

 B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-S01
	Effective Date:	02-28-2022
	Document Type:	Standard Operating Procedure
	Page Number:	1 of 5
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

PURPOSE:

1. To monitor the prevalence and for the detection of Ventilator Associated Events (VAE) occurring in the hospital.
2. To comply with the Department of Health as a requirement for licensing.

SCOPE:

Applies to all Infection Prevention and Control Unit (IPCU) staff of Dr. Pablo O. Torre Memorial Hospital

PERSON RESPONSIBLE:

Infection Prevention and Control Unit Nurse

GENERAL GUIDELINES:

1. DPOTMH shall comply with the Department of Health (DOH) requirement in monitoring for the occurrence of Ventilator Associated Events in the hospital for the purpose of hospital licensing.
2. Ventilator Associated Event (VAE) Surveillance Algorithm published by the Center for Disease Control (CDC) shall be utilized in assessing and categorizing ventilator associated events being investigated in the hospital.
3. The VAE rate formula shall be used for the purpose of data analysis in this institution. It is calculated by dividing the number of VAEs by the number of ventilator days and multiplying the result by 1000 (ventilator days).
4. Nurse stations under surveillance shall submit their device utilization census every end of the month to the Infection Prevention and Control Unit to be utilized in computing for the VAE rate.

 B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-S01
	Effective Date:	02-28-2022
	Document Type:	Standard Operating Procedure
	Page Number:	2 of 5
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

PROCEDURE:

1. IPCU nurse collates information about admitted patients on mechanical ventilation. Information to be gathered should include but not limited to: FiO₂, PEEP, Temperature, WBC count, Antibiotics and Culture results of sputum or endotracheal secretions (if any).
2. Identify patients for VAE surveillance based on the algorithm provided by the CDC. Patients must be mechanically ventilated for at least 4 calendar days to fulfill VAE criteria. The earliest day of event for VAE is day 3 of mechanical ventilation.
3. Correctly classify the event based on the VAE Algorithm. There is a hierarchy of definitions within VAE: If a patient meets criterion for VAC and IVAC, report as IVAC. If a patient meets criterion for VAC, IVAC, and PVAP, report PVAP. Do not upgrade an event using findings that occur outside the VAE Window Period.
4. Collect the device utilization census from the surveillance units and acquire the total number of ventilator days.
5. Calculate for the VAE rate for the applicable month of surveillance using the formula:

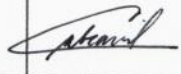
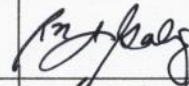
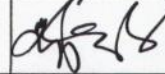
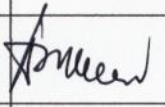
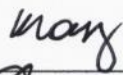
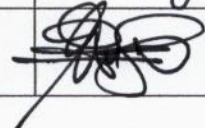
$$\text{VAE Rate} = \text{No. of VAEs} / \text{No. of Ventilator days} * 1000$$
6. Document the findings in the Hospital Acquired Infection (HAI) Form provided by the Department of Health.
7. Submit annual report to the Department of Health for licensing requirements.

REFERENCES:

- Raoof, S. (2014, January 1). *Ventilator-Associated Events: The New Definition* | *American Journal of Critical Care* | *American Association of Critical-Care Nurses*. AACN. Retrieved December 23, 2021, from <https://aacnjournals.org/ajconline/article/23/1/7/3835/Ventilator-Associated-Events-The-New-Definition>
- Mora Carpio, A. L., & Mora, J. I. (n.d.). *Positive End-Expiratory Pressure*. NCBI. Retrieved December 15, 2021, from <https://www.ncbi.nlm.nih.gov/books/NBK441904/>

 B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-S01
	Effective Date:	02-28-2022
	Document Type:	Standard Operating Procedure
	Page Number:	3 of 5
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

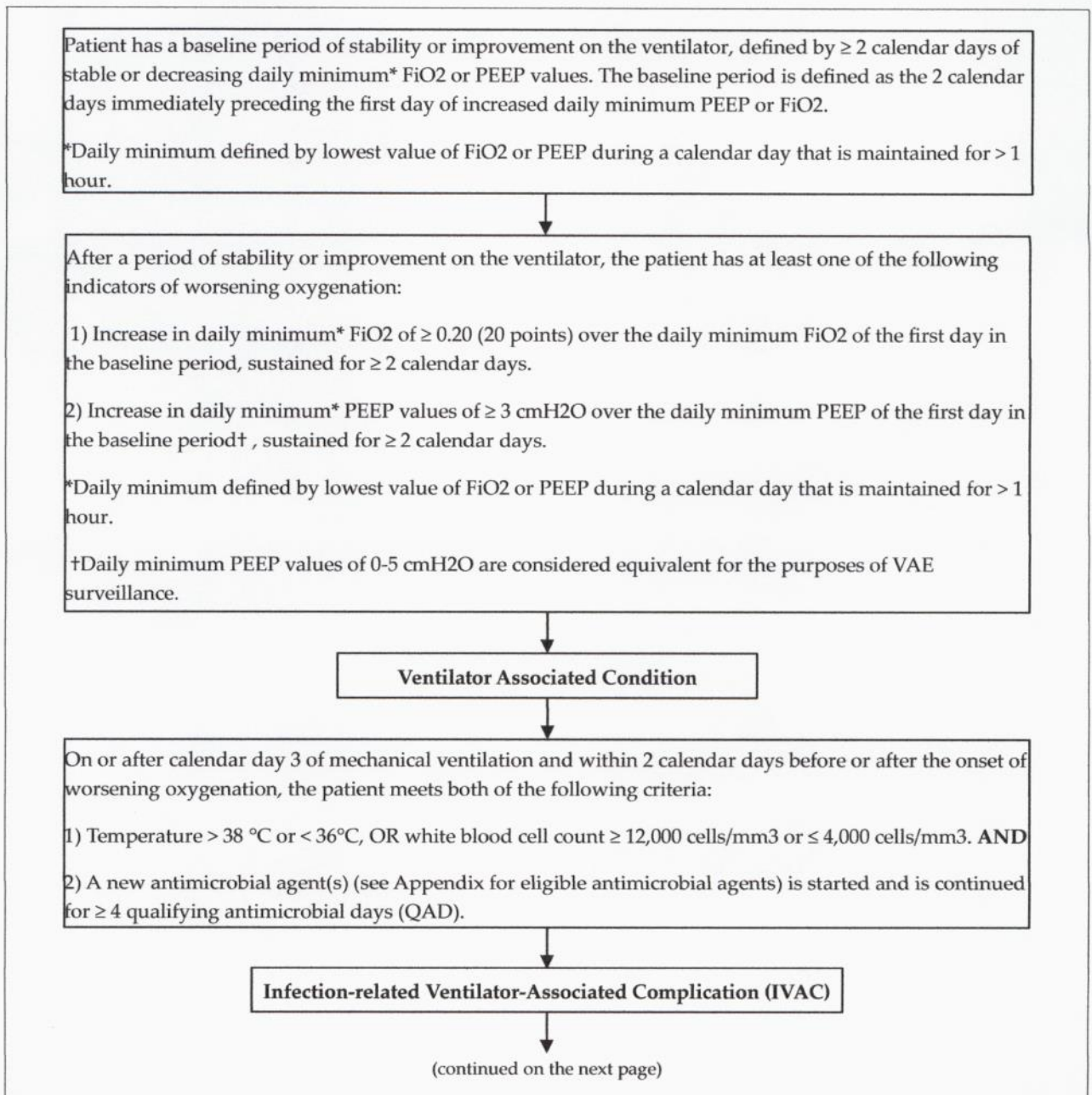
APPROVAL:

	Name/Title	Signature	Date
Prepared by:	CHARMAIGNE ANNE B. CANIEL Infection Prevention and Control Unit Nurse		03/29/2022
Verified:	RIA NICOLE A. GALVEZ, RN, APCHA Infection Prevention and Control Unit Supervisor		03/29/2022
	DOLORES ROMMELA T. RUIZ, MD, FPSMID Infection Prevention and Control Unit Interim Chair		03-29-2022
Reviewed:	DENNIS C. ESCALONA, MN, FPCHA, FPSQua Quality Assurance Supervisor		03-29-2022
Recommending Approval:	HENRY F. ALAVAREN, MD, FPSMID, FPSQua Total Quality Division Officer		5/17/2022
	MA. ANTONIA S. GENSOLI, MD, FPPS, FPCHA Vice President, Chief Medical Officer		6-6-22
Approved:	GENESIS GOLDI D. GOLINGAN President and CEO		6/22/22

 DR. PABLO O. TORRE MEMORIAL HOSPITAL B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100	Document Code:	DPOTMH-C-24-P12-S01
	Effective Date:	02-28-2022
	Document Type:	Standard Operating Procedure
	Page Number:	4 of 5
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

ANNEX:

Ventilator Associated Events (VAE) Surveillance Algorithm





DR. PABLO O. TORRE
MEMORIAL HOSPITAL

B.S. Aquino Drive,
Bacolod City,
Negros Occidental,
6100

Document Code:	DPOTMH-C-24-P12-S01
Effective Date:	02-28-2022
Document Type:	Standard Operating Procedure
Page Number:	5 of 5
Department/Section:	Infection Prevention and Control Unit
Document Title:	VAE SURVEILLANCE

On or after calendar day 3 of mechanical ventilation and within 2 calendar days before or after the onset of worsening oxygenation, **ONE** of the following criteria is met (taking into account organism exclusions specified in the protocol):

Criterion 1: Positive culture of one of the following specimens, meeting quantitative or semi-quantitative threshold† as outlined in protocol, without requirement for purulent respiratory secretions:

- Endotracheal aspirate, ≥ 105 CFU/ml or corresponding semi-quantitative result
- Bronchoalveolar lavage, ≥ 104 CFU/ml or corresponding semi-quantitative result
- Lung tissue, ≥ 104 CFU/g or corresponding semi-quantitative result
- Protected specimen brush, ≥ 103 CFU/ml or corresponding semi-quantitative result

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, $\times 100$])† **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

Criterion 3: One of the following positive tests:

- Organism identified from pleural fluid (where specimen was obtained during thoracentesis or initial placement of chest tube and NOT from an indwelling chest tube)
- 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

† If the laboratory reports semi-quantitative results, those results must correspond to the quantitative thresholds. Refer to Table 2 and 3



Possible Ventilator-Associated Pneumonia

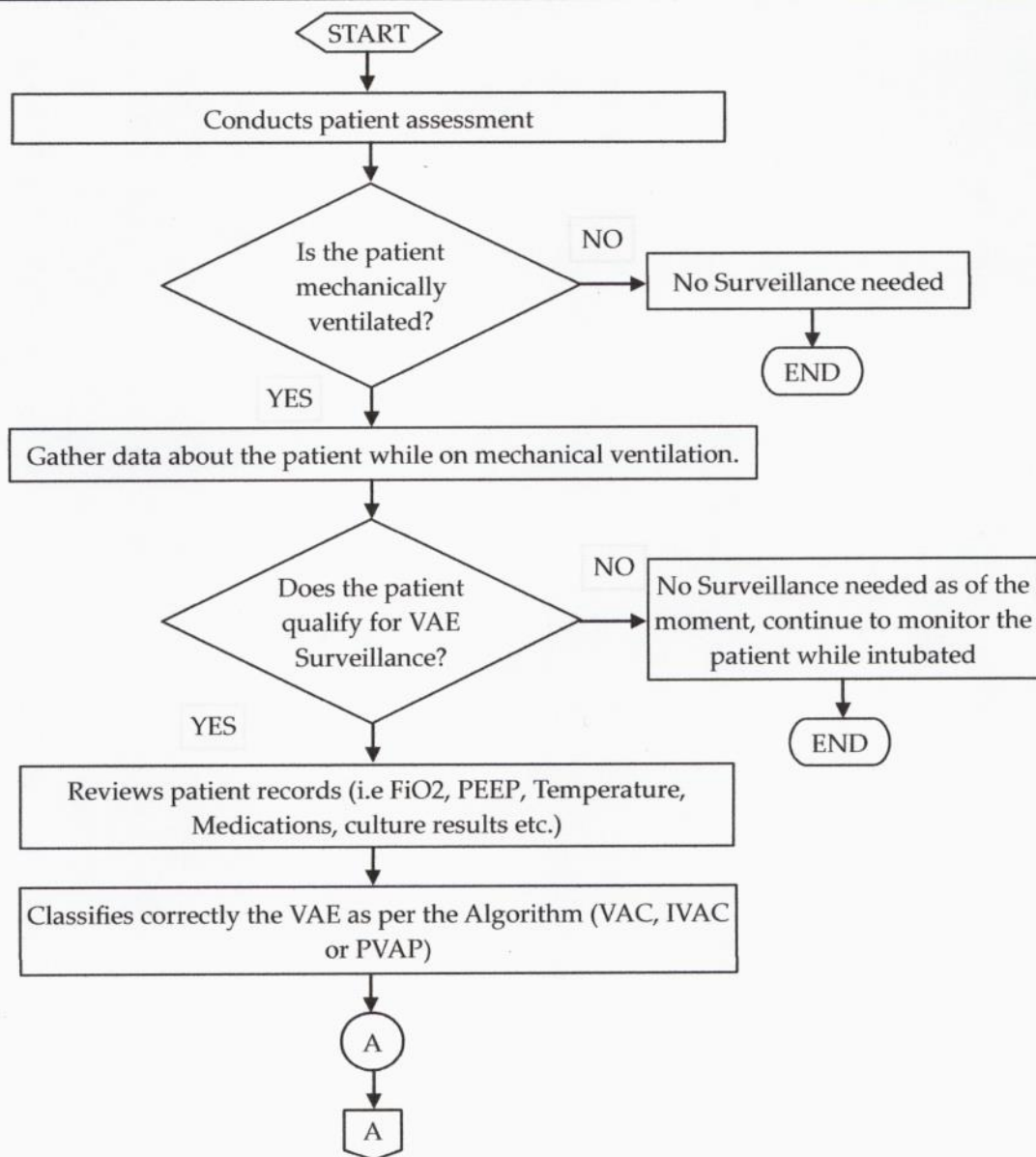


DR. PABLO O. TORRE
MEMORIAL HOSPITAL

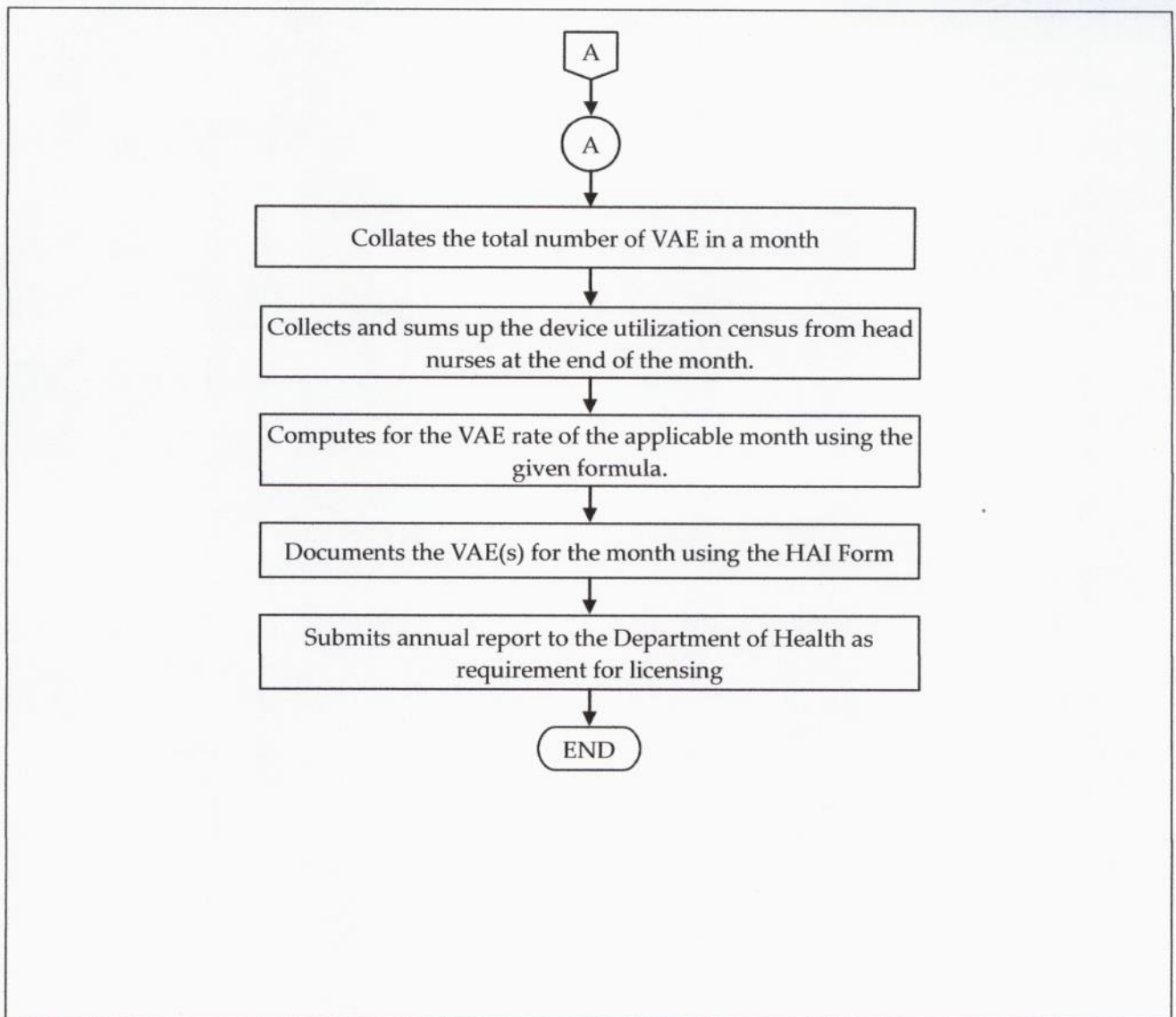
B.S. Aquino Drive,
Bacolod City,
Negros Occidental,
6100

Document Code:	DPOTMH-C-24-P12-FC01
Effective Date:	02-28-2022
Document Type:	Flowchart
Page Number:	1 of 3
Department/Section:	Infection Prevention and Control Unit
Document Title:	VAE SURVEILLANCE

FLOWCHART

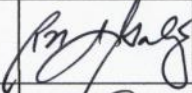
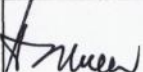
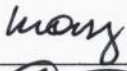
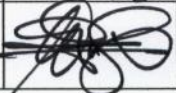


 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-FC01
	Effective Date:	02-28-2022
	Document Type:	Flowchart
	Page Number:	2 of 3
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE



 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-FC01
	Effective Date:	02-28-2022
	Document Type:	Flowchart
	Page Number:	3 of 3
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

APPROVAL:

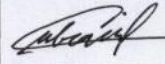
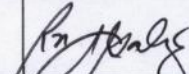
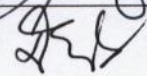
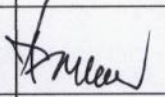
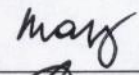
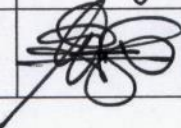
	Name/Title	Signature	Date
Prepared by:	CHARMAIGNE ANNE B. CANIEL Infection Prevention and Control Unit Nurse		03/29/2022
Verified:	RIA NICOLE A. GALVEZ, RN, APCHA Infection Prevention and Control Unit Supervisor		03/29/2022
	DOLORES ROMMELA T. RUIZ, MD, FPSMID Infection Prevention and Control Unit Interim Chair		03/29/2022
Reviewed:	DENNIS C. ESCALONA, MN, FPCHA, FPSQua Quality Assurance Supervisor		03/29/2022
Recommending Approval:	HENRY F. ALAVAREN, MD, FPSMID, FPSQua Total Quality Division Officer		5/19/2022
	MA. ANTONIA S. GENSOLI, MD, FPPS, FPCHA Vice President, Chief Medical Officer		6.6.22
Approved:	GENESIS GOLDI D. GOLINGAN President and CEO		6/23/22

 B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100 DR. PABLO O. TORRE MEMORIAL HOSPITAL	Document Code:	DPOTMH-C-24-P12-WI01
	Effective Date:	02-28-2022
	Document Type:	Work Instruction
	Page Number:	1 of 2
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

KEY TASKS	PERSON RESPONSIBLE
1. Collates information about admitted patients on mechanical ventilation. Information to be gathered should include but not limited to: FiO ₂ , PEEP, Temperature, WBC count, Antibiotics and Culture results of sputum or endotracheal secretions (if any)	IPCU Nurse
2. Identifies patients for VAE surveillance based on the algorithm provided by the CDC	IPCU Nurse
3. Classifies correctly the event based on the VAE Algorithm	IPCU Nurse
4. Collects the device utilization census from the surveillance units and acquire the total number of ventilator days	IPCU Nurse
5. Calculates for the VAE rate for the applicable month of surveillance	IPCU Nurse
6. Documents the findings in the Hospital Acquired Infection (HAI) Form provided by the Department of Health	IPCU Nurse
7. Submits annual report to the Department of Health for licensing requirements	IPCU Nurse

 DR. PABLO O. TORRE MEMORIAL HOSPITAL B.S. Aquino Drive, Bacolod City, Negros Occidental, 6100	Document Code:	DPOTMH-C-24-P12-WI01
	Effective Date:	02-28-2022
	Document Type:	Work Instruction
	Page Number:	2 of 2
	Department/Section:	Infection Prevention and Control Unit
	Document Title:	VAE SURVEILLANCE

APPROVAL:

	Name/Title	Signature	Date
Prepared by:	CHARMAIGNE ANNE B. CANIEL Infection Prevention and Control Unit Nurse		03/29/2022
Verified:	RIA NICOLE A. GALVEZ, RN, APCHA Infection Prevention and Control Unit Supervisor		03/29/2022
	DOLORES ROMMELA T. RUIZ, MD, FPSMID Infection Prevention and Control Unit Interim Chair		03-29-2022
Reviewed:	DENNIS C. ESCALONA, MN, FPCHA, FPSQua Quality Assurance Supervisor		03-29-2022
Recommending Approval:	HENRY F. ALAVAREN, MD, FPSMID, FPSQua Total Quality Division Officer		5/19/2022
	MA. ANTONIA S. GENSOLI, MD, FPPS, FPCHA Vice President, Chief Medical Officer		6-6-22
Approved:	GENESIS GOLDI D. GOLINGAN President and CEO		6/23/22