

## GASTROESOPHAGEAL REFLUX DISEASE (GERD)

*Synonyms Include Acid Reflux, Heartburn, and Acid Indigestion*

### Background

This case definition was developed in 2016 by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of gastroesophageal reflux disease (GERD) in military associated populations.

### Clinical Description

Gastroesophageal reflux disease is a chronic digestive disorder that usually results from a weak lower esophageal sphincter. This defect allows the contents of the stomach to inappropriately flow backward into the esophagus causing symptoms of heartburn, indigestion, chest pain, regurgitation and difficulty swallowing. Risk factors for GERD include excess body weight, hiatal hernia, smoking, pregnancy, and diabetes. To reduce the symptoms of GERD, management includes lifestyle changes (e.g., losing weight, avoidance of acid-inducing foods and eating smaller meals) and medications. Gastroesophageal reflux disease is common in Western countries with a prevalence of 10%-20% and an incidence rate of approximately 5 per 1,000 person-years.<sup>1</sup>

### Case Definition and Incidence Rules

For surveillance purposes, a case of gastroesophageal reflux disease (GERD) is defined as:

- *One hospitalization or outpatient medical encounter* with any of the case defining diagnoses of GERD (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position; or
- *One hospitalization or outpatient medical encounter* with an esophageal complication or extraesophageal symptom code (see ICD9 and ICD10 code lists below) in the *primary* diagnostic position; AND any case defining diagnosis of GERD (see ICD9 and ICD10 code lists below) in *any other* 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 GERD.
- An individual is considered an incident case *once per surveillance period*.

#### *Exclusions:*

- None

<sup>1</sup> Armed Forces Health Surveillance Center. Gastroesophageal Reflux Disease (GERD), Active Component, U.S. Armed Forces, 2005-2015. *Medical Surveillance Monthly Report (MSMR)*. 2015 July; 22(7): 14-17.



## Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Gastroesophageal Reflux Disease (GERD)	<i>K21 (gastro-esophageal reflux disease)</i>	--
	- K21.0 (gastro-esophageal reflux disease with esophagitis)	<i>Translated ICD9 code 530.11 lacks specificity for GERD. Included below.</i>
	- K21.9 (gastro-esophageal reflux disease without esophagitis)	530.81 (gastroesophageal reflux, gastroesophageal reflux disease)

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Esophageal complications associated with GERD	<i>C15 (malignant neoplasm of esophagus)</i>	<i>150 (cancer of esophagus)</i>
	- C15.3 (malignant neoplasm of upper third of esophagus)	- 150.0 (cervical esophagus) - 150.3 (upper third of esophagus)
	- C15.4 (malignant neoplasm of middle third of esophagus)	- 150.1 (thoracic esophagus) - 150.4 (middle third of esophagus)
	- C15.5 (malignant neoplasm of lower third of esophagus)	- 150.2 (abdominal esophagus) - 150.5 (lower third of esophagus)
	- C15.8 (malignant neoplasm of overlapping sites of esophagus)	- 150.8 (other specified part)
	- C15.9 (malignant neoplasm of esophagus, unspecified)	- 150.9 (esophagus, unspecified)
	C16.0 (malignant neoplasm of cardia)	151.0 (malignant neoplasm of stomach; cardia; cardio-esophageal junction)
	D00.1 (carcinoma in situ of esophagus)	230.1 (carcinoma in situ of digestive organs; esophagus)
	<i>K20 (esophagitis)</i>	<i>530.1 (esophagitis)</i>
	- K20.0 (eosinophilic esophagitis)	- 530.13 (eosinophilic esophagitis)
	- K20.8 (other esophagitis)	- 530.19 (other esophagitis)
	- K20.9 (esophagitis, unspecified)	- 530.10 (esophagitis, unspecified) - 530.12 (acute esophagitis)
	K21.0 (above)	- 530.11 (reflux esophagitis)
	<i>K22.1 (ulcer of esophagus)</i>	<i>530.2 (ulcer of esophagus)</i>
	- K22.10 (ulcer of esophagus without bleeding)	- 530.20 (ulcer of esophagus without bleeding)
	- K22.11 (ulcer of esophagus with bleeding)	- 530.21 (ulcer of esophagus with bleeding)



	<i>K22.2 (esophageal obstruction)</i>	<i>530.3 (stricture and stenosis of esophageal)</i>
	K22.7 (Barrett's esophagus)	- 530.85 (Barrett's esophagus)
	- K22.70 (Barrett's esophagus without dysplasia)	
	- K22.71 (Barrett's esophagus with dysplasia)	
	<i>K22.8 (other specified diseases of esophagus)</i>	<i>530.8 (other specified disorders of esophagus)</i>
		- 530.82 (esophageal hemorrhage)
		- 530.83 (esophageal leukoplakia)

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Extraesophageal conditions and symptoms associated with GERD	<i>J37 (chronic laryngitis and laryngotracheitis)</i>	<i>476 (laryngitis)</i>
	- J37.0 (chronic laryngitis)	- 476.0 (chronic laryngitis)
	- J37.1 (chronic laryngotracheitis)	- 476.1 (chronic laryngotracheitis)
	<i>J45 (asthma)</i>	<i>493 (asthma)</i>
	J45.2 ( <i>mild intermittent asthma</i> )	493.0 (extrinsic asthma); 493.1 (intrinsic asthma)
	- J45.20 (...with acute exacerbation)	- 493.02 (extrinsic asthma with acute exacerbation) - 493.12 (intrinsic asthma with acute exacerbation)
	- J45.21 (...uncomplicated)	- 493.00 (extrinsic asthma, unspecified) - 493.10 (intrinsic asthma, unspecified)
	- J45.22 (...with status asthmaticus)	- 493.01 (extrinsic asthma with status asthmaticus) - 493.11 (intrinsic asthma with status asthmaticus)
	J45.3 ( <i>mild persistent asthma</i> )	--
	- J45.30 (...with acute exacerbation)	493.00; 493.10 (above)
	- J45.31 (...uncomplicated)	493.02; 493.12 (above)
	- J45.32 (... with status asthmaticus)	493.01; 493.11 (above)
	J45.4 ( <i>moderate persistent asthma</i> )	--
	- J45.40 (... with acute exacerbation)	493.00; 493.10 (above)
	- J45.41 (...uncomplicated)	493.02; 493.12 (above)



- J45.42 (... with status asthmaticus)	493.01; 493.11 (above)
J45.5 ( <i>severe persistent asthma</i> )	--
- J45.50 (... with acute exacerbation)	493.00; 493.10 (above)
- J45.51 (...uncomplicated)	493.02; 493.12 (above)
- J45.52 (... with status asthmaticus)	493.01; 493.11 (above)
J45.9 ( <i>other and unspecified asthma</i> )	--
J45.90 (unspecified asthma)	493.9 (asthma, unspecified)
- J45.901 (... with acute exacerbation)	- 493.92 (asthma, unspecified with acute exacerbation)
- J45.902 (... with status asthmaticus)	- 493.91 (asthma, unspecified with status asthmaticus)
- J45.909 (...uncomplicated)	- 493.90 (asthma, unspecified, unspecified)
J45.99 ( <i>other asthma</i> )	493.8 ( <i>other forms of asthma</i> )
- J45.990 (exercise induced bronchospasm)	- 493.81 (exercise induced bronchospasm)
- J45.991 (cough variant asthma)	- 493.82 (cough variant asthma)
<i>J98.0 (diseases of bronchus, not elsewhere classified)</i>	<i>519.1 (other diseases of trachea and bronchus, not elsewhere classified)</i>
- J98.01 (acute bronchospasm)	- 519.11 (acute bronchospasm)
- J98.09 (other diseases of bronchus, not elsewhere classified)	- 519.19 (other diseases of trachea and bronchus)
<i>K25.3 (erosion of teeth)</i>	521.3 (erosion of teeth)
	521.30 (erosion, unspecified)
	521.31 (erosion, limited to enamel)
	521.32 (erosion, extending into dentine)
	521.33 (erosion, extending into pulp)
	521.34 (erosion, localized)
	521.35 (erosion, generalized)
R49.0 (dysphonia)	784.42 (dysphonia; hoarseness)
R49.8 (other voice and resonance disorders)	784.49 (other voice and resonance disorders)
<i>R05 (cough)</i>	<i>786.2 (cough)</i>



## Development and Revisions

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- In May of 2016 the case definition was updated to include ICD10 codes.
- The definition was developed by the AFHSB *Medical Surveillance Monthly Report (MSMR)* staff for a July 2015 article on gastroesophageal reflux disease.<sup>1</sup> The case definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSB analyses.

### Case Definition and Incidence Rule Rationale

- The esophageal complications and extraesophageal conditions and symptoms used in this case definition are based on analyses done by Gerson, L.B. *et al*<sup>2</sup> to estimate health-care resource utilization and GERD associated symptoms; and on an article by Vakil, *et al*<sup>3</sup> that outlines a global evidence-based consensus definition of GERD that includes specific identifiable signs and symptoms as one of three potential defining criteria for GERD. For the 2015 *MSMR* article on GERD, AFHSB reviewed a line-listing of cases to identify the conditions and symptoms most commonly diagnosed and entered in the medical record with a primary diagnosis of GERD. AFHSB also categorized such manifestations of GERD into esophageal and extraesophageal syndromes, with extraesophageal syndromes divided into established and proposed associations (Fig.2).<sup>1</sup>

## Reports

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AFHSB reports on gastroesophageal reflux disease in the following reports:

- Periodic *MSMR* articles

## Review

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May 2016	Case definition reviewed and adopted by the AFHSB Surveillance Methods and Standards (SMS) working group.
Jul 2015	Case definition reviewed and adopted by the AFHSB <i>MSMR</i> staff.

## Comments

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None

<sup>2</sup> Gerson LB, McLaughlin T, Balu S, Jackson J, Lunacsek O. Variation of health-care resource utilization according to GERD-associated complications. *Dis Esophagus*. 2012;25(8):694–701.

<sup>3</sup> Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R, the Global Consensus Group. The Montreal definition and classification of Gastroesophageal Reflux Disease: a global evidence-based consensus. *Am J Gastroenterol*. 2006;101:1900–1920.

