

DETECTION OF LOOK-ALIKE INTRAVENOUS DRUGS - FORMULARY CONSIDERATION.

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BACKGROUND

- Look-alike packaging (LAP) designates similarity in labelling and packaging between two drugs.
- LAPs increase the risk of confusion while drug dispensing by technicians and pharmacists and drug administration by nurses, consequently leading to medication errors.
- Identifying couples of drugs at risk is important in terms of hospital drug formulary considerations.
- No method exists to prospectively identify pairs of drugs and characteristics increasing confusion.

MATERIALS AND METHODS

- ⌘ We selected **64 vials & 105 ampoules** with a significant turnover in our pharmacy, allowing evaluation of risk for **2016 pairs of vials & 5460 pairs of ampoules** (figure 1).
- ⌘ All pairs were systematically observed by **six HCPs independently** :
 - ✓ 2 nurses
 - ✓ 2 technicians
 - ✓ 2 pharmacists
- ⌘ Our focus was the **primary packaging** (which is in direct contact with the drug), as drugs are stocked and dispensed as such in our pharmacy and units.
- ⌘ For each pair, HCPs were asked **whether they perceived the pair as at risk of confusion or not**. We thereafter classified the pairs as:
 - at **"risk of confusion"** (**PairRC**) -pairs identified as at risk by at least 4 HCPs
 - at **"high risk of confusion"** (**PairHRC**) -pairs identified as at risk by all HCPs
- ⌘ **Inter-rater reliability** was calculated (Cohen kappa test).

CONTEXT

A 972 bed academic hospital (Cliniques Universitaires Saint-Luc, Brussels, Belgium).

PRIMARY OBJECTIVE

- ⇒ To propose and validate a method prospectively identifying LAPs couples in our hospital formulary.
(We specifically focused on intravenous (IV) drugs.)

SECONDARY OBJECTIVES

- ⇒ To evaluate the burden of LAP's amongst IV drugs (vials and ampoules) of our formulary.
- ⇒ To determine possible differences in results between different healthcare professionals (HCPs).
- ⇒ To identify risk factors of confusion inherent to drugs.

Figure 1: Process of identifying risk of confusion.



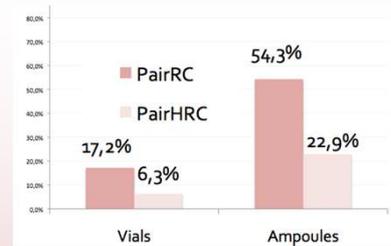
RESULTS

- **Vials** : 2 PairHRC and 4 PairRC → 17,2% of vials implicated. (figure 2 & 3)
Ampoules: 15 PairHRC and 46 PairRC → 54% of ampoules implicated. (figure 2 & 3)
- No marked difference in number of pairs at risk amongst different professions, even though different pairs identified by the 2 nurses.
- Risk factors increasing the risk of confusion : **engravement and same manufacturer**.
- Inter-rater reliability varied from modest to good according to profession:
 - Technicians (vials: kappa=0,65 ; ampoules: kappa=0,50)
 - Pharmacists (vials: kappa=0,46 ; ampoules: kappa=0,44)
 - Nurses (vials: kappa=0,22 ; ampoules: kappa=0,29)

Figure 3: Pairs identified as at high risk of confusion (PairHRC).



Figure 2: percentage of vials/ampoules implicated in at least one PairRC/PairHRC



LESSONS LEARNT

- ★ Method easy to use and feasible (not time consuming).
- ★ The only method available to prospectively identify pairs of drugs at risk of confusion. (Although the inter-rater reliability is suboptimal)
- ★ Different categories of professions targeted in order to ensure risk factors at different levels of the drug dispensing-administration process.
- ★ Numerous drugs involved in pairs at risk of confusion.

CONCLUSION - TAKE HOME MESSAGE

- ✓ Methods to identify risk of confusion prospectively should be implemented to propose preventive measures in order to reduce medication errors.
- ✓ Strategies for improvement may include over labelling and stockage in different places, educational strategies...