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OUTCOME SURVEILLANCE PLUS FEEDBACK EFFECT ON RATES OF VENTILATOR ASSOCIATED PNEUMONIA AND MORTALITY IN ITALIAN INTENSIVE CARE UNITS

DR F FRANZETTI * (Luigi Sacco Hospital) , DR VD ROSENTHAL (Medical College of Buenos Aires) , MS S CAPPOIA (Luigi Sacco HospitalLuigi Sacco HospitalLuigi Sacco HospitalLuigi Sacco Hospital) , MS MT GARAVAGLIA (Luigi Sacco Hospital) , MR N MAZZEO (Luigi Sacco Hospital) , DR F RAIMONDI (Luigi Sacco Hospital)

Background:

To ascertain the effect of an infection control program utilizing Outcome Surveillance plus feedback on intensive care unit (ICU) rates of ventilator associated pneumonia (VAP) mortality.

Methods:

We studied four adult ICU of a hospital in Italy. A prospective before/after trial in which rates of VAP and mortality were determined during a period of active outcome surveillance without feedback (phase 1) were compared to rates after implementation feedback (phase 2). Phase one was developed from November 2003 to November 2004, and phase two from December 2004 to February 2005

Results:

Patients during each study phase were similar with respect to gender (P value, 0.3864), Diabetes (P.value, 0.1540), Hypertension (P.value,.0.1322), Angina pectoris (P.value, 0.6476), Cardiac Surgery (P.value, 0.4296), COPD (P.value, 0.7738), Cancer (P.value, 0.2562), Renal impairment (P.value 0.8034), Hepatic failure (P.value, 0.8735), Abdominal Surgery (P.value, 0.4458), Thoracic Surgery (P.value, 0.3469), Trauma (P.value, 0.3043), Previous Infection (P.value, 0.4458), and Stroke (P.value, 0.6622).

673 Mechanical Ventilator (MV) days were accumulated during phase one and 1035 MV-days during phase two. Rates of VAP were significantly lowered from baseline rates after implementation of outcome surveillance and feedback: 16.3 VAP per 1000 MV days in phase I (11/673) versus 3.9 VAP per 1000 MV days in Phase 2 (4/1035), RR = 0.24, 95% CI = 0.08 – 0.74, P-value = 0.0071). The VAP rate reduction was 76.4%.

Mortality rates were significantly lowered from Phase 1, where 24.2% patients died (66/273) versus Phase 2, where 4.2% patients died (26/615), RR = 0.17, 95% CI = 0.11 – 0.28, P-value = 0.0000)

Conclusion:

Implementation of an infection control program, utilizing outcome surveillance plus feedback resulted in significant reductions of VAP and mortality rates.