

Because NHSN did not hold the live annual training in 2020, please plan to use the 2019 NHSN Annual Training videos and slides for NHSN training throughout 2020.

Although there were not extensive changes made to the NHSN PSC protocols for 2020, NHSN wanted to note any differences between the training content provided in 2019 and the current 2020 protocols. Therefore, this document will detail changes to information presented in the 2019 videos and slides so that they align with the 2020 NHSN Patient Safety Component Manual updates.

The following slides will provide the slide number and slide information from the 2019 NHSN Training presentation and then explain updates or clarifications for 2020 related to the content provided in that particular slide.

Pneumonia Event (PNEU)



2019 Presentation, Slide 13

Chapter 6 - NHSN Patient Safety Component Manual



*Device-associated Module
PNEU*

Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event

Introduction: In 2011, an estimated 157,000 healthcare-associated pneumonias occurred in acute care hospitals in U.S.; 39% of these pneumonias were ventilator-associated (VAP).¹ Patients receiving invasive mechanical ventilation are at risk for numerous complications, including pneumonia. Ventilator-associated pneumonia (VAP) and other healthcare-associated pneumonias are important, common healthcare-associated infections, but national surveillance for VAP has long been a challenge because of the lack of objective, reliable definitions. Due to these challenges, in January 2013 the National Healthcare Safety Network (NHSN) replaced surveillance for ventilator-associated pneumonia (VAP) in adult inpatient locations with surveillance for

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Introduction update

Chapter 6 - NHSN Patient Safety Component Manual



*Device-associated Module
PNEU*

Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event

Introduction: In 2015 CDC conducted a point-prevalence survey in a sample of acute care hospitals in U.S. and determined that of the 427 health care–associated infections identified, pneumonia was the most common infection with 32% of those being ventilator associated.¹ Patients receiving invasive mechanical ventilation are at risk for numerous complications, including pneumonia. Ventilator-associated pneumonia (VAP) and other healthcare-associated pneumonias are important, common healthcare-associated infections, but national surveillance for VAP has long been a challenge because of the lack of objective, reliable definitions. Due to these challenges, in January 2013 the National Healthcare Safety Network (NHSN) replaced surveillance for ventilator-

associated pneumonia (VAP) with patient safety surveillance for ventilator-

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PNEU - major type of infection

PNU1, PNU2, PNU3 - specific type infections (algorithms)

PNU3

Table 4: Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
<p>Two or more serial chest imaging test results with at least <u>one</u> of the following^{1,2,14}:</p> <p>New and persistent or Progressive and persistent</p> <ul style="list-style-type: none">• Infiltrate	<p>Patient who is immunocompromised (see definition in footnote ¹⁰) has at least <u>one</u> of the following:</p> <ul style="list-style-type: none">• Fever (>38.0°C or >100.4°F)• For adults ≥70 years old, altered mental status with no other recognized cause• New onset of purulent sputum³	<p>At least <u>one</u> of the following:</p> <ul style="list-style-type: none">• Identification of matching <i>Candida</i> spp. from blood and one of the following: sputum, endotracheal aspirate, BAL or protected specimen brushing.^{11,12,13}• Evidence of fungi from minimally-contaminated LRT specimen (specifically BAL, protected specimen brushing or endotracheal aspirate) from one of the following:

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Qualification of eligible pathogens

PNEU - major type of infection

PNU1, PNU2, PNU3 - specific type infections (algorithms)

PNU3

Table 4: Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
<p>Two or more serial chest imaging test results with at least one of the following^{1,2,14}:</p> <p>New and persistent or Progressive and persistent</p> <ul style="list-style-type: none">• Infiltrate• Consolidation	<p>Patient who is immunocompromised (see definition in footnote ¹⁰) has at least one of the following:</p> <ul style="list-style-type: none">• Fever (>38.0°C or >100.4°F)• For adults ≥70 years old, altered mental status with no other recognized cause• New onset of purulent sputum³, or change in character of sputum⁴, or increased respiratory	<p>At least one of the following:</p> <ul style="list-style-type: none">• Identification of matching <i>Candida</i> spp. from blood and one of the following: sputum, endotracheal aspirate, BAL or protected specimen brushing.^{11,12,13}• Evidence of fungi (excluding <i>Candida</i> and yeast not otherwise specified) from minimally-contaminated LRT specimen (specifically BAL, protected specimen brushing or endotracheal aspirate) from one of the following:

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Table 5 – Threshold values for cultured specimens

- If the quantity of Pseudomonas was sufficient it is possible PNU2 could be met

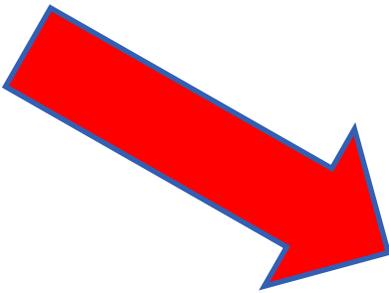
Table 5: Threshold values for cultured specimens used in the diagnosis of pneumonia

<u>Specimen collection/technique</u>	<u>Values*</u>
Lung tissue†	$\geq 10^4$ CFU/g tissue
Bronchoscopically (B) obtained specimens	
Bronchoalveolar lavage (B-BAL)	$\geq 10^4$ CFU/ml
Protected BAL (B-PBAL)	$\geq 10^4$ CFU/ml
Protected specimen brushing (B-PSB)	$\geq 10^3$ CFU/ml
Nonbronchoscopically (NB) obtained (blind)specimens	
NB-BAL	$\geq 10^4$ CFU/ml
NB-PSB	$\geq 10^3$ CFU/ml
Endotracheal aspirate (ETA)	$\geq 10^5$ CFU/ml

CFU = colony forming units
g = gram
ml = milliliter

* Consult with your laboratory to determine if reported semi-quantitative results match the quantitative thresholds. In the absence of additional information available from your laboratory, a semi-quantitative result of “moderate” or “heavy” growth, or 2+, 3+ or 4+ growth is considered to correspond.

†Open-lung biopsy specimens and immediate post-mortem specimens obtained by transthoracic or transbronchial biopsy



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Addition of acceptable quantities

Table 5 – Threshold values for cultured specimens

- If the quantity of Pseudomonas was sufficient it is possible PNU2 could be met

Table 5: Threshold values for cultured specimens used in the diagnosis of pneumonia

<u>Specimen collection/technique</u>	<u>Values</u> *
Lung tissue†	$\geq 10^4$ CFU/g tissue
Bronchoscopically (B) obtained specimens	
Bronchoalveolar lavage (B-BAL)	$\geq 10^4$ CFU/ml
Protected BAL (B-PBAL)	$\geq 10^4$ CFU/ml
Protected specimen brushing (B-PSB)	$\geq 10^3$ CFU/ml
Nonbronchoscopically (NB) obtained (blind)specimens	
NB-BAL	$\geq 10^4$ CFU/ml
NB-PSB	$\geq 10^3$ CFU/ml
Endotracheal aspirate (ETA)	$\geq 10^6$ CFU/ml

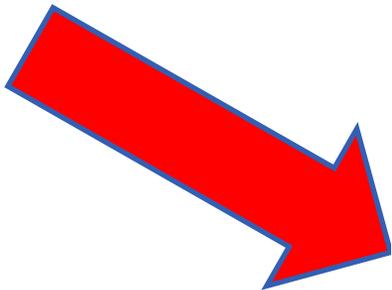
CFU = colony forming units

g = gram

ml = milliliter

*Consult with your laboratory to determine if reported semi-quantitative results match the quantitative thresholds. In the absence of additional information available from your laboratory, a semi-quantitative result of “moderate” or “heavy” or “many” or “numerous” growth, or 2+, 3+ or 4+ growth is considered to correspond.

†Open-lung biopsy specimens and immediate post-mortem specimens obtained by transthoracic or transbronchial biopsy



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PNU3 and Candida.....Footnotes # 10, 11.....

Table 4: Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
Two or more serial chest imaging test results with at least one of the following ^{1,2,14} : New and persistent or Progressive and	<div style="border: 1px solid red; padding: 5px;"> Patient who is immunocompromised (see definition in footnote ¹⁰) has at least one of the following: </div> <ul style="list-style-type: none"> • Fever (>38.0°C or >100.4°F • For adults >70 years old, altered 	At least one of the following: <div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> • Identification of matching <i>Candida</i> spp. from blood and one of the following: sputum, endotracheal aspirate, BAL or protected specimen brushing.^{11,12,13} </div> Existence of fungi from minimally

10. Immunocompromised patients include only

- those with neutropenia defined as absolute neutrophil count or total white blood cell count (WBC) <500/mm³
- those with leukemia, lymphoma or who are HIV positive with CD4 count <200
- those who have undergone splenectomy
- those who have a history of solid organ or hematopoietic stem cell transplant
- those on cytotoxic chemotherapy
- those on steroids (excluding inhaled steroids) daily for >2 weeks on the date of event

11. Blood specimen and sputum, endotracheal aspirate, BAL or protected specimen brushing specimens **must** have a collection date that occurs within the Infection Window Period.



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Update to Footnote # 10

PNU3 and Candida.....Footnotes # 10, 11.....

Table 4: Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
Two or more serial chest imaging test results with at least one of the following ^{1,2,14} : New and persistent or Progressive and	<p>Patient who is immunocompromised (see definition in footnote 10) has at least one of the following:</p> <ul style="list-style-type: none"> • Fever (>38.0°C or >100.4°F • For adults >70 years old, altered 	<p>At least one of the following:</p> <ul style="list-style-type: none"> • Identification of matching <i>Candida</i> spp. from blood and one of the following: sputum, endotracheal aspirate, BAL or protected specimen brushing.^{11,12,13} • Existence of fungi from minimally

10. Immunocompromised patients include only

- those with neutropenia defined as absolute neutrophil count or total white blood cell count (WBC) <500/mm³
- those with leukemia, lymphoma or who are HIV positive with CD4 count <200
- those who have undergone splenectomy
- those who have a history of solid organ or hematopoietic stem cell transplant
- those on cytotoxic chemotherapy
- those on enteral or parenteral administered steroids (excludes inhaled and topical steroids) daily for >2 weeks on the date of event

11. Blood specimen and sputum, endotracheal aspirate, BAL or protected specimen brushing specimens **must** have a collection date that occurs within the Infection Window Period.

