

# Ventilator-Associated Events in European Intensive Care Units. The EU-VAE project.

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## Background

In 2013 the U.S. Centers for Disease Control proposed a new definition for the ventilator-associated conditions (VAC). The aim of this study was to assess the VAC incidence in different European Intensive care units (ICU) and related variables.

## Methods

We performed a preliminary analysis at 33% of enrollment of a ESGCIP-ESCMID research project: EU-VAE (Prospective Evaluation of Incidence, Risk Factors, and Outcomes for Patients with Ventilator Associated Events in European Intensive Care Units), a prospective, observational, multicentric study. Incidence of the different ventilator-associated events was analyzed according to CDC definition: ventilator associated condition (VAC), Infection-ventilator associated condition (IVAC) and probable or possible pneumonia associated to ventilation. Statistical analysis was performed with 21.0 SPSS program; continuous data are reported as median and interquartile range and categorical data as numbers and percentages.

## Results

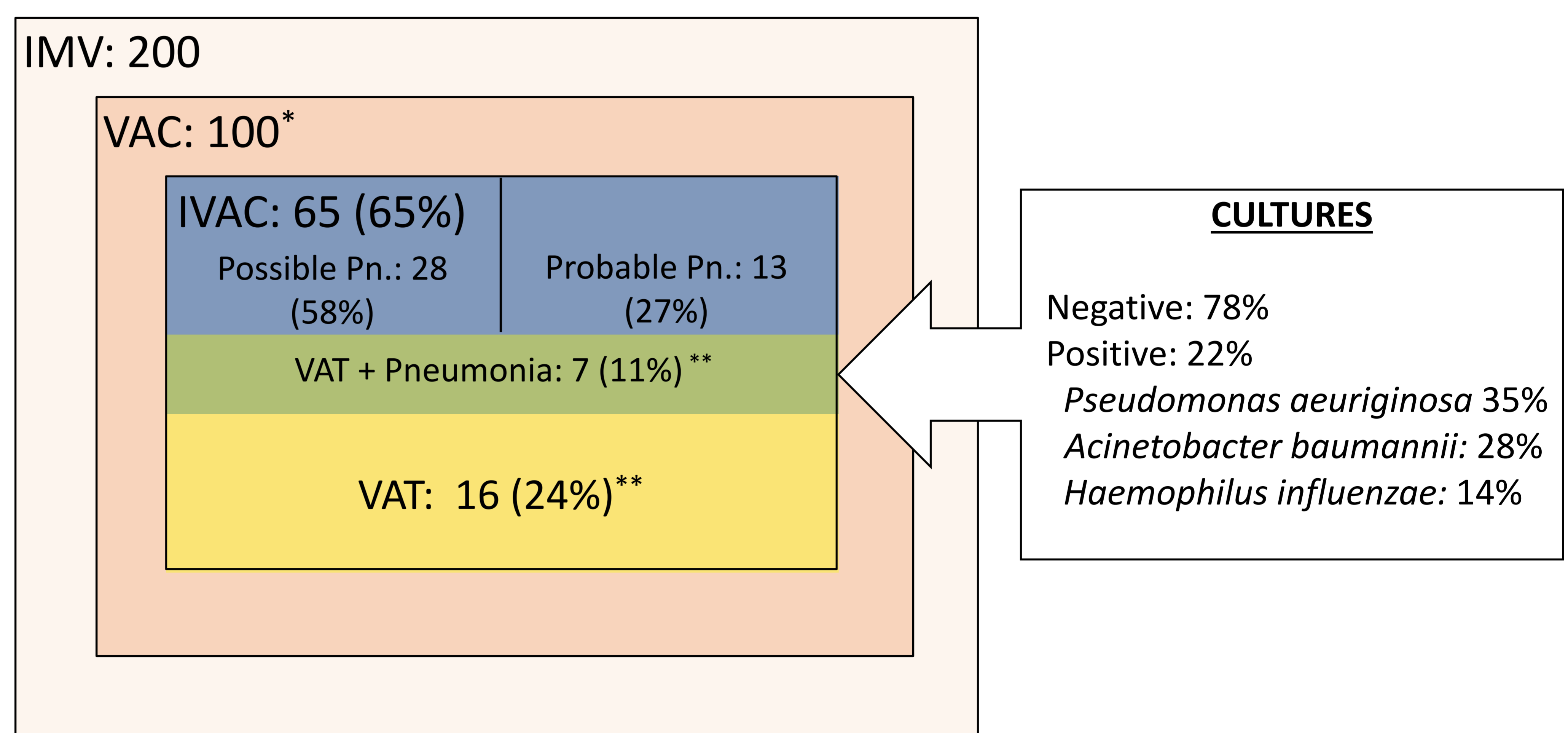
GENERAL POPULATION (n=200)	
Age, mean (IQR: 25-75) years	60 (48-74)
Sex, number (%)	
Male	112 (56%)
Female	88 (44%)
APACHE II, median (IQR 25-75)	20 (15-26)
ICU Mortality, number (%)	
General population	55 (27%)
IVAC group	25 (39%)

**VAC:** Increase in PEEP > 3 cm H<sub>2</sub>O or in FiO<sub>2</sub> > 0.2 after a stability/improvement period of 2 days

**IVAC:** VAC + leucocytosis/leucopenia or fever/hypothermia + beginning of a new antibiotic

**Possible pneumonia:** IVAC + purulent secretions OR growth of a pathogenic microorganism in cultures

**Probable pneumonia:** IVAC + purulent secretions AND growth of a pathogenic microorganism in cultures



IMV: invasive mechanical ventilation; VAC: ventilator associated condition; IVAC: infection-ventilator associated condition; Possible Pn.: possible pneumonia; Probable Pn.: probable pneumonia

\*VAC episodes

\*\*According to previous definition

## Conclusions

The ventilator-associated condition is a frequent entity in mechanical ventilated patients in Europe. IVAC represents 65% of ventilator-associated conditions in Europe. Quality improvement efforts should be addressed to reduce VAC incidence.