

The effect of a clinical pharmacist-led training programme on intravenous preparation and administration errors in a Vietnamese hospital

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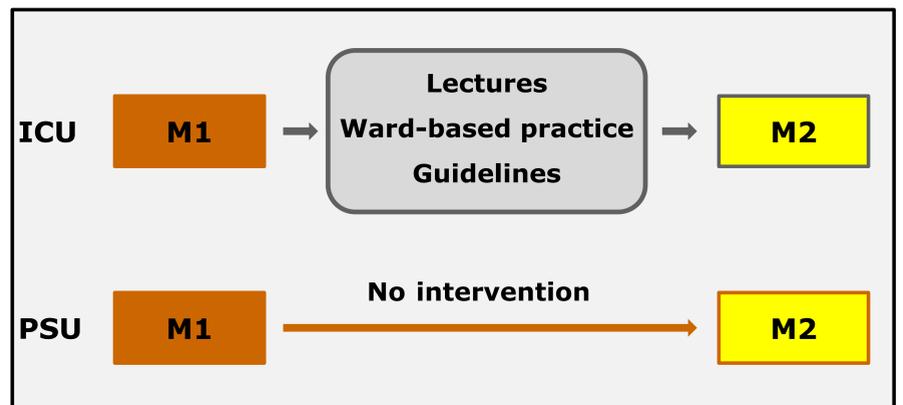
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OBJECTIVES

There is relatively little research about interventions to reduce medication preparation and administration errors in hospitals, especially in resource restricted settings such as Vietnam. Our large study on medication errors in Vietnamese hospitals indicated that the highest risk was associated with intravenous medications(*). The objective of the study is to investigate the effect of intensive training on the frequency of intravenous medication preparation and administration errors in an urban public hospital in Vietnam.

STUDY DESIGN



ICU: Intensive Care Unit - intervention ward

PSU: Post-Surgical Unit - control ward

M1, M2: pre- and post-intervention medication error measurements

Medication errors were detected using direct observation method, 12 hours on 7 days, each period.

RESULTS

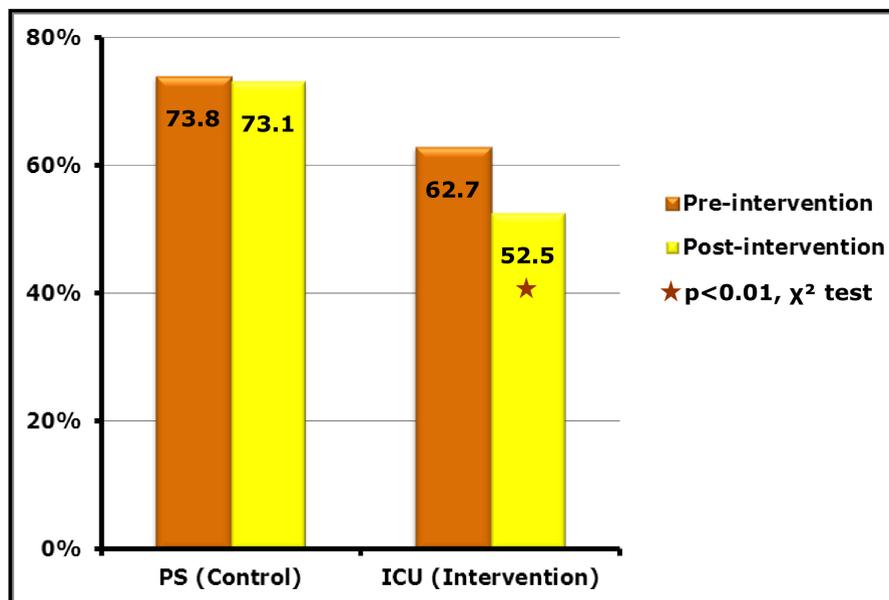


Figure 1. Error frequencies in control and intervention wards before and after training

	Error type	Pre %	Post %
Preparation	Wrong drug	0.4	0.0
	Wrong dose *	12.5	2.8
	Deteriorated drug *	7.1	0.6
	Wrong preparation-technique *	26.3	12.5
Administration	Omission	2.0	0.2
	Unordered drug	2.0	2.4
	Wrong rate	39.2	39.5
	Wrong route	0.8	0.6
	Wrong administration-technique	5.1	6.0
	Wrong administration-dose	1.2	0.0

*: p<0.05, χ^2 test

Table 1. Frequencies of error types in the intervention ward before (pre) and after (post) training

DISCUSSION - CONCLUSIONS

The intensive training programme consisting of lectures, practical ward-based teaching sessions, and providing guidelines carried out by a clinical pharmacist and a nurse was effective in reducing intravenous medication errors, particularly preparation errors. However, overall and specific administration error rates remained relatively high such as wrong rate errors. These were mainly bolus doses which were injected in less than one minute instead of taking 3-5 min. Such errors may be improved by other measures than training, e.g. changes in working procedures (taking more time for drug administration, administration by short infusion for some medications). A very important additional strategy would be creating a safety culture around drug preparation and administration, emphasizing the risks of fast drug administration.

(*): H.T. Nguyen et al. (2013), 18th Congress of the EAHP, *Errors in medicines preparation and administration in Vietnamese hospitals*.