Service Priorities and Programmes

Electronic Presentations

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Submitting author: Dr Hiu Lam Helen Wu
Post title: Associate Consultant, Queen Elizabeth Hospital,

QEH ICU Say NO to VAP

HLH Wu, KY Lai, KW Au Yeung, KHA Leung, KW Lam, PKO Chan, CH Chan, WYG Ng, KM Yim, KC Sin, SY Au, SK Yung, HF Ko, R Leung, CL Lam, SF Luk
Intensive Care Unit, Queen Elizabeth Hospital

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Introduction

Patients receiving mechanical ventilation have a high risk of developing ventilator-associated pneumonia (VAP), which is associated with higher mortality. The Centers for Disease Control (CDC) 2003 Guideline therefore strongly recommends that surveillance be conducted for pneumonia in mechanically ventilated ICU patients to facilitate identification of trends and for inter-hospital comparison. The Institute for Healthcare Improvement (IHI) Ventilator Bundle is a series of intervention related to ventilator care that, when implemented together, will achieve significantly better outcome than when implemented individually, which includes: • Elevation of the Head of Bed • Peptic Ulcer Disease Prophylaxis • Deep Venous Thrombosis (DVT) Prophylaxis • Daily "Sedation Vacation" and Assessment of Readiness to Extubate • Daily Oral Care with Chlorhexidine

Objectives

We hope to have continuous and regular surveillance on our VAP rate and bundle compliance, by using the least manpower. This is particularly important in a busy Intensive Care Unit (ICU) like Queen Elizabeth Hospital (QEH). In addition, we would like to update and keep alerting our staff about VAP and the importance of bundle compliance.

Methodology

We collaborate with Philips to modify the built-in VAP and ventilator bundle care surveillance function inside Clinical Information System (CIS). No additional cost is needed. It consists of two parts. 1 VAP surveillance 1.1 VAP is defined as those having Clinical Pulmonary Infection Score (CPIS) more than 6 after 48 hours post ICU admission. 1.2 The computer automatically retrieve the most updated data including temperature, blood leukocyte count and PaO2/FIO2 ratio. Alert will appear in the form of flash bar when the CPIS is more than 4. 1.3 Doctor have daily check and calculate the CPIS for those patients with the alert activated. They do not need to calculate the score for every single patient. 1.4 VAP is confirmed if CPIS is more than 6 and this will be entered into CIS. 2 Bundles compliance 2.1 Our nurses will have daily check of the head of bed elevation, stress ulcer prophylaxis, DVT prophylaxis, optimization of

sedation and assessment for weaning. They enter these into CIS accordingly. Doctor will be informed for any non-compliance. Data are retrieved from CIS monthly with the VAP rate and bundle compliance rate calculated. Results are sent to all ICU staff in the form of monthly newsletter, with updated information about VAP also included e.g. articles, conference. Our campaign consists of other activities including audit for data entry, as well as promotional and educational activities e.g. poster and quiz.

Result

It's regrettable that we do not have the baseline VAP rate before the campaign. Moreover, our monthly VAP rate from July to December 2013 were not inferior to other centers which also use CPIS to define VAP. Our average rate equals to 8.3 per 1000 patient ventilator day, and the range was between 4.1 to 14.7 per 1000 patient ventilator day. We achieved a high bundle compliance rate ranging from 97.2% to 100%. We will continue our monthly VAP and bundle compliance surveillance to monitor the trend of VAP, as well as other promotional and educational activities to keep our vigilance on this issue.