Abstract:

BACKGROUND: Little is known about interventions to reduce intravenous medication administration errors in hospitals, especially in low- and middle-income countries.

OBJECTIVE: To assess the effect of a clinical pharmacist-led training programme on clinically relevant errors during intravenous medication preparation and administration in a Vietnamese hospital.

METHODS: A controlled before and after study with baseline and follow-up measurements was conducted in an intensive care unit (ICU) and a post-surgical unit (PSU). The intervention comprised lectures, practical ward-based teaching sessions and protocols/guidelines, and was conducted by a clinical pharmacist and a nurse. Data on intravenous medication preparation and administration errors were collected by direct observation 12 h/day for seven consecutive days. Generalised estimating equations (GEE) were used to assess the effect of the intervention on the prevalence of clinically relevant erroneous doses, corrected for confounding factors.
RESULTS: 1204 intravenous doses were included, 516 during the baseline period (236 on ICU and 280 on PSU) and 688 during the follow-up period (407 on ICU and 281 on PSU). The prevalence of clinically relevant erroneous doses decreased significantly on the intervention ward (ICU) from 64.0% to 48.9% (p<0.001) but was unchanged on the control ward (PSU) (57.9% vs 64.1%; p=0.132). GEE analysis showed that doses on the intervention ward were 2.60 (1.27-5.31) times less likely to have clinically relevant errors (p=0.013).

CONCLUSIONS: The pharmacist-led training programme was effective, but the error rate remained relatively high. Further quality improvement strategies are needed, including changes to the working environment and promotion of a safety culture.