

HERPES ZOSTER (SHINGLES); ACUTE

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.

Clinical Description

Herpes zoster (HZ), also known as shingles, is a blistering, often painful rash caused by reactivation of latent varicella-zoster virus (VZV) that has remained dormant within the dorsal root ganglia following primary VZV infection (chickenpox). Cases of herpes zoster typically present as localized, unilateral vesicular eruptions along a nerve pathway often accompanied by severe pain and numbness in the distribution of the affected nerves.¹ The most common complication of herpes zoster is chronic pain or postherpetic neuralgia. There is no curative treatment for herpes zoster; however, prompt antiviral administration may shorten the length of the illness and prevent complications. There are two adult vaccines for HZ: Zostavax® (zoster vaccine live), licensed in 2006 and recommended for adults age 60 years and older; and Shingrix® (recombinant zoster vaccine), licensed in 2017 and recommended for adults age 50 and older. As of 2018, the Advisory Committee on Immunization Practices (ACIP) recommends two doses of Shingrix®, separated by two to six months, for adults age 50 and older, whether or not they were previously vaccinated with Zostavax®.²

Case Definition and Incidence Rules

For surveillance purposes, a case of herpes zoster is defined as:

- *One hospitalization* with any of the defining diagnoses of herpes zoster (see ICD9 and ICD10 code lists below) in the *primary* or *secondary* diagnostic position.
- *One outpatient medical encounter* with any of the defining diagnoses of herpes zoster (see ICD9 and ICD10 code lists below) in the *primary* or *secondary* 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 herpes zoster.
- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None (see *Case Definition and Incidence Rules Rationale*)

¹ Chidiac C, Bruxelle J, Daures JP, et al. Characteristics of patients with herpes zoster on presentation to practitioners in France. *Clin Infect Dis*. 2001; 33:62-69.

² “Shingrix Recommendations.” Centers for Disease Control and Prevention.

<https://www.cdc.gov/vaccines/vpd/shingles/hcp/shingrix/recommendations.html>. Accessed: 6 March 2018.



Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Herpes zoster	B02.0 (zoster encephalitis)	053.19 (herpes zoster with other nervous system complications – other)
	B02.1 (zoster meningitis)	053.0 (herpes zoster with meningitis)
	B02.2 (zoster with other nervous system involvement)	053.1 (herpes zoster with nervous system complications)
	- B02.21 (postherpetic geniculate ganglionitis)	- 053.10 (herpes zoster with unspecified nervous system complication)
	- B02.24 (postherpetic myelitis)	- 053.11 (geniculate herpes zoster – herpetic geniculate ganglionitis)
	- B02.29 (other postherpetic nervous system involvement)	- 053.14 (herpes zoster myelitis) - 053.19 (above)
	B02.3 (zoster ocular disease)	053.2 (herpes zoster with ophthalmic complications)
	- B02.30 (zoster ocular disease, unspecified)	- 053.20 (herpes zoster dermatitis of eyelid)
	- B02.31 (zoster conjunctivitis)	- 053.21 (herpes zoster keratoconjunctivitis)
	- B02.32 (zoster iridocyclitis)	- 053.22 (herpes zoster iridocyclitis)
	- B02.33 (zoster keratitis)	- 053.29 (herpes zoster with other ophthalmic complication)
	- B02.34 (zoster scleritis)	
	- B02.39 (other herpes zoster eye disease)	
	B02.7 (disseminated zoster)	053.8 (herpes zoster with unspecified complication)
	B02.8 (zoster with other complication)	053.7 (herpes zoster with other specified complication) - 053.71 (otitis externa due to herpes zoster) - 053.79 (herpes zoster with other specified complications)
B02.9 (zoster without complications)	053.9 (herpes zoster without mention of complication)	

Development and Revisions

- In May of 2014 the case definition was updated to include ICD10 codes.
- The original case definition was developed by AFHSC staff in August 2009 for a conference presentation and adapted in July of 2011 for a *MSMR* article on herpes zoster.³

Case Definition and Incidence Rule Rationale

- To increase the specificity of the case definition, in March of 2018 the incidence rules were updated to require a case defining diagnosis in the *primary* or *secondary* diagnostic position only, versus the previous incidence rule which allowed a case defining diagnosis in *any* diagnostic position. Sensitivity analyses revealed the more conservative case definition identified 1,010 fewer incident cases over a seventeen year period (i.e., 2000-2016).
- *Exclusions:*
 - Because the risk of herpes zoster is markedly elevated in immunosuppressed individuals, in March of 2018, the *MSMR* staff conducted additional exploratory analyses of these individuals. The diagnoses underlying the individual's immunosuppressed state were explored as well as the overall impact of the total number of cases on the analyses. Service members were considered immunosuppressed if they had *at least two* case defining *diagnostic or procedure codes* in *any* diagnostic position *within one year prior* to the incident case diagnosis. A description of the analyses and the ICD9, ICD10, CPT and CVX code lists are included in the March 2018 *MSMR* article on herpes zoster.⁴ Based on the above analyses and the small number of immunosuppressed individuals identified, the determination was made not to exclude these individuals from the analyses.
 - The original 2009 case definition excluded individuals with known risk factors for herpes zoster (i.e., immune deficiency associated with neoplasms, HIV infection, and organ transplantation). The purpose of these exclusions was to focus the analyses on cases of zoster occurring in service members *without* such known risk factors.³
- This case definition is designed to capture first time incidence so a lifetime incidence rule is used. Recent studies show that herpes zoster can have a recurrence rate of about 1-6% in healthy individuals and can have a higher recurrence rate in immunocompromised individuals.⁵ As such, some investigators may want to consider an alternative incidence rule to capture recurrent cases.

Code Set Determination and Rationale

- The codes ICD9 053.12 / ICD10 B02.22 (postherpetic trigeminal neuralgia) and ICD9 053.13 / ICD10 B02.23 (postherpetic polyneuropathy) are not included in the code list because these codes likely represent follow-up encounters for herpes zoster sequelae rather than acute cases of herpes zoster.

³ Armed Forces Health Surveillance Center. Herpes Zoster, Active Component, U.S. Armed Forces, 2000-2010. *Medical Surveillance Monthly Report (MSMR)*; 2011 Jul; Vol 18(7): 16-18.

⁴ Armed Forces Health Surveillance Branch. Herpes Zoster, Active Component, U.S. Armed Forces, 2000-2016. *Medical Surveillance Monthly Report (MSMR)*; 2018 March; Vol 25(3): 26-34.

⁵ Yawn BP, Wollan PC, Kurland MJ, et al. Herpes Zoster Recurrences More Frequent than Previously Reported. *Mayo Clin Proc.* 2011; 86(2): 88-93.



Reports

AFHSB reports on herpes zoster in the following reports:

- None

Review

Mar 2018	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
May 2014	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
Sept 2011	Case definition adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Aug 2009	Case definition developed by AFHSC staff for conference presentation.

Comments

None

