

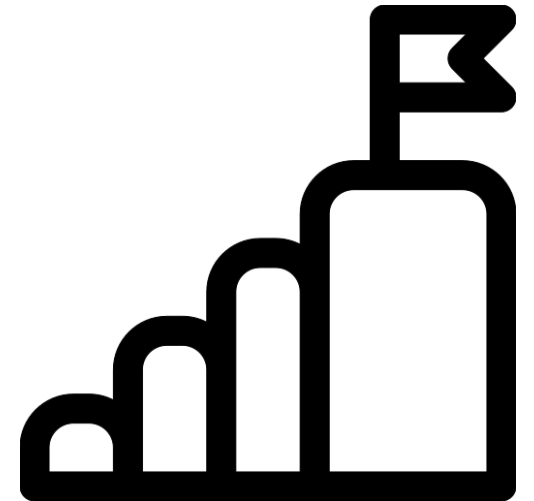
VAP

Jill Jakubus
1:35

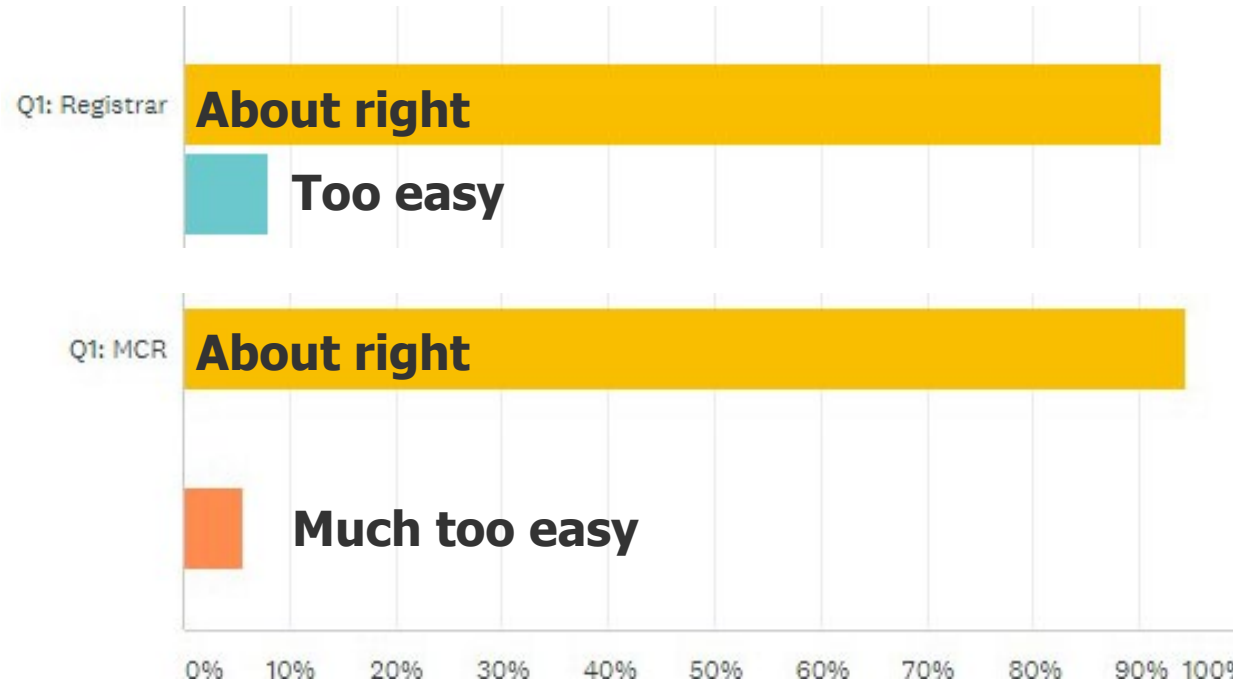


Objectives

- **Polling competition**
- **Opportunities for improvement**
- **Solutions**
- **VAP visual**
- **Box breakdown**
- **Training links**



Was the June 2018 meeting content too easy?



	MUCH TOO CHALLENGING	TOO CHALLENGING	ABOUT RIGHT	TOO EASY	MUCH TOO EASY	TOTAL
Q1: Registrar	0.00% 0	0.00% 0	92.11% 35	7.89% 3	0.00% 0	67.86% 38
Q1: MCR	0.00% 0	0.00% 0	94.44% 17	0.00% 0	5.56% 1	32.14% 18
Total Respondents	0	0	52	3	1	56

VAP

Get ready to compete!

Which of the following pathogens are excluded from VAP capture per the CDC 2019 (PNU 2)?

Which of the following pathogens are excluded from VAP capture per the CDC 2019 (PNU 2)?

Many yeast isolated

Candida species

Coagulase-negative Staphylococcus

Enterococcus faecalis

All of the above

A and B

Which of the following aspirate types can be used to capture per the CDC?

Which of the following aspirate types can be used to capture per the CDC?

BAL

Protected specimen brushing

Endotracheal aspirate

Only A & B

All the above

An aspirate through a tracheostomy tube in a ventilated patient is eligible to meet the laboratory criteria for VAP per the CDC?

An aspirate through a tracheostomy tube in a ventilated patient is eligible to meet the laboratory criteria for VAP per the CDC?

True

False

Make the pain stop

Per the CDC, pneumonia due to gross aspiration (for example in the operating room) that meets VAP definition is excluded?

Per the CDC, pneumonia due to gross aspiration (for example in the operating room) that meets VAP definition is excluded?

True

False

What does the abbreviation "LRT" stand for in the VAP definition?

What does the abbreviation "LRT" stand for in the VAP definition?

Laryngeal reaction time

Lateral reticular nucleus

Laryngeal respiratory trial

Lower respiratory tract

Local radiation therapy

What do these numbers mean in the TQIP VAP definition?

What do these numbers mean in the TQIP VAP definition?

DNA sequencing found in the PCR report

Footnotes from the CDC definition

Simply typos with no meaning

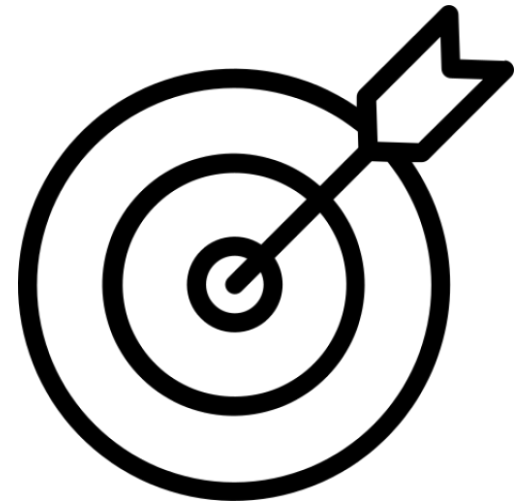
Footnotes with links lower in TQIP definition

VAP Algorithm (PNU3 Immunocompromised Patients):

IMAGING TEST EVIDENCE	SIGNS/SYMPTOMS	LABORATORY
Two or more serial chest imaging test results with at least one of the following: <ul style="list-style-type: none">New or progressive and persistent infiltrateCavitation	Patient who is immunocompromised has at least one of the following: <ul style="list-style-type: none">Fever (>38°C or >100.4°F)New onset of purulent sputum³, or change in character of sputum⁴, or increased respiratory secretions, or increased suctioning requirementsNew onset or worsening cough, or dyspnea, or tachypnea⁵Rales⁶ or bronchial breath sounds	At least one of the following: <ul style="list-style-type: none">Identification of matching <i>Candida</i> spp. from blood and sputum, endotracheal aspirate, BAL or protected specimen brushing 11,12,13

How did we do?

- **Variability**
- **Opportunity for improvement**
- **Drill in**

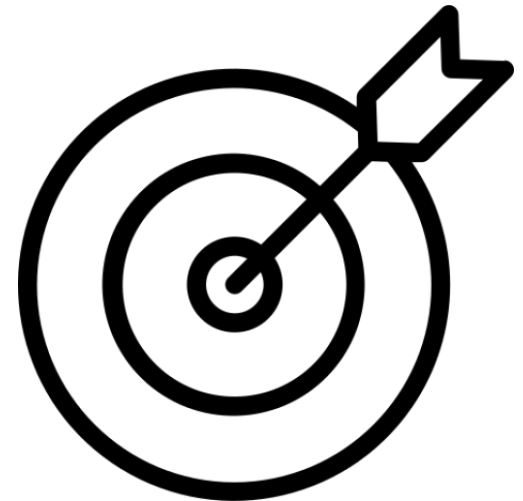


Limitations

- **TQIP CDC VAP 2016**
- **TQIP missing CDC links**
- **CDC 2016 links listed as not available**
- **TQIP CDC VAP PNEU 2 & 3 only**

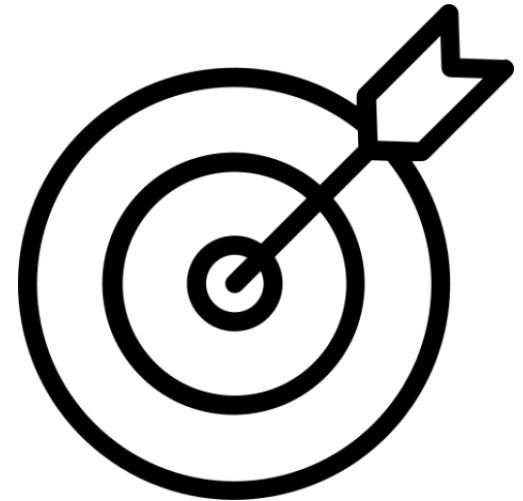
Additional Information

- Must have occurred during the patient's initial stay at your hospital.
- A diagnosis of pneumonia must be documented in the patient's medical record.
- Consistent with the January 2016 CDC defined VAP.

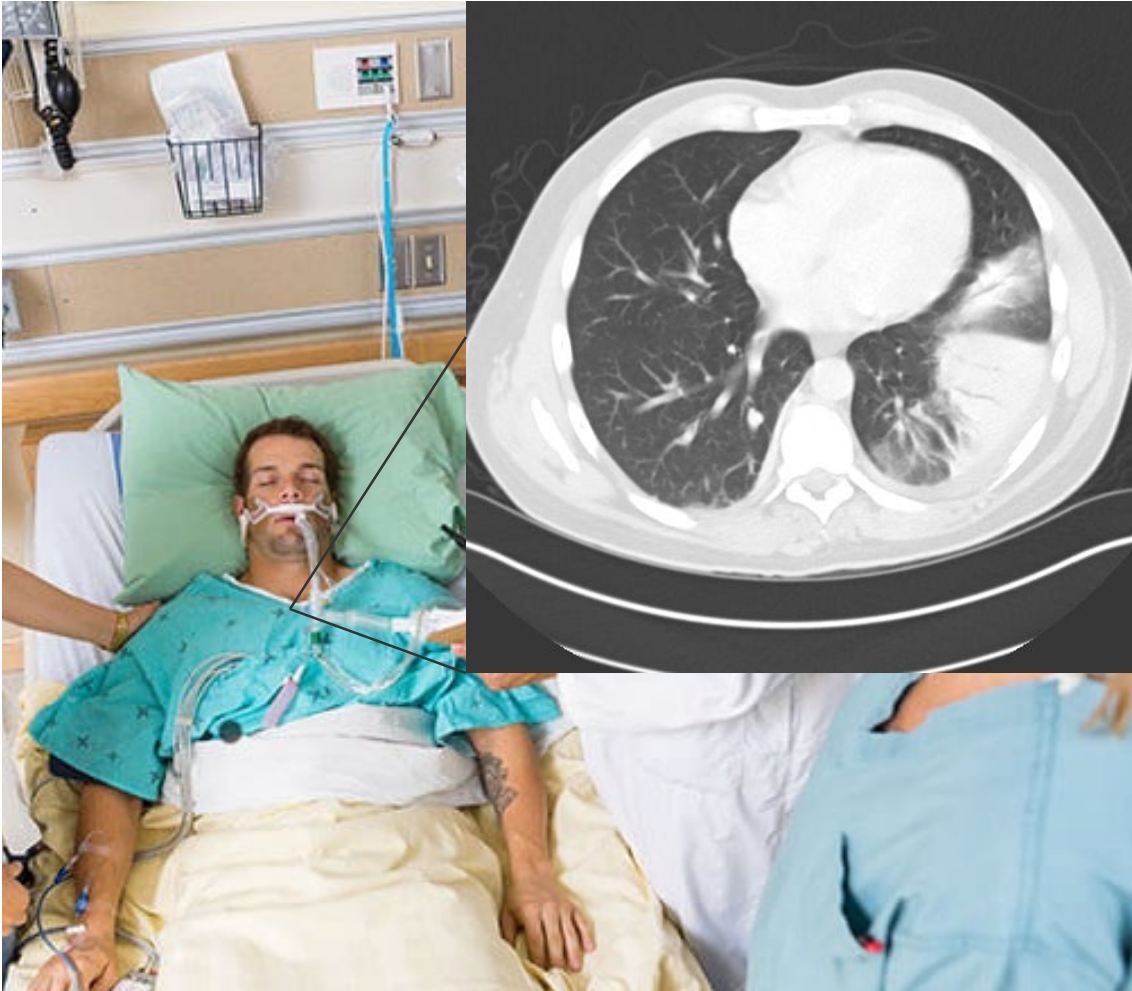


Solutions

- **MTQIP CDC VAP 2019**
- **CDC link automatically updates Jan**
- **Single source link 2020**
- **Consider addition PNEU 1 2020**



Visual VAP



Symptoms

- **Dyspnea**
- **Nonverbal**

Signs

- **Fever**
- **Tachypnea**
- **Purulent or increased secretions**
- **Rales/crackles**

Ventilatory

- **Tidal volume reduced**
- **Inspiratory pressures increased**

Laboratory

- **ABG - Hypoxemia**
- **WBC – Leukocytosis or leukopenia**

Imaging

- **New or progressive infiltrate**

Box Breakdown

**CDC secrets
are found here**

VENTILATOR-ASSOCIATED PNEUMONIA

(Consistent with the CDC defined VAP. Definition provided by the [CDC](#).)

A pneumonia where the patient is on mechanical ventilation for > 2 calendar days on the date of event, with day of ventilator placement being Day 1,

AND

The ventilator was in place on the date of event or the day before. If the patient is admitted or transferred into a facility on a ventilator, the day of admission is considered Day 1.

No cultures in PNU1

Box Breakdown



Table 1: Specific Site Algorithms for Clinically Defined Pneumonia (PNU1)

Imaging Test Evidence	Signs/Symptoms/Laboratory
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Table 2: Specific Site Algorithms for Pneumonia with Common Bacterial or Filamentous Fungal Pathogens and Specific Laboratory Findings (PNU2)

Imaging Test Evidence	Signs/Symptoms	Laboratory
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Table 3: Specific Site Algorithms for Viral, Legionella, and other Bacterial Pneumonias with Definitive Laboratory Findings (PNU2)

Imaging Test Evidence	Signs/Symptoms	Laboratory
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Table 4: Specific Site Algorithm for Pneumonia in Immunocompromised Patients (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
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Box Breakdown

Table 2: Specific Site Algorithms for Pneumonia with **Common Bacterial or Filamentous Fungal Pathogens and Specific Laboratory Findings (PNU2)**

Imaging Test Evidence	Signs/Symptoms	Laboratory
-----------------------	----------------	------------

Table 3: Specific Site Algorithms for **Viral, Legionella, and other Bacterial Pneumonias** with Definitive Laboratory Findings (PNU2)

Imaging Test Evidence	Signs/Symptoms	Laboratory
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Table 4: Specific Site Algorithm for Pneumonia in **Immunocompromised Patients** (PNU3)

Imaging Test Evidence	Signs/Symptoms	Laboratory
-----------------------	----------------	------------

A case can meet criteria in two tables during the 7-day infection window. Only report one.

Box Breakdown

How is persistence defined?

1. Imaging test evidence of pneumonia will persist. Rapid imaging resolution suggests that the patient does not have pneumonia, but rather a non-infectious process such as atelectasis or congestive heart failure. In patients without underlying disease if more than one imaging test is available serial imaging test results must also be evaluated and demonstrate persistence.

Imaging Test Evidence

Two or more serial chest imaging test results with at least one of the following^{1,2,14}:

Imaging Test Evidence

Two or more serial chest imaging test results with at least one of the following^{1,2,14}:

New and persistent
or
Progressive and persistent

- Infiltrate
- Consolidation
- Cavitation
- Pneumatocoles, in infants ≤ 1 year old

Note: In patients *without* underlying pulmonary or cardiac disease (for example: respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), one definitive chest imaging test result is acceptable.¹

Box Breakdown

What if the radiologist uses different words?

2. Note that there are many ways of describing the imaging appearance of pneumonia. Examples include, but are not limited to, “air-space disease”, “focal opacification”, “patchy areas of increased density”. Although perhaps not specifically delineated as pneumonia by the radiologist, in the appropriate clinical setting these alternative descriptive wordings should be seriously **considered as potentially positive findings**. If provided and the findings are not documented as attributed to another issue (for example pulmonary edema, chronic lung disease) they are eligible for meeting imaging test evidence of pneumonia.

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Box Breakdown

What if the chest x-ray is equivocal?

14. Note If the imaging test result is equivocal for pneumonia, check to see if subsequent imaging tests are definitive. For example, if a chest imaging test result states infiltrate vs. atelectasis and a subsequent imaging test result is definitive for infiltrate—the initial imaging test would be eligible for use. In the absence of finding a subsequent imaging result that clarifies the equivocal finding, if there is clinical correlation then the equivocal imaging test is eligible for use.

Imaging Test Evidence

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Box Breakdown

How is change in sputum character defined?

4. Change in character of sputum refers to the **color, consistency, odor and quantity.**

And at least one of the following:

- New onset of purulent sputum³ or change in character of sputum⁴, or increased respiratory secretions, or increased suctioning requirements
- New onset or worsening cough, or dyspnea or tachypnea⁵
- Rales⁶ or bronchial breath sounds
- Worsening gas exchange (for example: O₂ desaturations [for example: PaO₂/FiO₂ ≤240]⁷, increased oxygen requirements, or increased ventilator demand)

Signs/Symptoms

At least one of the following:

- Fever (>38.0°C or >100.4°F)
- Leukopenia (≤4000 WBC/mm³) or leukocytosis (≥12,000 WBC/mm³)
- For adults ≥70 years old, altered mental status with no other recognized cause

And at least one of the following:

- New onset of purulent sputum³ or change in character of sputum⁴, or increased respiratory secretions, or increased suctioning requirements
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Box Breakdown

How is tachypnea defined?

5. > 25 breaths per minute (adults)

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Box Breakdown

Can documentation of crackles be used for capture of rales?

6. Yes

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Box Breakdown

What are the excluded organisms?

8. Commensal flora are excluded

- Coagulase-negative **S**taph
- **E**nterococcus species
- **C**andida species
- Yeast not otherwise specified

At least one of the following:

- Organism identified from blood^{8,13}
- Organism identified from pleural fluid^{9,13}
- Positive quantitative culture or corresponding semi-quantitative culture result² from minimally-contaminated LRT specimen (specifically, BAL, protected specimen brushing or endotracheal aspirate)
- $\geq 5\%$ BAL-obtained cells contain intracellular bacteria on direct microscopic exam (for example: Gram's stain)
- Positive quantitative culture or corresponding semi-quantitative culture result ⁹of lung tissue

Laboratory

At least one of the following:

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- Histopathologic exam shows at least one of the following evidences of pneumonia:
 - Abscess formation or foci of consolidation with intense PMN accumulation in bronchioles and alveoli
 - Evidence of lung parenchyma invasion by fungal hyphae or pseudohyphae

Box Breakdown

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Wait a SEC!

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Box Breakdown

What are the excluded organisms?

8. Commensal flora are excluded

- Coagulase-negative Staph
- Enterococcus species
- Candida species
- Yeast not otherwise specified

Exceptions

- When obtained from pleural fluid or chest tube placement.
- Candida spp. in immunocompromised

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Box Breakdown

What culture types are accepted?

9. A specimen that is not obtained through an artificial airway (specifically endotracheal tube or tracheostomy) from a ventilated patient is not considered minimally contaminated and is not eligible for use in meeting the laboratory criteria for PNU2. Sputum or tracheal secretions collected from a non-ventilated patient are not minimally-contaminated specimens.

Exceptions for immunocompromised patients see footnote 12

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LRT = Lower Respiratory Tract

Laboratory

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Box Breakdown

How is immunocompromised defined?

10. These include:

- **WBC < 500/mm³**
- **Leukemia, lymphoma, or HIV with CD4 < 200**
- **Status post splenectomy**
- **Solid organ or stem cell TXP**
- **Cytotoxic chemotherapy**
- **Systemic steroids daily > 2 weeks on the date of event**

At least one of the following:

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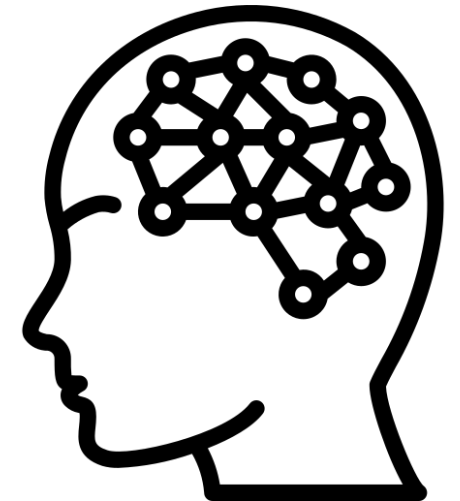
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Training & Education

- **MTQIP Data Dictionary link**
- **CDC FAQ**
- **CDC Training**

Don't forget about the front matter of this document that includes general comments like inclusion of aspiration pneumonia if PNU criteria met



Summary

- **Highlighted presence of variability**
- **Footnotes and FAQ for consistency**
- **Video training links**

