

#### PATIENT SAFETY COMPONENT

#### DIFFERENCES BETWEEN TOTAL VAE AND IVAC+ EVENTS FOR ANALYSIS

NHSN METHODS AND ANALYTICS TEAM
MAY 2021

#### **LEARNING OBJECTIVES**

We will define and demonstrate the differences between **Total Ventilator Associated Events (Total VAE)** and **Infection-related Ventilator- Associated Complication (IVAC+)** events. By the end of this lesson, you will be able to:

- Distinguish Total VAE from IVAC+ events
- Navigate the NHSN application to run and analyze reports for Total
   VAE and IVAC+ events
- Interpret Total VAE from IVAC+ events Line Lists and SIR reports

#### **IDENTIFICATION OF TOTAL VAE AND IVAC+ EVENTS**

The VAE algorithm is progressive in terms of criteria to be met, where in Ventilator-Associated Condition (VAC) criteria must be met before an event can meet Infection-related Ventilator-Associated complication (IVAC) and IVAC criteria must be met before identifying a Possible Ventilator-Associated Pneumonia (PVAP) event.

"Total VAE" includes events identified as VAC, IVAC and PVAP

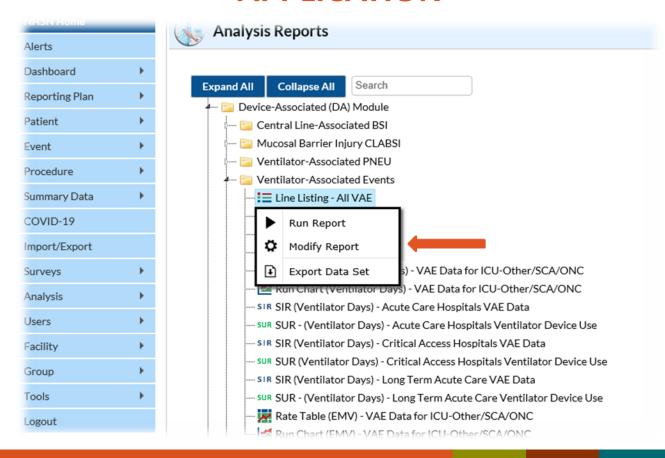
"IVAC Plus" includes events identified as IVAC and PVAP

#### **MEASURES FOR TOTAL VAE AND IVAC+ EVENTS**

- Total VAE Rates or SIR (representing all events that met at least the VAC definition) would be suitable for,
  - Benchmarking, inter-facility comparisons, pay-forperformance, public reporting.

- IVAC+ Rates or SIR (representing all events that met at least the IVAC definition) would be suitable for,
  - Intra-facility comparisons, internal use.

## LINE LISTING – ALL VAE, AN ANALYSIS REPORT IN THE NHSN APPLICATION



#### LINE LIST OF TOTAL VAE EVENTS

### National Healthcare Safety Network Line Listing for All Ventilator-Associated Events

As of: January 29, 2021 at 9:13 PM

Date Range: VA\_EVENTS evntDateYQ After and Including 2018Q1

orgID	patID	dob	gender	admitDate	eventID	eventDate	eventType	spcEvent	location
10018	1098777	02/13/2012	M	04/29/2019	89453	05/06/2019	VAE	IVAC	5G
10018	123	01/01/1980	F	02/01/2018	68385	02/05/2018	VAE	PVAP	5G
10018	1234	10/01/1992	F	02/01/2018	68383	02/04/2018	VAE	PVAP	5G
10018	1CG	02/01/1960	F	02/01/2018	68947	02/05/2018	VAE	PVAP	5G
10018	101	05/14/1991	M	10/01/2020	99089	10/04/2020	VAE	PVAP	ICU
10018	2	01/01/1987	F	01/12/2020	99067	10/11/2020	VAE	PVAP	ICU
10018	654321	10/01/1992	M	07/15/2018	77743	07/20/2018	VAE	VAC	ICU-A
10018	1006_563	06/09/1969	M	09/20/2019	88672	09/26/2019	VAE	VAC	MCC

**Total VAE Infection Count: 8** 

#### **LINE LIST OF IVAC+ EVENTS**

### National Healthcare Safety Network Line Listing for All Ventilator-Associated Events

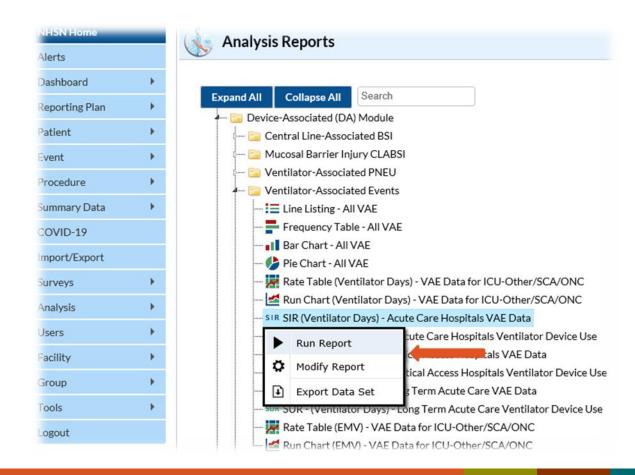
As of: January 29, 2021 at 9:13 PM

Date Range: VA\_EVENTS evntDateYQ After and Including 2018Q1

orgID	patID	dob	gender	admitDate	eventID	eventDate	eventType	spcEvent	location
10018	1098777	02/13/2012	M	04/29/2019	89453	05/06/2019	VAE	IVAC	5G
10018	123	01/01/1980	F	02/01/2018	68385	02/05/2018	VAE	PVAP	5G
10018	1234	10/01/1992	F	02/01/2018	68383	02/04/2018	VAE	PVAP	5G
10018	1CG	02/01/1960	F	02/01/2018	68947	02/05/2018	VAE	PVAP	5G
10018	101	05/14/1991	М	10/01/2020	99089	10/04/2020	VAE	PVAP	ICU
10018	2	01/01/1987	F	01/12/2020	99067	10/11/2020	VAE	PVAP	ICU
10018	654321	10/01/1992	M	07/15/2018	77743	07/20/2018	VAE	VAC	ICU-A
10018	1006_563	06/09/1969	М	09/20/2019	88672	09/26/2019	VAE	VAC	MCC

**IVAC+ Infection Count: 6** 

#### ANALYSIS REPORTS FOR VAE IN THE NHSN APPLICATION



# TOTAL VAE AND IVAC+ SIR TABLES IN ANALYSIS REPORTS FOR ACUTE CARE HOSPITALS

There are <u>4 types of SIR tables</u> each for <u>Total VAE</u> and <u>IVAC+</u> events separated by <u>MedType</u> in NHSN analysis reports.

- 1. By OrgID
- By OrgID/LocationType
- 3. By OrgID/CDC Location Code
- 4. By OrgID/Location

# TOTAL VAE AND IVAC+ SIR TABLES IN ANALYSIS REPORTS FOR ACUTE CARE HOSPITALS

<u>MedType</u> describes the Medical School Affiliation Status of an NHSN Teaching Facility. <u>MedTypes</u> can be one of the following,

- 1. Major: Facility that trains medical students, nursing students and/or post-graduate students
- 2. **Graduate:** Facility that trains only post-graduate medical residents/fellows
- 3. Undergraduate: Facility that trains current (undergraduate) medical students and/or nursing students

## TOTAL VAE SIR AND IVAC+ SIR TABLES BY ORGID FOR MEDTYPE = G

#### National Healthcare Safety Network

SIR for Ventilator-Associated Event Data for Acute Care Hospitals (2015 Baseline) - By OrgID

As of: February 2, 2021 at 3:21 PM
Date Range: All BS2\_VAE\_RATESICU\_SCA

vaeCategory=Total VAE orgid=10018 medType=G

orgid	ccn	summaryYH	infCount	numPred	numventdays	SIR	SIR_pval	SIR95CI	SIR_pcti	vaeCategory
10018	12345	2017H1	2	2.920	363	0.685	0.6529	0.115, 2.263	45	Total VAE
10018	12345	2017H2	3	0.039	5					Total VAE
10018	66666	2019H1	1	0.179	46					Total VAE
10018	66666	2019H2	1	0.525	117					Total VAE
10018	66666	2020H1	0	0.071	25					Total VAE
10018	66666	2020H2	0	0.021	7	(				Total VAE

#### National Healthcare Safety Network

SIR for Ventilator-Associated Event Data for Acute Care Hospitals (2015 Baseline) - By OrgID

As of: February 2, 2021 at 3:21 PM
Date Range: All BS2\_VAE\_RATESICU\_SCA

vaeCategory=<u>IVAC Plus</u> orgid=10018 medType=G

orgid	ccn	summaryYH	infCount	numPred	numventdays	SIR	SIR_pval	SIR95CI	SIR_pcti	vaeCategory
10018	12345	2017H1	0	1.211	363	0.000	0.2978	, 2.473	20	IVAC Plus
10018	12345	2017H2	3	0.014	5					IVAC Plus
10018	66666	2019H1	1	0.077	46					IVAC Plus
10018	66666	2019H2	0	0.197	117					IVAC Plus
10018	66666	2020H1	0	0.042	25					IVAC Plus
10018	66666	2020H2	0	0.012	7					IVAC Plus

#### **SUMMARY**

1. To distinguish between Total VAE and IVAC+ events

2. To navigate NHSN to analyze reports (examples: line lists, SIR tables) for Total VAE and IVAC+ events

3. To interpret the analysis reports of **Total VAE** and **IVAC+** events

#### **ADDITIONAL RESOURCES**

- SIR Guide
  - https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsnsir-guide.pdf
- Ventilator-Associated Event (VAE) and Pediatric VAE Analysis –
   March 2021 Training links,
  - YouTube link <u>2021 NHSN Training: Ventilator-Associated</u>
     Event (VAE) and Pediatric VAE Analysis YouTube
  - Slide set link <u>Ventilator-Associated Event (VAE) and PedVAE</u>
     Analysis (cdc.gov)

# FOR ANY QUESTIONS OR CONCERNS, PLEASE CONTACT THE NHSN HELPDESK AT NHSN@CDC.GOV



For more information please contact Centers for Disease Control and Prevention 1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: <a href="mailto:cdcinfo@cdc.gov">cdcinfo@cdc.gov</a> Web: <a href="mailto:www.cdc.gov">www.cdc.gov</a>

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.