

PNEUMONIA AND INFLUENZA (P&I)

Case Definition for Weekly AFHSB MHS Influenza Surveillance Report; Does Not Include Acute Respiratory Illness (ARI); For Severe Disease see Case Definition “Pneumonia and Influenza; Hospitalized.”

Background

In the summer of 2007, in recognition of a lack of DoD-wide influenza surveillance data, the Armed Forces Health Surveillance Center (AFHSC), formerly the Army Medical Surveillance Activity, developed this case definition for the Military Health System (MHS) influenza report. The purpose of this report is to track pneumonia and influenza activity among U.S. service members stationed throughout the world. This case definition attempts to provide a severity measure of the influenza season, beyond what might be captured by influenza-like illness surveillance alone. The report is intended to be used as a timely and actionable surveillance report comparing week to week activity during the northern hemisphere’s influenza season.

This case definition is intended to identify cases of pneumonia, influenza, or both, recognizing the variable presentation of primary influenza infection. Combining the two into the same case definition, “pneumonia and influenza” (P&I), permits surveillance for influenza and its most common complication (pneumonia) in monitoring the morbidity associated with seasonal influenza.

Clinical Description

Influenza is often associated with either viral or secondary bacterial pneumonia. Pneumonia is an acute infection of the lungs that involves the lower respiratory tract including the small bronchi and air sacs. Pneumonia and influenza are among the leading causes of hospitalizations of service members and, although less frequent than upper respiratory illnesses, are often more debilitating.¹

Case Definition and Incidence Rules

For surveillance purposes, a case of “pneumonia and influenza” is defined as:

- *One hospitalization* with any of the defining diagnoses of “pneumonia and influenza” (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *One outpatient medical encounter* with any of the defining diagnoses of “pneumonia and influenza” (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 “pneumonia and influenza”.

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¹ Armed Forces Health Surveillance Center. Update: Pneumonia-Influenza and Severe Acute Respiratory Illnesses, Active Components, U.S. Armed Forces, January 1997-March 2009. *Medical Surveillance Monthly Report (MSMR)*. May 2009, Vol 16(5): 12-16.



Case Definition and Incidence Rules *(continued)*

- An individual can be an incident case only *once per week*.

Exclusions:

- None

Codes

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

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Influenza Pneumonia and Influenza (P&I)	<i>J09 (influenza due to certain identified influenza viruses)</i>	--
	J09.X (influenza due to identified novel influenza A viruses)	--
	- J09.X1 (influenza due to identified novel influenza A virus with pneumonia)	488.0 (influenza due to identified avian influenza virus) - 488.01 (influenza due to identified avian influenza virus with pneumonia)
		488.8 (influenza due to novel influenza A) - 488.81 (influenza due novel influenza A with pneumonia)
	- J09.X2 (influenza due to identified novel influenza A virus with other respiratory manifestations)	488.02 (influenza due to identified avian influenza virus with other respiratory manifestations) 488.82 (influenza due to novel influenza A with other respiratory manifestations)
	- J09.X3 (influenza due to identified novel influenza A virus with gastrointestinal manifestations)	488.09 (influenza due to identified avian influenza virus with other manifestations)
	- J09.X9 (influenza due to identified novel influenza A virus with other manifestations)	488.1 (influenza due to 2009 H1N1 influenza virus) 488.19 (influenza due to identified 2009 H1N1 influenza virus with other manifestations) 488.89 (influenza due to novel influenza A with other manifestations)
	<i>J10 (influenza due to other identified influenza viruses)</i>	--
	J10.0 (influenza due to identified novel influenza A viruses)	--
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- J10.00 (influenza due to other identified influenza virus with <i>unspecified type of pneumonia</i>)	487.0 (influenza with pneumonia)
- J10.01 (influenza due to other identified influenza virus with <i>the same other identified influenza virus pneumonia</i>)	487.1 (influenza with other respiratory manifestations)
- J10.08 (influenza due to other identified influenza virus with <i>other specified pneumonia</i>)	487.0 (above) 488.11 (influenza due to identified 2009 H1N1 influenza virus with pneumonia)
J10.1 (influenza due to other identified influenza virus with other respiratory manifestations)	487.1 (above) 488.12 (influenza due to identified 2009 H1N1 influenza virus with other respiratory manifestations)
J10.2 (influenza due to other identified influenza virus with <i>gastrointestinal</i> manifestations)	487.8 (influenza with other manifestations)
J10.8 (influenza due to other identified influenza virus with other manifestations)	
- J10.81 (influenza due to other identified influenza virus with other manifestations with <i>encephalopathy</i>)	
- J10.82 (influenza due to other identified influenza virus with other manifestations with <i>myocarditis</i>)	
- J10.83 (influenza due to other identified influenza virus with other manifestations with <i>otitis media</i>)	
- J10.89 (influenza due to other identified influenza virus with <i>other manifestations</i>)	
<i>J11 (influenza due to unidentified influenza virus)</i>	--
J11.0 (influenza due to unidentified influenza virus with pneumonia)	--
- J11.00 (influenza due to unidentified influenza virus with <i>unspecified type of pneumonia</i>)	487.0 (above)
- J11.08 (influenza due to unidentified influenza virus with <i>specified pneumonia</i>)	
J11.1 (influenza due to unidentified influenza virus with other respiratory manifestations)	487.1 (above)
J11.2 (influenza due to unidentified influenza virus with <i>gastrointestinal</i> manifestations)	487.8 (above)

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	J11.8 (influenza due to unidentified influenza virus with other manifestations)	
	- J11.81 (influenza due to unidentified influenza virus <i>with encephalopathy</i>)	
	- J11.82 (influenza due to unidentified influenza virus <i>with myocarditis</i>)	
	- J11.83 (influenza due to unidentified influenza virus <i>with otitis media</i>)	
	- J11.89 (influenza due to unidentified influenza virus <i>with other manifestations</i>)	
Pneumonia Pneumonia and Influenza (P&I)		<i>484 (pneumonia in infectious diseases classified elsewhere)</i>
	<i>Translated code too broad; not included</i>	- 484.5 (pneumonia in anthrax)
	A37.01 (whooping cough due to Bordetella pertussis with pneumonia)	- 484.3 (pneumonia in whooping cough)
	A37.11 (whooping cough due to Bordetella parapertussis with pneumonia)	
	A37.81 (whooping cough due to other Bordetella species with pneumonia)	
	A37.91 (whooping cough, unspecified species with pneumonia)	
	A48.1 (Legionnaires' disease)	- 482.84 (pneumonia due to other specified bacteria; legionnaires' disease)
	B25.0 (cytomegaloviral pneumonitis)	- 484.1 (pneumonia in cytomegalic inclusion disease)
	<i>Translated code too broad; not included</i>	- 484.6 (pneumonia in aspergillosis)
	<i>J12 (viral pneumonia, not elsewhere classified)</i>	<i>480 (viral pneumonia)</i>
	J12.0 (adenoviral pneumonia)	480.0 (pneumonia due to adenovirus)
	J12.1 (respiratory syncytial virus pneumonia)	480.1 (pneumonia due to respiratory syncytial virus)
	J12.2 (parainfluenza virus pneumonia)	480.2 (pneumonia due to parainfluenza virus)
	J12.3 (human metapneumovirus pneumonia)	480.8 (pneumonia due to other viruses not elsewhere classified)
	J12.8 (other viral pneumonia)	--
	- J12.81 (pneumonia due to SARS-associated coronavirus)	480.3 (pneumonia due to SARS-associated virus)
	- J12.89 (other viral pneumonia)	480.8 (above)
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J12.9 (viral pneumonia, unspecified)	487.0 (above) 480.9 (viral pneumonia unspecified)
<i>J13 (pneumonia due to Streptococcus pneumoniae)</i>	481 (pneumococcal pneumonia/ streptococcus pneumoniae pneumonia)
<i>J14 (pneumonia due to Hemophilus influenzae)</i>	- 482.2 (pneumonia due to Hemophilus influenzae; H.influenzae)
<i>J15 (bacterial pneumonia, not elsewhere classified)</i>	<i>482 (other bacterial pneumonia)</i>
J15.0 (pneumonia due to Klebsiella pneumoniae)	- 482.0 (pneumonia due to Klebsiella pneumoniae)
J15.1 (pneumonia due to Pseudomonas)	- 482.1 (pneumonia due to Pseudomonas)
J15.2 (pneumonia due to staphylococcus)	482.4 (pneumonia due to staphylococcus)
- J15.20 (pneumonia due to staphylococcus, unspecified)	- 482.40 (pneumonia due to staphylococcus, unspecified)
- J15.21 (pneumonia due to staphylococcus aureus)	--
- J15.211 (pneumonia due to Methicillin susceptible staphylococcus aureus)	- 482.41 (Methicillin susceptible pneumonia due to staphylococcus)
- J15.212 (pneumonia due to Methicillin resistant Staphylococcus aureus)	- 482.42 (Methicillin resistant pneumonia due to staphylococcus)
J15.29 (pneumonia due to other staphylococcus)	- 482.49 (other staphylococcus pneumonia)
J15.3 (pneumonia due to streptococcus; group B)	- 482.32 (pneumonia due to streptococcus; group B)
J15.4 (pneumonia due to other streptococci)	482.3 (pneumonia due to streptococcus)
	- 482.30 (pneumonia due to streptococcus; streptococcus unspecified)
	- 482.31 (pneumonia due to streptococcus; group A)
	- 482.39 (pneumonia due to streptococcus; other streptococcus)
--	482.8 (pneumonia due to other specified bacteria)
J15.5 (pneumonia due to Escherichia coli)	- 482.82 (pneumonia due to other specified bacteria; Escherichia coli)
J15.6 (pneumonia due to other aerobic Gram- negative bacteria)	- 482.83 (pneumonia due to other specified bacteria; other gram negative bacteria)

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J15.7 (pneumonia due to <i>Mycoplasma pneumoniae</i>)	- 483.0 pneumonia due to other specified organism; <i>mycoplasma pneumoniae</i>)
J15.8 (pneumonia due to other specified bacteria)	- 482.81 (pneumonia due to other specified bacteria; anaerobes)
	- 482.89 (pneumonia due to other specified bacteria; other specified bacteria)
J15.9 (unspecified bacterial pneumonia)	482.9 (bacterial pneumonia unspecified)
<i>J16 (pneumonia due to other infectious organisms, not elsewhere classified)</i>	<i>483 (pneumonia due to other specified organism)</i>
J16.0 (Chlamydial pneumonia)	- 483.1 (pneumonia due to other specified organism; chlamydia)
J16.8 (pneumonia due to other specified infectious organisms)	- 483.8 (pneumonia due to other specified organism; other specified organism)
<i>J17 (pneumonia in diseases classified elsewhere)</i>	- 484.7 (pneumonia in other systemic mycoses)
	- 484.8 (pneumonia in other infectious diseases classified elsewhere)
<i>J18 (pneumonia, unspecified organism)</i>	486 (pneumonia, organism unspecified)
- J18.0 (bronchopneumonia, unspecified organism)	485 (bronchopneumonia, organism unspecified)
- J18.1 (lobar pneumonia, unspecified organism)	
- J18.2 (hypostatic pneumonia, unspecified organism)	
- J18.8 (other pneumonia, unspecified organism)	
- J18.9 (pneumonia, unspecified organism)	

Development and Revisions

- In October of 2015 the case definition was updated to include ICD10 codes.
- This case definition was developed in July of 2007 by the Special Studies Lead and the Chief of the Army Medical Surveillance Activity for the purpose of a weekly report to track pneumonia and influenza activity among U.S. service members stationed throughout the world.

Case Definition and Incidence Rule Rationale

- None



Code Set Determination and Rationale

- In November of 2009 ICD9 code 488.xx (influenza due to certain identified influenza viruses) was added to the case definition to identify cases caused by other influenza strains, such as the avian influenza (H5N1) (488.0x) or novel pandemic (H1N1) (488.1x) strains.

Reports

Using the above case definition, AFHSB reports on “pneumonia and influenza” in the following reports:

- Weekly: Armed Forces Health Surveillance Branch, Military Health System (MHS) Influenza Surveillance Report, Weekly Report of Activity.
- Weekly: DoD Weekly Influenza Surveillance Summary.

Review

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| Oct 2015 | Case definition reviewed and updated by an AFHSB Senior Managing Epidemiologist and approved by the AFHSB Surveillance Methods and Standards (SMS) working group. |
| Apr 2011 | Case definition reviewed and adopted by AFHSC Surveillance Methods and Standards (SMS) working group. |
| Jan 2008 | Case definition and report reviewed and approved by the Director of the AFHSC. |
| Jul 2007 | Original case definition developed and reviewed by the Special Studies Lead and the Chief of the Army Medical Surveillance Activity. |

Comments

None

