

OBSTRUCTIVE SLEEP APNEA

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of a condition important to military-associated populations. In 2004, an analysis of Veterans Health Administration records revealed that approximately three percent of more than four million U.S. military veterans have a documented diagnosis of sleep apnea;¹ the veterans included in this study were significantly older and contained proportionally more males than the current active military population.

Clinical Description

Obstructive sleep apnea (OSA) is characterized by the complete or near-complete obstruction of the upper airway, usually at the level of the oropharynx. The resulting apnea leads to progressive asphyxia until there is a brief arousal from sleep, whereupon airway patency is restored and airflow resumes. The patient then returns to sleep, and the sequence of events is repeated often up to 400-500 times per night, resulting in marked fragmentation of sleep. The condition is more common in men, with symptoms that include snoring, choking, gasping during sleep, insomnia, morning headache, and daytime sleepiness.² Treatment depends on the severity of OSA and may include weight reduction, alcohol avoidance, intraoral appliances, surgery, and continuous positive airway pressure (CPAP) during sleep.³

Case Definition and Incidence Rules

For surveillance purposes, a case of obstructive sleep apnea is defined as:

- *One hospitalization* with any of the defining diagnoses of obstructive sleep apnea (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *Two outpatient medical encounters*, within 90 days of each other, with any of the defining diagnoses of obstructive sleep apnea (see ICD9 and ICD10 code lists below) in *any* diagnostic position.

Incidence rules:

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 defining diagnosis of obstructive sleep apnea.
- An individual is considered an incident case only *once per lifetime*.

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¹ Sharafkhaneh A, Richardson P, Hirshkowitz M. Sleep apnea in a high risk population: a study of the Veterans Health Administration beneficiaries. *Sleep Med.* 2004; 5(4): 345-350.

² Caples SM, Gami AS, Somers VK. Obstructive Sleep Apnea. *Ann Intern Med.* 2004; 142(3): 187-197.

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



Case Definition and Incidence Rules *(continued)*

Exclusions:

- None

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Obstructive sleep apnea	G47.30 (sleep apnea, unspecified)	780.51 (insomnia with sleep apnea, unspecified)
		780.57 (unspecified sleep apnea)
	G47.33 (obstructive sleep apnea; adult, pediatric)	327.23 (obstructive sleep apnea, adult, pediatric)
	G47.39 (other sleep apnea)	780.53 (hypersomnia with sleep apnea, unspecified)

Development and Revisions

- In January of 2016 the case definition was updated to include ICD10 codes.
- This case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSC analyses. The case definition was developed by the AFHSC MSMR staff for a May 2010 MSMR article on obstructive sleep apnea.⁴

Case Definition and Incidence Rule Rationale

- The interval of 90 days between outpatient visits is used to increase the specificity of the case definition and to allow for the time needed to make an accurate diagnosis of OSA. Diagnostic protocols for OSA often require various time intensive home sleep studies as well as overnight polysomnography at a sleep center.

Code Set Determination and Rationale

- The intent of this case definition is to capture cases of obstructive sleep apnea. Some cases of central sleep apnea may be captured with ICD10 code G47.39 (other sleep apnea) as this code includes individuals with mixed (both obstructive and central) sleep apnea symptoms.

⁴ Armed Forces Health Surveillance Center. Obstructive Sleep Apnea, Active Component, U.S. Armed Forces, January 2000-December 2009. *Medical Surveillance Monthly Report (MSMR)*; 2010 May; Vol 17(5): 8-11.



Reports

None

Review

Jan 2016	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
Dec 2011	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
May 2010	Case definition developed and reviewed by the AFHSC MSMR staff.

Comments

None

