



## OPERATIONAL DEFINITION

### **MEASUREMENT: Nosocomial Infection Rates: Ventilator Associated Pneumonias per 1000 Ventilator Days**

#### **I. Description and Rationale**

*This measure answers the question:*

*How often do patients contract Ventilator-Associated Pneumonia as a result of the medical care we provide?*

Ventilator Associated Pneumonias are assessed according to definitions published by the National Healthcare Safety Network [NHSN] of the Centers for Disease Control and Prevention (CDC). This measure is the number of Ventilator Associated Pneumonias (VAPs) per 1000 ventilator days. The data is collected house wide for patients on a Ventilator. The pneumonia must not be present or incubating at the time of admission. For most infections, this means that the infection does not become evident until 48 hours or more after admission, but each infection must be assessed individually.

#### **II. Population Definition (Inclusions/Exclusions)**

- Collected house wide for patients on a Ventilator
- Analyzed and reported separately for CCHMC house-wide, RCNIC, CICU, and PICU.
- Pneumonia must not be present or incubating at the time of admission into the hospital. For most infections, this means that the infection does not become evident until 48 hours or more after admission, but each infection must be assessed individually.

#### **III. Data Source(s)**

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#### **IV. Sampling and Data Collection Plan**

Numerators: The following methods are used to determine infections:

- 1) For ICU patients, there is a daily review of patient charts for any indications that there might be an infection, and appropriate steps taken to identify and/or confirm, based on what is found in those reviews.
- 2) For both ICU and non-ICU patients, Infection Control will be alerted to any positive results from blood cultures ordered by the physicians. In such cases, Infection Control will also review the corresponding patient charts to check for any additional information or indications.

3) Discharge codes are reviewed for all patients for indication of any infections not previously identified.

Denominators: Ventilator Days are provided to Infection Control monthly, from Respiratory Care, who tracks ventilator usage daily.

## V. Calculation

*Numerator:* Number of patients with a Ventilator Associated Pneumonia as defined by CDC guidelines.

*Denominator:* Total number of ventilator days during the time period

Nosocomial Infection Rate = (Numerator/Denominator)\*1000

## VI. Analysis Plan and Frequency of Reporting

Data is collected monthly. It is reported separately for CCHMC house-wide, RCNIC, CICU, and PICU.

## VII. Reporting Venues

- Monthly control charts are posted on Centerlink under Strategic Improvement Priorities Reports and under Patient Safety.

## VIII. Limitations

## IX. Experts/Resources

- Centers for Disease Control (CDC) – National Healthcare Safety Network [NHSN]: definitions are available for download at...  
<http://www.cdc.gov/ncidod/dhqp/pdf/nnis/NosInfDefinitions.pdf>
- CDC NNIS System. National Nosocomial Infections Surveillance (NNIS) System report, data summary from January 1992 through June 2003, issued August 2003.
- Jarvis W. R., Benchmarking for Prevention: The Centers for Disease Control and Prevention's National Nosocomial Infections Surveillance (NNIS) System Experience. Infection 31:2003 Supplement 2.

## X. Revision History

Version	Primary Author(s)	Description of Version	Date Completed
Initial Draft	TAW		06/29/2006
Revision 1	TAW	Expanded Sampling and Data Collection Description Updated NNIS references to NHSN	09/11/2008