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Enhancement of Patient-Controlled Analgesia (PCA) Safety with EASE Program

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Introduction

Intravenous Patient-controlled analgesia (PCA) is a commonly used pain relief modality in Department of Surgery. There was an incident of PCA-related morphine overdose happened in 2013. Therefore, this program was introduced in February 2014 to ensure safe use of PCA.

Objectives

To guarantee safe use of PCA by (1) Reinforcing nurses' knowledge on PCA (2) Enhancing completeness and correctness of PCA documentation (3) Ensure complications are identified and managed promptly

Methodology

The 4 main elements of this program could be summarized as the mnemonic: EASE
Education: Education sessions were held by Pain Team to enhance nurses' knowledge on PCA. Common misconceptions and frequently-made mistakes about PCA monitoring and management were emphasized. Also, PCA was included in the Mandatory Department Orientation Program for nursing students and new comers. In order to ensure that nurses were capable of monitoring the patient using PCA, all of them needed to pass an assessment before they were allowed to perform PCA observation.
Audit: Audit of Acute Pain Observation Chart would be conducted to assess nurses' compliance, completeness and accuracy in PCA monitoring. Besides, nurses' performance in detection and management of PCA-related complications would also be assessed.
Supervision: Shift-in-charge or pain link-nurses would review patients using PCA and their PCA observation charts on each shift and would feedback directly to the corresponding colleagues once error was noted.
Evaluation: On-going review of nurses' performance would be done. Strengths and weaknesses in PCA monitoring would be shared with colleagues quarterly by various means like email or duty handover.

Result

Results: From March 2014 to May 2014, 47 cases were audited to obtain a baseline PCA monitoring compliance rate of 94.24%. After the implementation of program, from June 2014 to December 2014, 65 cases were studied. The compliance improved to 97.76%. The 3.52% improvement in compliance was statistically significant ($P < 0.05$). In 2015, 189 cases were studied and the overall compliance rate maintained satisfactorily high (97.12%). At the same time, no more incident of PCA-related morphine overdose happened again. Conclusion: Enhancement of PCA Safety with EASE Program is effective in improving nurses' compliance in PCA monitoring and eventually ensures the safety of patients who use PCA.