

## Clinical evaluation of Druglog® apparatus for the control of parenteral preparations in operative room and high dependency unit

T. Hennache, S. Genay, M Garrot, E. Girardet, C. Barthelemy, G. Lebuffe, P. Odou

*Background and objectives:* Medication errors (ME) might affect patient's prognosis in operative room (OR) and high dependency unit (HDU). Despite drug labelling or barcode reader use, checking the prepared drug before administration could secure medicinal care. With UV absorption technology, a new apparatus, Druglog® can identify and quantify drugs in two seconds. The objective was to assess the Druglog®'s robustness to intercept ME.

*Methods:* According to french society of pharmaceutical science and technology recommendations, 28 drugs were calibrated at concentrations commonly used in anaesthesia. During three months, in OR and HDU, a 1mL sample of random prepared drugs was analysed. In case of non-conformity, it was prepared and analysed once again. A multi-professional meeting assesses the criticality of intercepted DE according to the french society of clinical pharmacy table.

*Results:* 22 drugs were calibrated with 5 to 15 calibration points. Lack of UV absorption, crossed identifications and non-granted accuracy profile caused calibration failures, probably because of the high inter-variability between manufacturers' batches. Relative errors vary from 0.5 to 7.9%. With 232 samples (3/4 in OR), 6.9% (n=16) ME were intercepted. Druglog® was not able to analyse mix of drugs (n=7). 81% of ME had a low criticality, mainly in the OR thanks to the anaesthetist acute survey.

*Conclusion:* Druglog® is compatible with clinical use and can intercept ME. However, some calibration rules have to be followed to ensure reliable results in clinical use, and without medico-economic study, we can't predict his impact in unit's organisation. Moreover, neonatology might be more relevant, where multiple dilutions are required.

**Keywords:** Medication error - Pharmaceutical technology - Pharmaceutical preparation – Anaesthesia – Medication system, hospital