

# AUTOMATION OF PARENTERAL NUTRITION ELABORATION IN A HOSPITAL PHARMACY SERVICE



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## 1. Objective:

To evaluate the impact of implementing an **automated system** (Exacta-Mix 2400<sup>®</sup> Baxa) on the quality of the elaboration of PN (parenteral nutrition)



## 2. Methods:

- Gravimetric control is a strategy used for the quality control in the elaboration of PN.
- Regulatory agencies used to consider as an acceptable margin of error of 5%, but it is being advisable to reduce it to 3%, especially in paediatric nutrition.
- A comparative gravimetric control was carried out:

PN developed the first week of December 2015  
(manual procedure)

VS

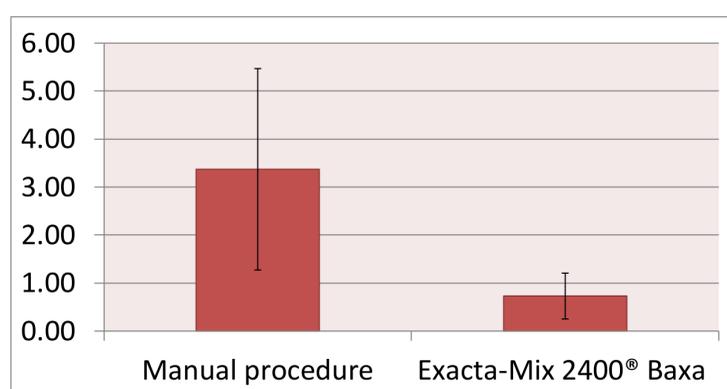
NP developed the same week one year later  
(with the automated system)

- We analysed the deviations from the theoretical weight and the percentage of preparations that exceeded 3%.
- A K-W test was performed using the software R Statistics for the comparison of the means of deviation.

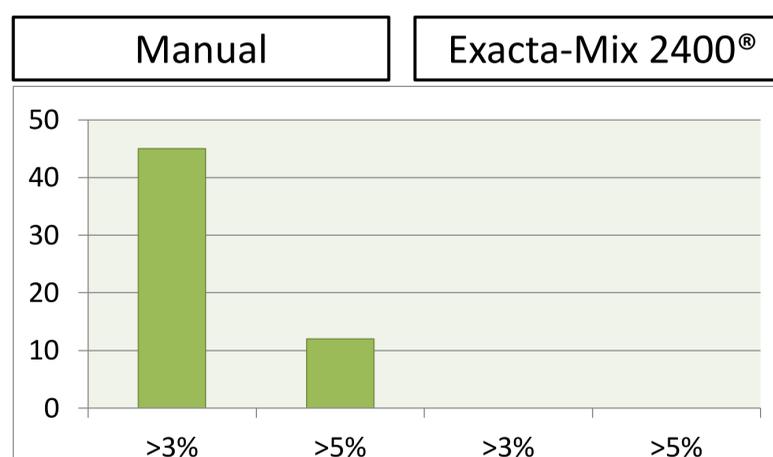
## 3. Results:

**A total of 144 PNs were analysed: 77 manuals and 77 automated**

**% Variability in weight**



**Number of PN that deviate from the maximum tolerated limit (3% or 5%)**



- ✓ **Manual preparation** of parenteral nutrition is associated with a **greater gravimetric error** due to human preparation, this is especially important in very low weight nutrition, such as neonatal nutrition.

## 4. Conclusion:

- Automation** means an **increase in accuracy** control and a decrease in the risk of exceeding acceptable limits.
- Despite the difficulties of implementing a new technological process, **robotisation tends to become an essential in Hospital Pharmacy Services** and allows an improvement in the **integral quality of care**.