If any drug/drug or drug/solvent incompatibilities occur, physical-chemical reactions may occur at the Y-site expressed as clouding, colour variation, emulsion breaking. These reactions can give rise to clinically significant complications such as reduction of bioavailability and therapeutic effect, catheter obstruction, parenchymal deposits. The potential impact, in terms of increase of morbidity/mortality and prolonged hospitalisation, could be important.

**Purpose** To create a working tool to help health professionals make responsible and evidence-based decisions when administering several medicines to critical patients.

**Materials and Methods** A systematic search for stability/compatibility information for injectable drugs was performed (Tissel’s, Stabilis, King’s Guide to Parenteral Admixtures, Micromedex database, Martindale, Summary of Product Characteristics).

A literature review of data concerning compatibility for intravenous administration of 119 drugs and 4 diluents commonly used in anaesthesia and intensive care was undertaken.

**Results** 4788 drug/drug and drug/solvent compatibilities were analysed, showing: 44% compatibility, 12% physical and/or chemical incompatibility, 4.5% limited compatibility (depending on solvent, concentration, contact time, temperature). The data collected conflicted in 1.8% of references.

All data were summarised in a colour-code wall chart, which admits, circumscribes or denies the possibility of simultaneous infusion (green: compatible, red: incompatible, violet: limited data, yellow: conflicting data, white: no information). This working tool was shared with health staff and made available in the ward for a safe and quick search.

**Conclusions** The use of this visual working tool in ICUs and other units may reduce adverse events due to physical-chemical incompatibility of infused medicines, thus improving care quality and patient safety.

No conflict of interest.

---

**GRP-165** **ROOT CAUSE ANALYSIS AS AN OPPORTUNITY TO IMPROVE THE SAFETY OF PAEDIATRIC CARE**

doi:10.1136/ejhpharm-2013-000276.165

**Background** Patient safety is a serious global public health issue. Causal analysis with a systematic and participatory approach is a useful tool for improving safety.

**Purpose** To perform a root cause analysis (RCA) in a medication error in order to identify improvement opportunities, to propose actions aimed to increase patient safety and to promote a collaborative approach in the health team.

**Materials and Methods** Retrospective study by the Patient Safety Team using RCA to investigate the cause of a medication error that happened in the paediatric unit in a tertiary level hospital, Spain. It included the following steps: identification and selection of the error, data collection and description of the event, construction of facts map, analysis of contributing factors and study of barriers that may prevent damage and finally, developing solutions and an action plan.

**Results** An administration error in a paediatric patient was selected. The patient received a single dose of antibiotic instead of a dose every 24 hours. RCA permitted the identification of human and patient factors as well as latent system failures associated with organisational factors and factors related to equipment, procedures, working conditions, education and training. Electronic prescribing and an individualised dispensing system failed as the main barriers.

The action plan proposed by the interdisciplinary team included: modification of the individualised dispensing system for the paediatric unit, improved electronic prescribing software, systematic visitor pass medical-nurse, and review of returns in the individualised dispensing system to detect errors.

**Conclusions** The analysis of a medication error by RCA identified the factors that caused the event and was a learning opportunity for the health team. Its use permitted a patient safety improvement through the identification and correction of latent system failures.

No conflict of interest.