



# Acute Flaccid Myelitis

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## Disease Plan

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**Last updated: November 12, 2015 by Gregg Reed.**

**Questions about this disease plan?**

**Contact the Utah Department of Health Bureau of Epidemiology: 801-538-6191.**

## ✓ WHY IS ACUTE FLACCID MYELITIS IMPORTANT TO PUBLIC HEALTH?

There have been an increased number of reports of children throughout the United States developing sudden onset of weakness in one or more arms or legs with inflammation of the gray matter in their spinal cord. Over the period August 2014 to July 2015, the Centers for Disease Control and Prevention (CDC) confirmed 120 children in 34 states meeting the criteria for acute flaccid myelitis (AFM). In July 2015, the AFM case definition was modified to include individuals of all ages; CDC has confirmed 11 new cases nationwide since this change.

## ✓ DISEASE AND EPIDEMIOLOGY

### **Clinical Description**

Typical symptoms of AFM include rapid onset of weakness in one or more limbs and distinct abnormalities of the spinal cord gray matter, elevated white blood cell counts, and elevated blood protein levels, as well respiratory disease and fever.

### **Causative Agent**

Although causes of related neurologic illnesses with limb weakness have been identified (including viral infections, environmental toxins, genetic disorders, and Guillain-Barre syndrome), specific causes of AFM are still under investigation. The apparent increase in AFM cases in fall 2014 coincided with a national outbreak of severe respiratory illness among children caused by enterovirus D68 (EV-D68). However, despite this close association in timing, a cause for AFM has not been determined.

### **Differential Diagnosis**

AFM cases appear most similar to illnesses caused by enteroviruses, adenovirus, West Nile virus, and herpes viruses.

### **Laboratory Identification**

Viral laboratory testing and reporting is performed at the CDC. CDC specimen types and collection instructions are available at <http://www.cdc.gov/laboratory/specimen-submission/form.html>.

### **Treatment**

Information on clinical treatment for AFM can be found at the following CDC website: <http://www.cdc.gov/acute-flaccid-myelitis/downloads/acute-flaccid-myelitis.pdf>.

### **Case Fatality**

No fatalities related to AFM have been confirmed.

## Reservoir

N/A; AFM is a syndrome, and the etiologic agent is still under investigation.

## Transmission

Transmission of AFM is unknown, however, it is potentially spread through the fecal-oral route, respiratory droplets, or pharyngeal spread. Transmission is under investigation, and is dependent on identified etiology.

## Susceptibility

All humans are thought to be susceptible to AFM and its associated etiologic agent.

## Incubation Period

An incubation period for AFM has not yet been determined.

## Period of Communicability

A period of communicability for AFM has not yet been determined.

## Epidemiology

# ✓ PUBLIC HEALTH CONTROL MEASURES

## Public Health Responsibility

Public health's responsibility in regards to AFM is twofold:

**Early detection.** Public health should be monitoring respiratory diseases and communicating with clinicians to identify persons with compatible illness to ensure that complete testing, and ascertainment of potential etiology(ies), can be performed.

**Rapid assessment and response.** Public health should respond to probable and confirmed cases quickly. Public health should report cases promptly to CDC and work with other government agencies to investigate the potential etiology and source of exposure.

## Prevention

Since AFM is likely transmitted via the fecal-oral or respiratory routes, respiratory etiquette, hand hygiene, and social distancing during illness may help prevent infection.

## Vaccine

N/A – this is dependent on an etiologic agent, and at present is under investigation.

## Isolation and Quarantine

Infection control recommendations for AFM have not been developed at this time.

## ✓ CASE INVESTIGATION

### Reporting

AFM is a notifiable condition in Utah. Suspected cases of AFM should be reported to public health within three working days of identification.

#### Table of criteria to determine whether a case should be reported to public health authorities.

Criterion	AFM
<i>Clinical Evidence</i>	
Acute onset of focal limb weakness	N
Magnetic resonance image (MRI) showing spinal cord lesion largely restricted to gray matter* and spanning one or more spinal segments	O
Cerebrospinal fluid (CSF) with pleocytosis (CSF white blood cell count >5 cells/mm <sup>3</sup> , may adjust for presence of red blood cells by subtracting 1 white blood cell for every 500 red blood cells present [fungal meningitis case definition, CDC])	O

\*Terms in the spinal cord MRI report such as “affecting mostly gray matter,” “affecting the anterior horn or anterior horn cells,” “affecting the central cord,” “anterior myelitis,” or “poliomyelitis” would all be consistent with this terminology. If still unsure if this criterion is met, consider consulting the neurologist or radiologist directly.

Notes:

S = This criterion alone is Sufficient to identify a case for reporting.

N = All “N” criteria in the same column are Necessary to identify a case for reporting.

O = At least one of these “O” (Optional) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—in conjunction with all “N” criteria in the same column—is required to identify a case for reporting. (These optional criteria are alternatives, which mean that a single column will have either no O criteria or multiple O criteria; no column should have only one O.)

### Case Definition

#### Acute Flaccid Myelitis (2015)

##### Clinical Criteria

An illness with onset of acute focal limb weakness AND

- A magnetic resonance image (MRI) showing spinal cord lesion(s) largely restricted to gray matter\* and spanning one or more spinal segments, OR
- Cerebrospinal fluid (CSF) with pleocytosis (white blood cell count >5 cells/mm<sup>3</sup>, may adjust for presence of red blood cells by subtracting 1 white blood cell for every 500 red blood cells present [fungal meningitis case definition, CDC]).

##### Case Definition

Confirmed

- An illness with onset of acute focal limb weakness AND
- A MRI showing spinal cord lesion(s) largely restricted to gray matter\* and spanning one or more spinal segments

Probable

- An illness with onset of acute focal limb weakness AND
- CSF showing pleocytosis (white blood cell count >5 cells/mm<sup>3</sup>, may adjust for presence of red blood cells by subtracting 1 white blood cell for every 500 red blood cells present [fungal meningitis case definition, CDC]).

*\*Terms in the spinal cord MRI report such as “affecting mostly gray matter,” “affecting the anterior horn or anterior horn cells,” “affecting the central cord,” “anterior myelitis,” or “poliomyelitis” would all be consistent with this terminology. If still unsure if this criterion is met, consider consulting the neurologist or radiologist directly.*

**Table of criterion for defining AFM cases.**

Criterion	Case Definition	
	Probable	Confirmed
<i>Clinical Evidence</i>		
Acute onset of focal limb weakness	N	N
Magnetic resonance image (MRI) showing spinal cord lesion largely restricted to gray matter* and spanning one or more spinal segments		N
Cerebrospinal fluid (CSF) with pleocytosis (CSF white blood cell count >5 cells/mm <sup>3</sup> , may adjust for presence of red blood cells by subtracting 1 white blood cell for every 500 red blood cells present [fungal meningitis case definition, CDC])	N	

Notes:

S = This criterion alone is Sufficient to classify a case.

N = All “N” criteria in the same column are Necessary to classify a case. A number following an “N” indicates that this criterion is only required for a specific disease/condition subtype (see below).

A = This criterion must be absent (e.g., NOT present) for the case to meet the classification criteria.

O = At least one of these “O” (Optional) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—in conjunction with all “N” criteria in the same column—is required to classify a case. (These optional criteria are alternatives, which mean that a single column will have either no O criteria or multiple O criteria; no column should have only one O.) A number following an “O” indicates that this criterion is only required for a specific disease/condition subtype.

**Case Investigation Process**

The case investigation process is as follows:

- Upon notification of a potential case, public health investigators will contact the hospital infection preventionist and enter the potential case into UT-NEDSS.
- The public health investigator will coordinate specimen collection (see <http://www.cdc.gov/laboratory/specimen-submission/form.html>).
- The public health investigator will coordinate sample(s) shipment to the Utah Public Health Laboratory (UPHL) (see <http://www.cdc.gov/ncird/investigation/viral/2014-15/health-departments.html>) through completion of the specimen submission form (<http://www.cdc.gov/laboratory/specimen-submission/form.html>) and completion of the

patient summary form (see <http://www.cdc.gov/acute-flaccid-myelitis/hcp/data.html#patient-form> by the clinician.

- The clinician will send the patient summary form to the public health investigator.
- The public health investigator will securely send the patient summary form to the AFM Coordinator and discuss the case.
- The AFM Coordinator will send the patient summary form to the CDC Limb Weakness team.
- The CDC will send test results to UPHL and the AFM Coordinator.
- The AFM Coordinator will send test results to the public health investigator.
- The public health investigator will update the case in UT-NEDSS and send test results to the clinician.
- The AFM Coordinator will communicate with the CDC for additional instructions or changes in the case status.

## **Outbreaks**

Two or more cases associated with a particular location/time/setting is considered an outbreak.

## **Identifying Case Contacts**

Not Applicable

## **Case Contact Management**

Not Applicable

## ✓ REFERENCES

Centers for Disease Control and Prevention: Investigation of Acute Flaccid Myelitis in U.S. Children, 2014-15. <http://www.cdc.gov/ncird/investigation/viral/2014-15/index.html>.

Centers for Disease Control and Prevention: Summary of Findings- Investigation of Acute Flaccid Myelitis in U.S. Children, 2014-15. <http://www.cdc.gov/ncird/investigation/viral/2014-15/investigation.html>.

Centers for Disease Control and Prevention: Acute Flaccid Myelitis- Interim Considerations for Clinical Management. <http://www.cdc.gov/ncird/downloads/acute-flaccid-myelitis.pdf>.

Up To Date Information on Acute Flaccid Myelitis  
[http://www.uptodate.com/contents/polio-and-infectious-diseases-of-the-anterior-horn?source=search\\_result&search=acute+flaccid+myelitis&selectedTitle=1~1](http://www.uptodate.com/contents/polio-and-infectious-diseases-of-the-anterior-horn?source=search_result&search=acute+flaccid+myelitis&selectedTitle=1~1).

## ✓ VERSION CONTROL

V.11.15. Created disease plan.

## ✓ UT-NEDSS Minimum/Required Fields by Tab

### MORBIDITY EVENT

#### Demographic

- Last Name
- Street
- City
- State
- County
- Zip Code
- Date of Birth
- Area Code
- Phone Number
- Birth Gender
- Ethnicity
- Race

#### Clinical

- Disease
- Onset Date
- Date Diagnosed
- Hospitalized
- Admission Date
- Died
- Date of Death

#### Laboratory

- Test Type
- Organism
- Test Result
- Collection Date
- Lab Test Date

#### Epidemiological

- Imported From
- Risk Factors

#### Reporting

- Date first reported to public health

#### Administrative

- State Case Status (completed by UDOH)
- Outbreak Associated
- Outbreak Name