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Impact of IPMOE on Nursing Tasks in Medical Ward – a Time Motion Study

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Introduction

The In-patient Medication Order Entry System (IPMOE) has been implemented in Princess Margaret Hospital. Starting with the Department of Medicine, the system rolled out to the whole hospital, and later, to all acute hospitals under the Hospital Authority. To cope with the implementation, identifying its impact on nursing tasks is important for subsequent enhancement. Information on the number of episodes and time of nursing activities in a medical ward would provide a yard stick for system enhancement and subsequent implementation, especially for the consideration on busy nursing workflows in medical and geriatric wards in Hong Kong. The results would also serve as a baseline for subsequent effectiveness appraisal.

Objectives

To quantify the nursing time across the medication associated tasks in paper based MAR and IPMOE, which includes the change in the time and pattern before and after the implementation of IPMOE.

Methodology

It was a prospective observation study in the medical and geriatric wards before (Jan 2014-Jun 2014) and after (Mar 2015 – Jun 2015) the implementation of IPMOE. We adopted the convenient sampling approach, which included eight hours observations study of individual nurse in medical and geriatric wards by trained research assistants, using tablet computers with customized application to time various pre-categorized nursing tasks especially for medication related task (10 categories) and medication administration (4 categories). Parametric and non-parametric statistical tests were

applied throughout the analysis whenever appropriate, including Chi-square Test, Independent sample T-test, Mann-Whitney test, Wilcoxon Signed Rank test and Kruskal Wallis test. In addition, interrupted time series analysis was proceeded to identify the change in the intercept and trend over the time after the implementation.

Result

A total of 41 nurses (328 hours of observation) with 6,071 tasks were observed and timed before the IPMOE implementation and 42 nurses (336 hours of observation) with 4,897 tasks were included after the IPMOE enactment. The average number of medication related tasks was significantly reduced from 61.07 to 29.81, with a reduction of 31.26 episodes per duty (P