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**Impact of IPMOE on nursing tasks in the medical ward – A time-motion study**
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<u>Introduction</u>
The In-patient Medication Order Entry System (IPMOE) was first implemented in the medical ward of Princess Margaret Hospital, Hong Kong. It was a local developed close-loop system including prescription, dispensing and administration modules. Evaluation on its impact on nursing tasks would be important for practice improvement and subsequent system enhancement.

<u>Objectives</u>
The study was conducted to quantify the nursing times across medication-associated tasks for paper-based MAR and computer-based IPMOE, including change in the tasks and time patterns before and after IPMOE implementation.

<u>Methodology</u>
This was a prospective observation study in medical wards before (Jan 2014–Jun 2014) and after (Mar 2015–Jun 2015) the implementation of IPMOE. We conducted 8-h observation studies of individual nurses with a customized application to time various pre-categorized nursing tasks. Statistical inferences and interrupted time series analysis was performed to identify the change in the intercept and trends over time after implementation.

<u>Result</u>
The average number of medication-related tasks was significantly reduced from 61.07 to 29.81, a reduction of 31.26 episodes per duty (P < .001, 95% CI 22.9–39.63). The time for the medication-related tasks was reduced from 32 min (SD = 21.57) to 26.57 min (SD = 11.35) and the medication administration time increased from 37.93 min (SD = 14.78) to 44.37 min (SD = 19.45), but there was no overall significant difference in the time spent on each duty (P = .315) between the two groups. An improving trend in the delayed effect was observed (P = .03), which indicated a run-in period for new application was needed in clinical setting. Our study had shown the time motion observation could be applied to measure the impact of the IPMOE in a

busy clinical setting. Through classification of activities, validation, objective measurement and longitudinal evaluation, the method could be applied in various systems as well as different clinical settings in measure efficiency.