

## PERTUSSIS

*Includes probable cases.*

### Background

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This case definition was developed by the Armed Forces Health Surveillance Division (AFHSD) for the purpose of epidemiological surveillance of a condition important to military-associated populations.

### Clinical Description

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Pertussis or “whooping cough” is a highly infectious respiratory disease most commonly considered a disease of childhood. It is caused by the bacterium *Bordetella pertussis*. Clinically pertussis begins with upper respiratory tract symptoms, (i.e., cough, runny nose, mild fever), lasting one to two weeks; this stage is followed by the development of severe coughing episodes (paroxysms) that typically involve a characteristic “whoop” upon inspiration. Recovery can be prolonged and affected individuals may experience a persistent cough that takes weeks to months to resolve. Pertussis is a vaccine preventable disease; yet many outbreaks are reported each year in the United States.<sup>1</sup>

#### Case Definition and Incidence Rules

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For surveillance purposes, a case of pertussis is defined as:

- One record of a reportable medical event (RME) of pertussis infection; laboratory confirmation is *not* required.

For surveillance purposes, a *probable* case of pertussis is defined as:

- *One hospitalization or outpatient medical encounter* with a case defining diagnosis of pertussis (see ICD9 and ICD10 code lists below) in the *first* diagnostic position.

#### ***Incidence rules:***

For individuals who meet the case definition:

- The incidence date is considered the date of onset documented in a RME report, or the first hospitalization or outpatient medical encounter that includes a case defining diagnosis of pertussis.
- An individual is considered an incident case *once per lifetime*.

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<sup>1</sup> Armed Forces Health Surveillance Center. Pertussis diagnosis among service members and other beneficiaries of the U.S. Health System, January 2005-June 2012. *MSMR*. 2012; 98(8):14-17.



### Case Definition and Incidence Rules (continued)

#### *Exclusions: (applies to probable cases of pertussis only):*

- Cases with *one* medical encounter with evidence of pertussis immunization *within 7 days* before or after the case-defining encounter; as indicated by the following vaccine administered (CVX) codes: 01 (DTP), 11 (pertussis), 20 (DTaP), 50 (DTaP-Hib), 102 (DTaP/DTP-Hib-Hep B), 106 (DTaP, 5 pertussis antigens), 107 (DTaP, unspecified formulation), 110 (DTaP-Hep B-IPV), 115 (Tdap), 120 (DTaP-Hib-IPV), 130 (DTaP-IPV)
- Individuals with evidence of a positive test for serologic immunity to pertussis *within 7 days* before or after the case defining encounter.
- Cases with *one* Current Procedure Code (CPT) or *one* ICD9/ICD10 procedure code indicating pertussis vaccination or antibody testing recorded during the *same* medical encounter; as indicated by the following codes.
  - ICD9 codes: V03.6 (pertussis alone), V06.1 (combined DTP, DTaP], V06.2 (DTP + TAB), V06.3 (DPT + polio), 99.37 (vaccination against pertussis), 99.39 (administration of DTP, combined). In ICD10 use Z23 (encounter for immunization) plus procedure code for type of immunization.
  - CPT codes: 90698 (DTaP-Hib-IPV), 90700 (DTaP), 90701 (DTP), 90715 (DTaP), 90720 (DTP-Hib), 90721 (DTaP-Hib), 90723 (DTaP-Hep B-IPV)

### Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Pertussis (Whooping cough)	A37 (whooping cough)	033 (whooping cough)
	A37.0 (whooping cough due to <i>Bordetella pertussis</i> )	033.0 ( <i>Bordetella pertussis</i> [ <i>B. pertussis</i> ])
	- A37.00 (whooping cough due to <i>Bordetella pertussis</i> without pneumonia)	
	- A37.01 (whooping cough due to <i>Bordetella pertussis</i> with pneumonia)	484.3 (pneumonia in whooping cough)
A37.1 (whooping cough due to <i>Bordetella parapertussis</i> )	(continued on next page)	



	- A37.10 (whooping cough due to <i>Bordetella parapertussis</i> without pneumonia)	033.1 ( <i>Bordetella parapertussis</i> [ <i>B. parapertussis</i> ])
	- A37.11 (whooping cough due to <i>Bordetella parapertussis</i> with pneumonia)	484.3 (above)
	A37.8 (whooping cough due to other <i>Bordetella</i> species)	033.8 (whooping cough due to other specified organism)
	- A37.80 (whooping cough due to other <i>Bordetella</i> species without pneumonia)	
	- A37.81 (whooping cough due to other <i>Bordetella</i> species with pneumonia)	484.3 (above)
	A37.9 (whooping cough, unspecified species)	033.9 (whooping cough, unspecified organism)
	- A37.90 (whooping cough, unspecified species without pneumonia)	
	- A37.91 (whooping cough, unspecified species with pneumonia)	484.3 (above)

### Development and Revisions

- In June of 2015 the case definition was updated to include ICD10 codes.
- The original case definition was developed in August 2012 by the *Medical Surveillance Monthly Report (MSMR)* staff for use in a *MSMR* article on pertussis.<sup>1</sup> The definition was later used for a 2014 *MSMR* “Surveillance Snapshot” on pertussis.<sup>2</sup> The case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSD analyses.

### Case Definition and Incidence Rule Rationale

- This case definition does not require the RME report to specify laboratory confirmation of pertussis.
- *Probable cases*: A “probable case” is identified by *one* hospitalization or outpatient medical encounter only. While this criterion is highly sensitive, (e.g., it can ensure broad capture during disease outbreaks), it will also identify cases of pertussis that are not true or confirmed cases. Investigators seeking greater specificity may want to consider an alternative case definition.

### Code Set Determination and Rationale

- The code set used for the June 2014 *MSMR* article on pertussis did not include ICD9 code 484.3 (pneumonia in whooping cough). This code is included in this document and will be included in the code set for future analyses.

<sup>2</sup>Armed Forces Health Surveillance Center. Surveillance Snapshot: States with the Most Pertussis Diagnoses Among Service Members and Other Beneficiaries of the Military Health System, January 2012-June 2014. *MSMR*. 2014; 21(6):18-19.



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## Reports

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The AFHSD reports on pertussis in the following reports:

- Periodic MSMR articles.
- The Defense Centers for Public Health-Aberdeen (DCPH-A) publishes a monthly RME Report which can be obtained by sending an email to: [dha.apg.Pub-Health-A.mbx.disease-epidemiologyprogram13@health.mil](mailto:dha.apg.Pub-Health-A.mbx.disease-epidemiologyprogram13@health.mil). A link to this email is also available on the Defense Health Agency (DHA) website; <https://www.health.mil/Military-Health-Topics/Health-Readiness/Public-Health/AFHSD/Reports-and-Publications/Armed-Forces-Reportable-Medical-Events>. Accessed April 2026.

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## Review

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Apr 2026	Case definition updated by the AFHSD Surveillance Methods and Standards (SMS) working group.
Jun 2015	Case definition reviewed and adopted by the Armed Forces Health Surveillance Center (AFHSC) SMS working group.
Feb 2012	Case definition developed by AFHSC <i>MSMR</i> staff.

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## Comments

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- Pertussis is a reportable medical event in the *Armed Forces Reportable Medical Events* surveillance system under “Vaccine Preventable” diseases.

