RISK OF ERRORS RELATED TO DEFICIENCIES IN UNIT DOES IDENTIFICATION

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INTRODUCTION & OBJECTIVE

An erroneous dispensing of a drug can lead to an administration error if subsequent checks do not permit to detect it before it reaches the patient. The main causes of non-detection are human failures and deficiencies in the identification of unit doses of drugs, leading to difficult or impossible controls.

Objective: To measure the feasibility of controls, taking into account the frequency of use of each drug, and to estimate the increased safety that would be provided by the comprehensive identification of unit doses.

METHODS

1. Information readable on each unit dose prepared in trays was transcribed in detail.
2. A fault tree analysis (FTA) was built to estimate the drug administration error rate.
3. Data were extrapolated to calculate the expected number of serious adverse events and costs. The gain that could be provided by the complete identification of each dose was estimated.

RESULTS

![Fault tree analysis diagram]

- **Global analysis of information available on unit doses (5 items)**
- **Legibility of information on unit doses**

<table>
<thead>
<tr>
<th></th>
<th>Brand</th>
<th>INN</th>
<th>Dosage</th>
<th>Unity</th>
<th>Expiry date</th>
<th>Batch number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations [%]</td>
<td>68%</td>
<td>56%</td>
<td>71%</td>
<td>65%</td>
<td>62%</td>
<td>62%</td>
</tr>
</tbody>
</table>

- **5108 observations**
- **60 wards**
- **366 drugs**
- **57 manufacturers**

1. Facchinetti NJ, Med Care 1999;37:39

- **Administration errors [%]**
  - Actual situation: 0.15 - 0.35
  - Full identification: 0.05

- **Administration errors / year [n]**
  - Actual situation: 30'000 - 70'000
  - Full identification: 10'000

- **Adverse drug events / year [n]**
  - Actual situation: 300 - 700
  - Full identification: 100

- **Cost / year [Euros]**
  - Actual situation: 1'125'000 - 2'625'000
  - Full identification: 375'000

Extrapolation to the hospital (2'000 beds)

Avoidable cost 750'000 - 2'250'000 Euros / year

CONCLUSION

It is urgent that the industry improves the identification of drugs by printing the brand name, the INN and the dosage on each unit dose, and in the long term also the expiry date, batch number and a GS1 datamatrix.

In hospitals, the drug and therapeutic committees must favour products that meet these requirements.

References:

1. Facchinetti NJ, Med Care 1999;37:39

Download at http://www.hcuge.ch/Pharmacie/rd/posters.htm

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