

TUBERCULOSIS

Includes Pulmonary and Extrapulmonary Infection

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) and the Uniformed Services University of the Health Sciences (USUHS) for the purpose of conducting two special epidemiological studies on active tuberculosis in the U.S. military.^{1,2} Both studies examine rates of pulmonary and extrapulmonary tuberculosis.

Clinical Description

Tuberculosis is a chronic bacterial infection caused by *Mycobacterium tuberculosis*, characterized pathologically by the formation of granulomas. The most common site of infection is the lung, but other organs may be involved. Specific symptoms of pulmonary tuberculosis include cough, chest pain and hemoptysis. Systemic symptoms also include fever, chills, night sweats, fatigue, and weight loss.³

Case Definition and Incidence Rules

For surveillance purposes, a case of tuberculosis is defined by:

- *One hospitalization* with any of the defining diagnoses of active tuberculosis (see ICD9 code list below) in the *primary* diagnostic position; or
- One record of a reportable medical event (RME) of pulmonary tuberculosis.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the reportable medical event or the first hospitalization that includes a diagnosis of tuberculosis.
- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None

Codes

The following ICD9 codes are included in the case definition:

¹ Mancuso, J D, Tobler, S K, Eick, A A, Olsen, C H. An evaluation of the completeness and accuracy of active tuberculosis reporting in the United States military. *Int J Tuberc Lung Dis* 2010; 14(10): 1-6

² Mancuso, J D, Tobler, S K, Eick, A A, Keep, L W. Active tuberculosis and recent overseas deployment in the U.S. Military. *Am J Prev Med* 2010; 39(2): 157-163

³ Braunwald, E., Fauci, A., Longo, D. et al. 2008. *Harrison's Principles of Internal Medicine*. 17th ed. United States: McGraw-Hill Professional.



Fifth-digit sub-classification for use with 011.xx

- 0 site unspecified
- 1 bacteriological or histological examination not done
- 2 bacteriological or histological examination unknown (at present)
- 3 tubercle bacilli found (in sputum) by microscopy
- 4 tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture
- 5 tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically
- 6 tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]

Condition	ICD-9-CM codes	CPT Codes
Tuberculosis, <i>Pulmonary</i>	011.xx (pulmonary tuberculosis) - 011.0 (tuberculosis of lung, infiltrative [0-6]) - 011.1 (tuberculosis of lung, nodular [0-6]) - 011.2 (tuberculosis of lung with cavitation [0-6]) - 011.3 (tuberculosis of bronchus [0-6]) - 011.4 (tuberculous fibrosis of lung [0-6]) - 011.5 (tuberculous bronchiectasis [0-6]) - 011.6 (tuberculous pneumonia, any form [0-6]) - 011.7 (tuberculous pneumothorax [0-6]) - 011.8 (other specified pulmonary tuberculosis) - 011.9 (pulmonary tuberculosis, unspecified [0-6])	
Tuberculosis, <i>Extrapulmonary and Other</i>	010 (primary tuberculous infection) 012 (other respiratory tuberculosis) 013 (tuberculosis of meninges and central nervous system) 014 (tuberculosis of intestines, peritoneum, and mesenteric glands) 015 (tuberculosis of bones and joints) 016 (tuberculosis of genitourinary system) 017 (tuberculosis of other organs) 018 (miliary tuberculosis)	

Development and Revisions

- In 2009 the Tri-Service Reportable Medical Events guidelines were updated to include the addition of the Quantiferon Gold test (and other such blood tests) as a possible substitute for the tuberculin skin test in the evaluation of patients for possible exposure to, and infection with, *M. tuberculosis*. The SMS working group acknowledges this addition.



- This case definition was developed in 2007 by AFHSC Epidemiology and Analysis staff and USUHS for the purpose of conducting two special epidemiologic studies on active tuberculosis in the U.S. Military. The studies included extrapulmonary tuberculosis.

Case Definition and Incidence Rule Rationale

- The 2007 case definition was updated to be more specific, rather than sensitive, for tuberculosis (TB) cases in order to remove potential miscodings of TB skin tests and rule-out diagnoses.

Code Set Determination and Rationale

- During the development of the case definition, it was recognized that ICD9 code 017.06 (tuberculosis of the skin and subcutaneous cellular tissue; tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals) was mistakenly being reported in the Army reportable medical events system. This coding error occurred from 1996-1999 at a single Army medical facility. Therefore, this ICD9 code was excluded from the final case definition. For future tuberculosis studies, this code should be included in the code set as long as additional misuses of the code are not identified.
- The ICD9 code set used for surveillance of pulmonary tuberculosis through the Tri-Service Reportable Events surveillance system uses ICD9 codes 011.xx (pulmonary tuberculosis) only.⁴

Reports

AFHSC reports on *pulmonary* tuberculosis in the following reports:

- Monthly: Armed Forces Health Surveillance Center. *Sentinel reportable events among service members and beneficiaries at U.S. Army, Navy, and Air Force medical facilities*. Medical Surveillance Monthly Report (MSMR), through December 2011; includes only reportable medical events.
- Weekly: “DoD Communicable Disease Weekly Report” for the various Services’ public health centers; includes only reportable medical events. Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.

Review

Jun 2011	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group
Jan 2007	Case definition developed by AFHSC Epidemiology and Analysis staff and USUHS.

Comments

None

⁴ Armed Forces Health Surveillance Center. Tri-Service Reportable Events. Guidelines and Case Definitions. June 2009. Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.

