

GUILLAIN-BARRÉ SYNDROME

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of Guillain-Barré syndrome (GBS). Methodical surveillance of GBS cases facilitates investigations of the potential etiologies of this condition as well as assessment of its impact on military service members. The three case definitions presented below were developed to test their sensitivity, specificity, and positive predictive value (PPV) in identifying “true” cases of GBS. Medical records of possible cases were reviewed by the Military Vaccine Agency (MILVAX) using a standardized medical chart abstraction form based on the Brighton Collaboration case definition, to determine which of the possible cases were confirmed, “true”, GBS cases.^{1,2}

Clinical Description

Guillain-Barré syndrome (GBS) is clinically characterized by acute, progressive, and generally ascending muscle weakness, loss of deep tendon reflexes, and paralysis. With appropriate medical care, including hospitalization and ventilatory assistance when needed, recovery occurs in most cases although convalescence and rehabilitation may be prolonged. The etiology of GBS is not completely understood. It is hypothesized to be autoimmune in nature because many cases are preceded by acute respiratory or gastrointestinal infections.^{1,3} There has been continuing interest in exploring associations between GBS and antecedent influenza, other respiratory infections, influenza vaccination, and other immunizations.⁴

Case Definition and Incidence Rules - Definition A

For surveillance purposes, a case of Guillain-Barré is defined as:

- *One hospitalization* with a defining diagnosis of Guillain-Barré (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

Incidence rule:

For individuals who meet the case definition:

- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None

¹ Armed Forces Health Surveillance Center. Predictive Value of Surveillance Case Definition of Guillain-Barré Syndrome in Vaccine Safety Assessment. *Medical Surveillance Monthly Report (MSMR)*. 2012 March; 19(3): 8-9.

² Sejvar JJ, Kohl KS, Gidudu J, et al. Guillain-Barré Syndrome and Fisher Syndrome: case definitions and guidelines for collection, analysis, and presentation of immunization safety data. *Vaccine*. 2011; 29(3): 599-612.

³ Hughes RAC, Cornblath DR. Guillain-Barré syndrome. *Lancet*. 2005; 366(9497): 1653-1666.

⁴ Tokars JJ, Lewis P, DeStefano F, et al. The risk of Guillain-Barré Syndrome associated with influenza A (H1N1) 2009 monovalent vaccine and 2009-2010 seasonal influenza vaccines: results from self-controlled analyses. *Pharmacoepidemiol Drug Saf*. 2012. Doi:10.1002/pds.3220.



Case Definition and Incidence Rules – Definition B

For surveillance purposes, a case of Guillain-Barré is defined as:

- *One hospitalization* with a defining diagnosis of Guillain-Barré (see ICD9 and ICD10 code lists below) in *any* diagnostic position; AND
- *One outpatient medical encounter* with a defining diagnosis of Guillain-Barré (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

Incidence rule:

For individuals who meet the case definition:

- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None

Case Definition and Incidence Rules – Definition C

For surveillance purposes, a case of Guillain-Barré is defined as:

- *One hospitalization* with a defining diagnosis of Guillain-Barré (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position; AND
- *One outpatient medical encounter* with a defining diagnosis of Guillain-Barré (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position.

Incidence rule:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a diagnosis of Guillain-Barré.
- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None



Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Guillain-Barré Syndrome	G61.0 (Guillain-Barré syndrome)	357.0 (acute infective polyneuritis; Guillain-Barré syndrome, postinfectious polyneuritis)

Development and Revisions

- In July of 2015 the case definition was updated to include ICD10 codes.
- This case definition was developed in March of 2012 by the Medical Surveillance Monthly Report (MSMR) staff for use in a MSMR article on Guillain-Barré.¹ The three definitions outlined above were developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- The three case definitions were developed to test their sensitivity, specificity, and PPV in identifying “true” cases of GBS.

Reports

None

Review

Jul 2015	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
Apr 2012	Case definitions reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Mar 2012	Case definitions reviewed and published by the AFHSC MSMR staff.

Comments

Results of analysis:¹

Definitions	Sensitivity	Specificity	Positive Predictive Value (PPV)
A One inpatient medical encounter in <i>any</i> diagnostic position	100%	81%	78%
B One inpatient <i>and</i> one outpatient medical encounter in <i>any</i> diagnostic position	100%	88%	86%
C One inpatient <i>and</i> one outpatient medical encounter, both in the <i>primary</i> diagnostic position	92%	92%	88%

