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Reduction of Central Line-associated Bloodstream Infection (CLABSI) in Intensive Care Unit (ICU)

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Introduction

Introduction Central venous catheters (CVCs) are commonly used in ICU. They allow the administration of intravenous fluids, blood products, medications, and parenteral nutrition. All these activities are beneficial and life saving for the patients. However, their use also poses potential risk causing bloodstream infection. In the fourth quarter of 2014, the CLABSI rate rapidly rose above usual at 6.4 per 1000 catheter days. Compared with the recent three quarters of 2014, the CLABSI rate was 0.66 that was significantly high. After notifying the staff, it dropped to 3.94 per 1000 catheter days in first quarter of 2015. However, it was still high compared with previous surveillance records. At the same time, it was found that the hand hygiene compliance was not as good as in the past few years. Actually, CLABSIs are preventable through evidence based guidelines for maintenance of CVCs and compliance of infection control practice. Thus, collaborative program was developed by Intensive Care Unit and Infection Control Team.

Objectives

Objective: To reduce central line-associated bloodstream infection in ICU.

Methodology

Methodology Simple randomize survey was performed. Some points were identified that should be reinforced according to the guideline of CVCs care. Thus, the following actions were implemented step by step for the improvement. 1. Audit of central line care and survey about hand hygiene knowledge to further identify the practices that require improvement. 2. Issue the central line care audit report and provide educational talks for hand hygiene and CVCs care simultaneously 3. Invite the senior ICU staff as hand hygiene ambassador to enhance staff engagement. On the other hand, they are also invited to be internal auditor after training provided. Thus, clinical supervision could be enhanced. 4. Review the program through the CLABSI surveillance, central line care and hand hygiene care audit.

Result

Result 1. Overall compliance rate of central line care improved from 83.3% to 95%.
2. 90% hand hygiene compliance rate achieved. There was 15% rise from the fourth quarter in 2014 to the end of 2015. 3. CLABSI rate declined from 6.4 per 1000 catheter days in the fourth quarter 2014 to 1.8 in the fourth quarter of 2015.

Conclusion The goal of eliminating CLABSI could be achieved through consistent adherence to evidence-based practices. For this purpose, objective data such as outcome surveillance and audit results are important for the staff to review their practice. Further, staff education and performance feedback could facilitate the improvements in CLABSI rates. Zero tolerance is the target.