Background Medication safety has been a concern for decades worldwide, but there is still relatively little research about interventions to reduce medicines administration errors in hospitals, especially in resource-restricted settings such as Vietnam. Our large study on the frequency and type of medication errors in Vietnamese hospitals indicated that the highest risk was associated with intravenous medication administration [1].

Purpose To investigate the effect of intensive training on the frequency of intravenous medicines preparation and administration errors in an urban public hospital in Vietnam.

Materials and Methods This was a controlled intervention study with pre- and post-intervention measurements using a direct observation method, carried out in two critical care units: Intensive Care Unit (ICU – intervention ward), and Post-Surgical Unit (PSU – control ward). The intervention consisted of lectures plus practical ward-based teaching sessions, carried out by a clinical pharmacist and a nurse. In each ward, all intravenous doses prepared and administered by nurses were observed 12 hours per day, on 7 consecutive days, each period.

Results A total of 1294 doses were observed, 718 in ICU and 576 in PSU. Error rate on the intervention ward (ICU) decreased from 62.7% to 52.5% (P = 0.01); preparation errors including wrong dose, wrong infusion rate and medication, ≥ 1osing solution or daptomycin for Gram-positive infections in adult in-patients. 2013;

Results 148 patients ([59% male; mean age 67 years (95% CI: 63–68) and penicillin allergy/intolerance: 10%] received 174 treatments. 76% patients were on medical HU; the infection originated in the community (85%); Diagnosis: bacteraemia (23%), skin and soft tissues infection (21%), pneumonia (20%). Median duration of hospital stay: 16 days (IQR: 9–27); of antibiotic treatment: 7 days (IQR: 8–11).

Most prescribed antibiotic: vancomycin (68%) [linezolid (28%), daptomycin (5%)]; 74% (128) of treatments fulfilled criteria established by the DTC; linezolid and vancomycin didn’t fulfill the criteria in 35/49 (71%) and 9/118 (8%) prescriptions.

251 FIs were made, 96 (38%) during initial prescription validation, representing 1 FI/treatment (IQR: 1–2) and generating 79% acceptance. Type of intervention: safety 44% (93% in vancomycin), effectiveness 24% (94% in vancomycin) and efficiency 52% (83% in linezolid). After the PI, 84% (146) treatments met DTC criteria, the percentage of non-conforming linezolid decreasing to 33/49 (47%). 155 FIs (IQR: 1–3) were performed during follow-up, with 2 FIs/ treatment and an 87% acceptance; these were mainly DI (48%) and TCDM (42%) interventions.

Conclusions Pharmaceutical interventions in patients with Gram-positive infections increase treatment efficiency and pursue improvement of the effectiveness and safety throughout the antibiotic treatment, reflecting the need for continued treatment follow-up to adapt it to the patient’s clinical course.

No conflict of interest.