## 5PSQ-101 MEDICATION ERRORS IN UNIT-DOSE DRUG DISTRIBUTION SYSTEM: QUALITY CONTROL

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**Background and importance** The need to improve the quality of the unit-dose dispensing system was detected due to an increase in errors.
**Aim and objectives** Quantitative and qualitative analysis of errors in the dispensing of unit-dose drugs to implement measures to reduce them.
**Material and methods** Prospective study, 2 months duration, in a tertiary hospital. The drug trolleys of two randomised nursing units were chosen from 16 hospitalisation units (589 beds) where unit-dose dispensing was reviewed daily. The review was conducted by a pharmacist and a pharmacy technician, using a protocol for quality control of the unit-dose dispensing system, which is based on the comparison of medication listings per patient with the drug content of the drug trolleys. Finally, the pharmacist makes a quantitative analysis: number and error rate (number of dispensing errors for every 100 changes); and qualitative analysis: type of error. The data obtained are analysed monthly.
**Results** 247 dispensing errors were detected, with a mean of 2823 (±124) revised changes per day. The median error rate was 1.23 (IR 0.48–1.99), the first month being 1.61 (IR 1.13–3.07), and 0.45 (IR 0–0.91) in the second month. The median error rate in the manually filled plants was 1.56 (IR 0.67–2.21) versus 0.92 (IR 0.57–1.24) in trolleys dispensed by automated dispensing cabinets. Filling the drug trolleys with an incorrect number of units was the most repeated error (44.13%, n=109), followed by the omission of introducing a medication (17.81%, n=44) and introducing a medication not prescribed (13.77%, n=34).
**Conclusion and relevance** From the error analysis we can conclude that:

1. A reduction in potential dispensing errors was achieved, as the error rate decreased from 1.94 to 0.59 from the first to the second month.
2. Increasing automated dispensing cabinets could help reduce errors, as plants filled without the help of electronic systems have a higher error rate (1.34 vs 1.16).
3. There is a need to educate the pharmacy technicians about the impact of their work on the safety of hospitalised patient care, insisting on the need to check the number and name of the drugs introduced.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**
**Conflict of interest** No conflict of interest

## 5PSQ-105 INSULIN PERFUSION IN NEONATOLOGY: WHICH ONE IS THE SAFEST?

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**Background and importance** Glycaemic alterations are highly prevalent in premature newborns during the first days of life. Particularly, hyperglycaemia has been reported as an independent risk factor for increased mortality and morbidity. This condition requires the use of insulin infusions for its treatment. However, this drug presents problems of adsorption to plastic that is intensified with low insulin concentrations and infusion rhythms used in neonates, conditioning the decrease and also the ignorance of the doses actually administrated to the newborn. There is no consensus on the appropriate insulin preparation and administration.
**Aim and objectives** To determine the combination of variables for the preparation and administration of insulin infusions that provides higher accuracy and lower probability of error.
**Material and methods** An experimental study was carried out with the aim of determining which variable (additive (albumin yes/no), solution (sodium chloride solution, NaCl 0.9%/glucose 5%), operator (1/2), preconditioning (yes/no), purge (yes/no), concentration (0.05–0.1 UI/mL), infusion rate (0.3–0.7 mL/h) and infusion duration (1 hour/24 hours)) most influences the concentration and dose of insulin administrated. The determinations were made with immunoassay using IMMULITE 1000 equipment. Previously, an ad hoc calibration was developed, adjusted to the range of doses commonly used in neonatal insulin infusions. Finally, a screening model using Plackett-Burman designs was developed to calculate insulin recovery and determine the variables with the most influence.
**Results** 24 experimental infusions were made, using combinations of different variables. After analysing the total of the samples, each of the recovery values obtained were entered in the screening model. The variables that achieved higher insulin recovery values were the additive (albumin - yes) and the solution (NaCl 0.9%). The model can explain 48.16% of the variation in insulin recovery, in which the additive has a standardised effect four times greater and the solution two times greater than the rest of the variables that do not exceed 1. (Figure 1: Pareto diagram)
**Conclusion and relevance** The additive and the solution seem to be the most important determining factors for the recovery of insulin in the preparation of the infusions. The addition of albumin and preparing the infusions with sodium chloride solution 0.9% as solution results in a greater recovery of insulin.

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## 5PSQ-111 PHARMACEUTICAL INTERVENTION: AVOIDING INTERACTIONS BETWEEN ANTIRETROVIRALS AND VITAMIN SUPPLEMENTS/ANTACIDS

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**Background and importance** Integrase inhibitors (raltegravir, dolutegravir, elvitegravir, bictegravir and cabotegravir) should be administered 2 hours before or 6 hours after taking medications containing polyvalent cations, such as antacids or multivitamins. Simultaneous coadministration of integrase inhibitors and polyvalent cations contained in antacids or vitamin supplements results in their reduced absorption due to a chelation process.