2026 NHSN Ventilator-Associated Event (VAE) Checklist

Ventilator-Associated Event (VAE) Summary		
Criterion	**Criterion Met**	**Date of Event (DOE)**
VAC	☐	
IVAC	☐	
PVAP	☐	
Please refer to Chapter 10 Ventilator-Associated Event (VAE) of the Patient Safety Manual for additional information.		

Documentation Review Checklist		
Ventilator Associated Event (VAE)		
Ventilator-Associated Condition (VAC)		
Element	**Element Met**	**Date**
Patient has at least ***one*** of the following:		
• Baseline period of stability* on the ventilator	☐	
• Baseline period of improvement* on the ventilator	☐	
AND immediately following a period of stability or improvement (as above), patient has at least ***one*** of the following indicators of worsening oxygenation:		
1. Increase in daily minimum** FiO_2 of ≥ 0.20 (20 points) over daily minimum FiO_2 of the first day in the baseline period, sustained for ≥ 2 calendar days	☐	
2. Increase in daily minimum** PEEP values of ≥ 3 cm $H_2O^{\dagger}$ over daily minimum PEEP of the first day in the baseline period, sustained for ≥ 2 calendar days	☐	

Note:
**__Stability or improvement__ is defined by ≥ 2 calendar days of stable or decreasing daily minimum FiO_2 or PEEP values. The __baseline period__ is defined as the 2 calendar days immediately preceding the first day of increased daily minimum FiO_2 or PEEP.*
***Daily minimum defined by lowest value of FiO_2 or PEEP during a calendar day that is maintained for > 1 hour.*
†Daily minimum PEEP values of 0-5 cm H_2O are considered equivalent for the purposes of VAE surveillance.

Reviewer Notes/Comments:

Ventilator Associated Event (VAE)		
Infection-related Ventilator-Associated Complication (IVAC)		
Element	**Element Met**	**Date**
Patient must meet VAC to be eligible for IVAC	☐	
On or after calendar day 3 of mechanical ventilation (MV) and within 2 calendar days before or after the onset of worsening oxygenation, the patient meets ***both*** 1 and 2:		
1) Patient has ***one*** of the following:		
• Temperature > 38°C (> 100.4°F)	☐	
• Temperature < 36°C (< 96.8°F)	☐	
• White blood cell count ≥ 12,000 cells/mm^3	☐	
• White blood cell count ≤ 4,000 cells/mm^3	☐	
AND		
2) Patient meets ***both*** of the following:		
• A new antimicrobial agent(s)* is started	☐	
• The new antimicrobial agent(s)** is continued for ≥ 4 qualifying antimicrobial days (QAD)	☐	
Note: **The agent is considered new for the purposes of this definition if it was NOT given to the patient on either of the 2 days preceding the current start date.* ***See table titled "List of Antimicrobial Agents Eligible for IVAC, PVAP"*		
Reviewer Notes/Comments:		

Ventilator Associated Event (VAE)		
Possible Ventilator-Associated Pneumonia (PVAP)		
Element	**Element Met**	**Date**
Patient must meet VAC and IVAC to be eligible for PVAP	☐	
AND Patient must meet ***one*** of following criteria on or after calendar day 3 of MV and within 2 calendar days before or after the onset of worsening oxygenation (Refer to VAE Protocol for organisms excluded from meeting PVAP)**:**		
1. **Criterion 1**: Positive culture of ***one*** of the following specimens, meeting quantitative or semi-quantitative† thresholds as outlined in protocol, without requirement for purulent respiratory secretions:		
• Endotracheal aspirate, ≥ 10^5 CFU/ml or corresponding semi-quantitative result	☐	
• Bronchoalveolar lavage, ≥ 10^4 CFU/ml or corresponding semi-quantitative result	☐	
• Lung tissue, ≥ 10^4 CFU/g or corresponding semi-quantitative result	☐	
• Protected specimen brush, ≥ 10^3 CFU/ml or corresponding semi-quantitative result	☐	
2. **Criterion 2**: Purulent respiratory secretions (defined as secretions from the lungs, bronchi, or trachea that contain ≥ 25 neutrophils and ≤ 10 squamous epithelial cells per low power field [lpf, x100])† **PLUS** organism identified from ***one*** of the following specimens (to include qualitative culture, or quantitative/semi-quantitative culture without sufficient growth to meet Criterion 1):		
• Sputum	☐	
• Endotracheal aspirate	☐	
• Bronchoalveolar lavage	☐	
• Lung tissue	☐	
• Protected specimen brush	☐	
3. **Criterion 3**: ***One*** of the following positive tests:		
• Organism identified from pleural fluid (where specimen was obtained during thoracentesis or within 24 hours of chest tube placement; pleural fluid specimens collected after a chest tube is repositioned or from a chest tube in place > 24 hours are not eligible for PVAP)	☐	
• Lung histopathology, defined as: 1) abscess formation or foci of consolidation with intense neutrophil accumulation in bronchioles and alveoli; 2) evidence of lung parenchyma invasion by fungi (hyphae, pseudohyphae or yeast forms); 3) evidence of infection with the viral pathogens listed below based on results of immunohistochemical assays, cytology, or microscopy performed on lung tissue	☐	
• Diagnostic test for *Legionella* species	☐	
• Diagnostic test on respiratory secretions for influenza virus, respiratory syncytial virus, adenovirus, parainfluenza virus, rhinovirus, human metapneumovirus, coronavirus	☐	
Note: *†If the laboratory reports semi-quantitative results, those results must correspond to the quantitative thresholds. Refer to Table 2 and Table 3.*		
Reviewer Notes/Comments:		

Table 2: Instructions for using the purulent respiratory secretions criterion, based on laboratory reporting of respiratory secretion direct examination results.

How do I use the purulent respiratory secretions criterion if …	Instruction
My laboratory reports counts of "white blood cells" or "polymorphonuclear leukocytes" or "leukocytes" rather than counts of "neutrophils"?	Assume that counts of cells identified by these other descriptors (for example, "white blood cells") are equivalent to counts of neutrophils, unless the laboratory tells you this is not the case.
My laboratory reports semi-quantitative results (not quantitative results) for numbers of neutrophils and squamous epithelial cells?	Check with the laboratory to get information about what quantitative ranges the semi-quantitative reports correspond to.
My laboratory cannot provide additional information on how its semi-quantitative reporting corresponds to quantitative reporting ranges for neutrophils and squamous epithelial cells?	Use the following direct examination results to meet the purulent respiratory secretions criterion: many, heavy, numerous, 4+, or ≥ 25 neutrophils per low power field (lpf) [x100], AND no, rare, occasional, few, 1+ or 2+, or ≤ 10 squamous epithelial cells per lpf [x100].
My laboratory reports only the numbers of neutrophils present, without reporting the number of squamous epithelial cells?	In this situation, the purulent secretions criterion may be met using the specified quantitative and semi-quantitative thresholds for neutrophils alone (specifically many, heavy, numerous, 4+, or ≥ 25 neutrophils per lpf [x100]).
My laboratory uses different reporting thresholds for neutrophils and squamous epithelial cells (for example, maximum report of ≥ 20 neutrophils per low power field [x100], or minimum report of ≤ 15 squamous epithelial cells per low power field [x100])?	In this situation, the purulent secretions criterion may be met using the laboratory's specified maximum quantitative threshold for neutrophils, and/or minimum quantitative threshold for squamous epithelial cells.
My laboratory processes respiratory specimens such as bronchoalveolar lavage fluid using a centrifugation procedure (for example, "cytospin"), and there is no quantitation or semi-quantitation of neutrophils or white blood cells in the direct examination report?	In this situation, a report indicating the presence of white blood cells, without quantitation, is sufficient to meet the purulent secretions criterion.

REPORTING INSTRUCTIONS (additional guidance may be found in the FAQs in the VAE Protocol):

1. Conducting in-plan VAE surveillance means assessing patients for the presence of ALL events included in the algorithm—from VAC to IVAC to PVAP. At this time, a unit conducting in-plan VAE surveillance cannot decide, for example, that only surveillance for VAC (and not for IVAC or PVAP) will be performed.
2. There is a hierarchy of definitions within VAE:
    a. If a patient meets criteria for VAC and IVAC, report as IVAC.
    b. If a patient meets criteria for VAC, IVAC, and PVAP, report PVAP.
3. Do not upgrade an event using findings that occur outside the VAE Window Period.
4. If the date of event (date of onset of worsening oxygenation) is on or after the date of documentation of evidence of consent AND the patient is being supported for organ donation purposes, the event should not be reported as a VAE.
5. Pathogens are not reported for VAC or IVAC events.
6. Secondary BSIs are not reported for VAC or IVAC events .
7. Pathogens may be reported for PVAP events, provided they are isolated or identified from appropriate specimen types according to the requirements of the algorithm and are NOT on the list of excluded organisms and culture or non-culture based microbiologic testing method results:
    a. Excluded organisms and culture or non-culture based microbiologic testing method results that cannot be used to meet the PVAP definition are as follows:
        i. "Normal respiratory flora," "normal oral flora," "mixed respiratory flora," "mixed oral flora," "altered oral flora" or other similar results indicating isolation of commensal flora of the oral cavity or upper respiratory tract. NOTE: A report of "flora" does not exclude the use of an eligible organism isolated or identified from the specimen. Only the "flora" is excluded from use.
        ii. Any *Candida* species or yeast not otherwise specified; any coagulase-negative *Staphylococcus* species; and any *Enterococcus* species, when identified from sputum, endotracheal aspirates, bronchoalveolar lavage, or protected specimen brushings specimens. These organisms can be reported as PVAP pathogens if identified from lung tissue or pleural fluid (where specimen was obtained during thoracentesis or within 24 hours of chest tube placement; pleural fluid specimens collected after a chest tube is repositioned or from a chest tube in place > 24 hours are not eligible for PVAP).
    b. Additionally, because organisms belonging to the following genera are typically causes of community-associated respiratory infections and are rarely or are not known to be causes of healthcare-associated infections, they are also excluded, and cannot be used to meet the PVAP definition when isolated from any eligible specimen type (to include lung tissue and pleural fluid).
        - **Fungi:** *Blastomyces, Histoplasma, Coccidioides, Paracoccidioides, Cryptococcus, Pneumocystis*
        - **Vector-borne bacteria:** *Anaplasma spp., Ehrlichia spp., Borrelia spp., Rickettsia spp.*

8. There are three criteria that can be used to meet the PVAP definition:
    a. Criterion 1: Positive culture meeting specific quantitative or semi-quantitative threshold (Table 3);
    b. Criterion 2: Purulent respiratory secretions AND identification of organisms NOT meeting the quantitative or semi-quantitative thresholds specified in Table 3;
    c. Criterion 3: One of the following:
        i. Organisms identified from pleural fluid specimen (where specimen was obtained during thoracentesis or within 24 hours of chest tube placement; pleural fluid specimens collected after a chest tube is repositioned or from a chest tube in place > 24 hours are not eligible for PVAP)
        ii. Positive lung histopathology
        iii. Lower respiratory specimen cytology findings suggestive of infection
        iv. Positive diagnostic test for *Legionella* species or selected respiratory viruses.
9. See Table 3 for the required quantitative culture thresholds meeting the PVAP definition (Criterion 1). Note that if your laboratory reports semi-quantitative culture results, you should check with your laboratory to confirm that semi-quantitative results match the quantitative thresholds noted in Table 3 (see **FAQ no. 15** in the VAE Protocol).

Table 3: Threshold values for cultured specimens used in the PVAP definition

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

CFU = colony forming units, g = gram, ml = milliliter

*Or corresponding semi-quantitative result (see **FAQ no. 15** in the VAE Protocol)

10. Secondary BSIs may be reported for PVAP events, provided that at least one organism identified from the blood matches an organism isolated from an appropriate respiratory tract specimen (including respiratory secretions, pleural fluid, and lung tissue). The respiratory tract specimen must have been collected on or after the 3rd day of mechanical ventilation and within 2 calendar days before or after the day of onset of worsening oxygenation to be considered for use in meeting the PVAP definition. In addition, the organisms identified from blood must have been collected during the 14-day event period, where day 1 is the day of onset of worsening oxygenation.
    a. In cases where PVAP is met with only the histopathology criterion and no culture or non-culture based testing is performed on an eligible respiratory specimen, and there is also a positive blood specimen a secondary BSI is not reported.
    b. In cases where a culture or non-culture based testing of respiratory secretions, pleural fluid or lung tissue is performed and does not identify an organism that matches an organism identified from blood, a secondary BSI is not reported.
    c. A matching organism is defined as one of the following:
        i. If genus and species are identified in both specimens, they must be the same.
            1. Example: A blood specimen resulted with *Enterobacter cloacae* and a BAL specimen resulted with *Enterobacter cloacae* are matching organisms.
            2. Example: A blood specimen resulted with *Enterobacter cloacae* and a BAL specimen resulted with *Enterobacter agglomerans* are NOT matching organisms as the species are different.
        ii. If the organism is less definitively identified in one specimen than the other, the lesser identified organism must be identified to at least the genus level and at that level the organisms must be the same.
            1. Example: A BAL resulted with *Pseudomonas spp*. and a blood specimen resulted with *Pseudomonas aeruginosa* are considered a match at the genus level and therefore the BSI can be reported as secondary BSI to VAE

               Exception: In cases where an organism is identified only as "yeast" or "yeast not otherwise specified," the organism can be considered a match to other yeasts, when collected during the required timeframe, whether more fully identified or not.

               Example: A blood specimen reported as *Candida albicans* and a lung tissue resulted with yeast not otherwise specified are considered to have matching organisms. In this example the two organisms are considered matching organisms because the organisms are complementary (specifically *Candida* is a type of yeast). NOTE: This exception is limited to yeast. It does not apply to identification of organisms as Gram positive cocci, Gram negative rods, etc.

               NOTE: Any *Candida* species or yeast not otherwise specified, any coagulase-negative *Staphylococcus* species, and any *Enterococcus* species identified from blood cannot be deemed secondary to a PVAP, unless the organism was also identified from pleural fluid or lung tissue.

List of Antimicrobial Agents Eligible for IVAC, PVAP

Antimicrobial Agent	Antimicrobial Agent (cont.)	Antimicrobial Agent (cont.)
AMIKACIN	CLARITHROMYCIN	NAFCILLIN
AMPHOTERICIN B	CLESROMIVAB	NIRMATRELVIR (includes NIRMATRELVIR/RITONAVIR)
AMPHOTERICIN B LIPOSOMAL	CLINDAMYCIN	OMADACYCLINE
AMPICILLIN	COLISTIMETHATE	ORITAVANCIN
AMPICILLIN/SULBACTAM	DALBAVANCIN	OSELTAMIVAR
ANIDULAFUNGIN	DELAFLOXACIN	OXACILLIN
AZITHROMYCIN	DOXYCYCLINE	PENICILLIN G
AZTREONAM	ERAVACYCLINE	PERAMIVIR
AZTREONAM/AVIBACTAM	ERTAPENEM	PIPERACILLIN/TAZOBACTAM
BALOXAVIR MARBOXIL	FLUCONAZOLE	PLAZOMICIN
CASPOFUNGIN	FOSFOMYCIN	POLYMYXIN B
CEFAZOLIN	GENTAMICIN	POSACONAZOLE
CEFEPIME	IMIPENEM/CILASTATIN	REMDESIVIR
CEFEPIME/ENMETAZOBACTAM	IMIPENEM/CILASTATIN/RELEBACTAM	REZAFUNGIN
CEFIDEROCOL	ISAVUCONAZONIUM	RIFAMPIN
CEFOTAXIME	ITRACONAZOLE	SULBACTAM/DURLOBACTAM
CEFOTETAN	LEFAMULIN	SULFAMETHOXAZOLE/TRIMETHOPRIM
CEFOXITIN	LEVOFLOXACIN	TEDIZOLID
CEFTAROLINE	LINEZOLID	TELAVANCIN
CEFTAZIDIME	MEROPENEM	TETRACYCLINE
CEFTAZIDIME/AVIBACTAM	MEROPENEM/VABORBACTAM	TIGECYCLINE
CEFTOBIPROLE MEDOCARIL	METRONIDAZOLE	TOBRAMYCIN
CEFTOLOZANE/TAZOBACTAM	MICAFUNGIN	VANCOMYCIN (IV ONLY)
CEFTRIAXONE	MINOCYCLINE	VORICONAZOLE
CEFUROXIME	MOLNUPIRAVIR	ZANAMIVIR
CIPROFLOXACIN	MOXIFLOXACIN	