD). Appendix 1 has further details, including contact details for VRD.

Essential:

- 2x stool specimens (24-48 hours apart, within two weeks of onset of illness)
• 1x upper respiratory tract sample

If available:

• 1x lower respiratory tract sample
• 1x CSF
• 1x acute serum
• 1x EDTA whole blood

5. Future plans

This time-limited reporting is expected to continue until the apparent increase declines and the investigation is completed.

6. Further information

Further information on samples to be sent to the reference laboratories for AFP/AFM cases is in appendix 1.

Information for patients/parents of children with AFP/AFM is available here.
Appendix 1: Samples for AFP/AFM investigation

This guidance describes the samples required by Public Health England for the investigation of acute flaccid paralysis (AFP) and acute flaccid myelitis (AFM) cases.

Complete sample sets should be sought for all AFP/M cases to maximise the likelihood of identifying enteroviruses. The following samples should be collected, as close as possible to the onset of neurological signs and symptoms, and forwarded to the Virus Reference Department, PHE Colindale; locally stored samples may be forwarded if they are available and are of appropriate quality:1

Essential:

- 2 x stool specimens
- 1 x upper respiratory tract sample

If available:

- 1 x acute serum
- 1 x lower respiratory tract sample, if available
- 1 x cerebrospinal fluid sample, if CSF obtained
- 1 x EDTA whole blood

Notes

1 Stored and fresh samples (of any sample type) should be original clinical materials. For non-faecal samples, cDNA or RNA extracts will only be accepted if original clinical materials are no longer available or are of insufficient volume; please contact the Enteric Virus Unit (EVU) prior to sending cDNA/extracts. Material in which enterovirus has been detected should always be included in the sample set; if there are multiple positive samples, please ensure those with the lowest Ct values are included. If enterovirus has not been detected locally, the requested sample set should still be forwarded.

2 Stool specimens are required to exclude polio by poliovirus isolation, for all cases of AFP/M/AFM. Unadulterated stools, minimum 2g each and two separate samples collected 24-48h apart, should be forwarded. These should be collected within two weeks of onset of illness and appropriate, stored samples may be forwarded. If more than two weeks have passed since onset of illness and no earlier material is available, obtain two fresh stool samples. Faecal suspensions and faecal emulsions are unsuitable for poliovirus isolation. If it is impossible to collect stool samples, rectal
swabs will be accepted. All faecal samples will also be tested for non-polio enteroviruses using molecular methods.

3 Upper respiratory tract (URT) samples are important for the identification of enteroviruses that may be present in the URT whilst being undetectable in faecal samples, e.g. EV-D68 and EV-A71. Example sample types include viral nose and throat swabs in UTM/VTM and nasopharyngeal aspirates.

4 Serum collected during acute illness should be submitted. Serum may be required for detection of anti-poliovirus antibodies; this will be determined by the reference laboratory. If intravenous immunoglobulin (IVIG) is to be administered, collect serum prior to administration of IVIG (or forward a suitable stored sample). If IVIG has been administered please state dates of administration and dates of serum sample collection on the form.

5 Lower respiratory tract samples, if available, should be submitted in addition to upper respiratory tract samples. Example sample types include sputum, endotracheal aspirates and broncho-alveolar lavage fluid.

6 If CSF has been obtained, it should be forwarded regardless of local testing results. Note some enteroviruses, including EV-D68, are rarely detected in CSF, and testing of other sample types is required.

7 We recommend that EDTA whole blood is also submitted for molecular tests for enteroviruses.

**Follow-up serum sample**

A convalescent serum sample around 3 weeks later may be indicated in some cases; the reference laboratory will advise when this is required.

**Request forms**

- provide clinical details on the form, including date of illness onset
- write “AFP/AFM” on all forms
- provide sample collection dates
- provide a contact number for follow up with consultant microbiologist/virologist
Contacts

Laboratory and technical advice:

Stuart Beard, Enteric Virus Unit: 020 8327 6154
Julian Hand, Polio Reference Service: 020 8327 7872

Clinical advice including laboratory investigations:

Please contact Dr Jake Dunning, Dr Kevin Brown, or Dr Maria Zambon in the first instance. If they are unavailable, please ask to speak to the Duty Virologist.

Virus Reference Department telephone number: 020 8327 6226 (09:00 – 17:00, Mon-Fri)