

HOW IMPROVING THE QUALITY OF MEDICATION MANAGEMENT HELPS TO REDUCE MEDICATION ERRORS

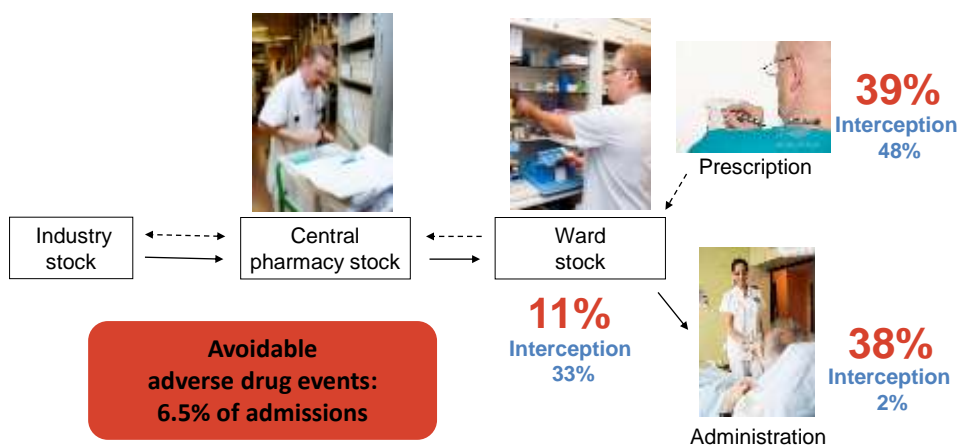


Pr Pascal BONNABRY
Head of pharmacy

EAHP
Vienna, March 17, 2016



An obsolete organisation ?



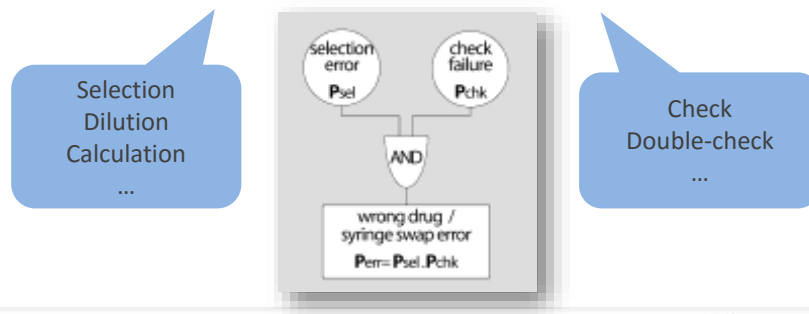
Bates DW, JAMA 1995;274:29



How errors occur ?

The addition of **2** errors

Commission error **AND** Control failure



Quiz

► Order of magnitude of **dispensing** errors by healthcare professionals ?

- A. 0.01%
- B. 0.1%
- C. 1%
- D. 10%



Quiz - answer

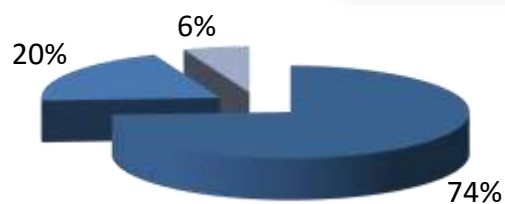
► Order of magnitude of **dispensing** errors by healthcare professionals ?

- A. 0.01%
- B. 0.1%
- C. 1%**
- D. 10%



Dispensing errors (experimental)

► Error rate = 3 %



- Selection error
- Repartition error
- Counting error

Quiz

► Performance of **controls** to catch errors ?
Example: double-check of dispensed drugs ?

- A. 70%
- B. 85%
- C. 95%
- D. 99%



Quiz - answer

► Performance of **controls** to catch errors ?
Example: double-check of dispensed drugs ?

- A. 70%
- B. **85%**
- C. 95%
- D. 99%



Limited performance of controls

- ▶ Introduction of errors during unit dose dispensing
- ▶ Detection ability during human-performed control:
 - ▶ Pharmacists: **87.7%**
 - ▶ Nurses: **82.1%**

Facchinetti NJ, Med Care 1999;37:39-43

Efficacy \approx 85%

(known value in the industry)

Do not be too confident with the double-checks !



Human reliability

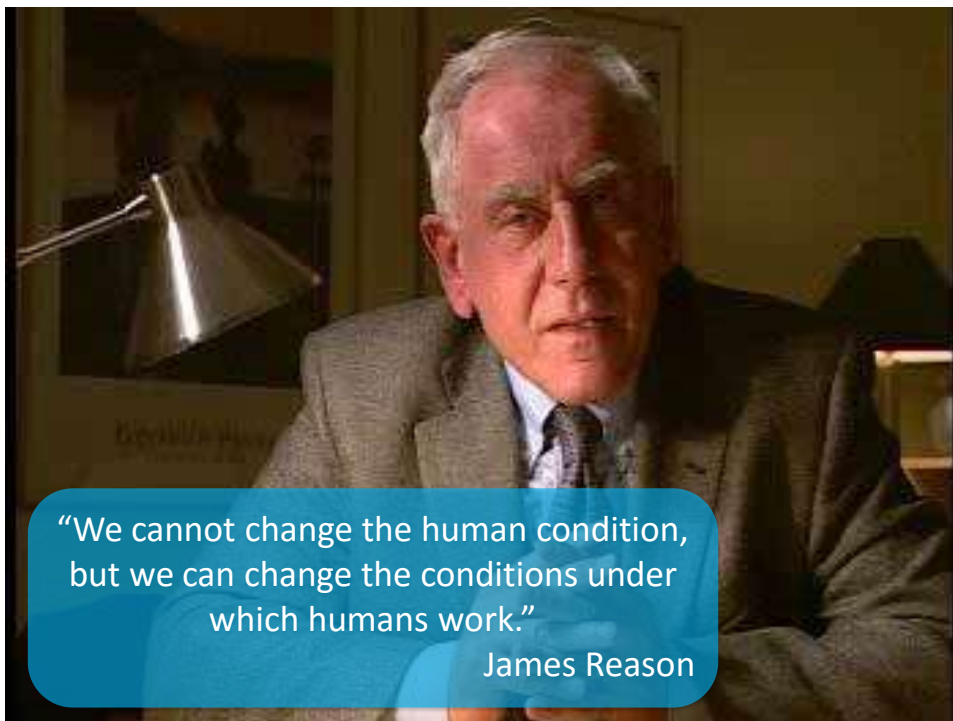
« On the 6th day, God created man ... »

... but God was tired, and his creation was not perfect ...



In hospitals, many high-risk activities are based on human reliability, which is limited





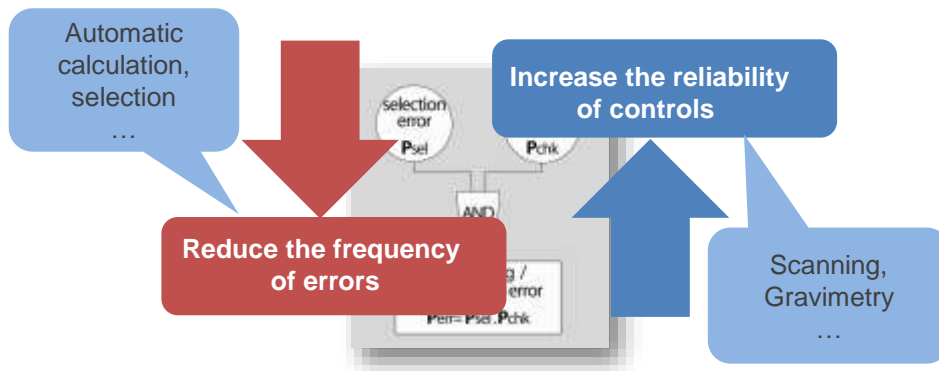
Human factors principles to progress

1. Avoid reliance on memory
2. Simplify
3. Standardize
4. Use constraints and forcing functions
5. Use protocols & checklists wisely
6. Improve information access
7. Reduce handoffs
8. Increase feedback

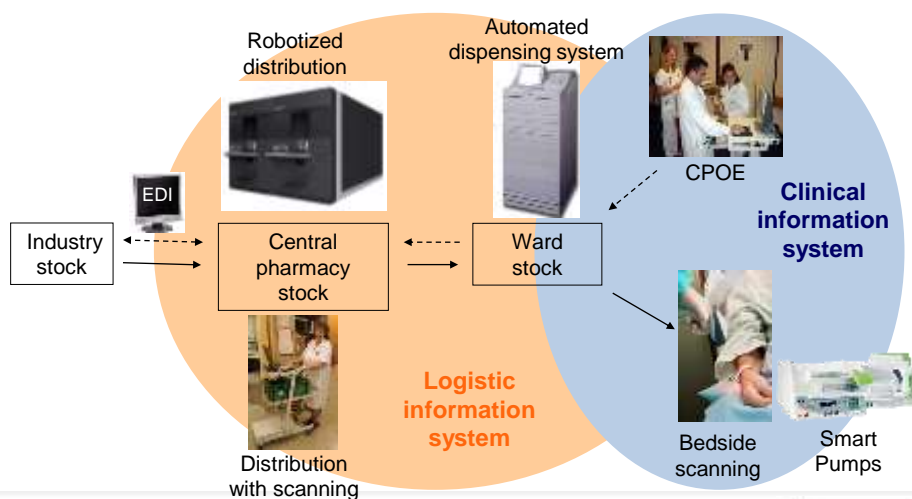
There is a role for IT and automation !

How to improve the safety ?

► Implement strategies to

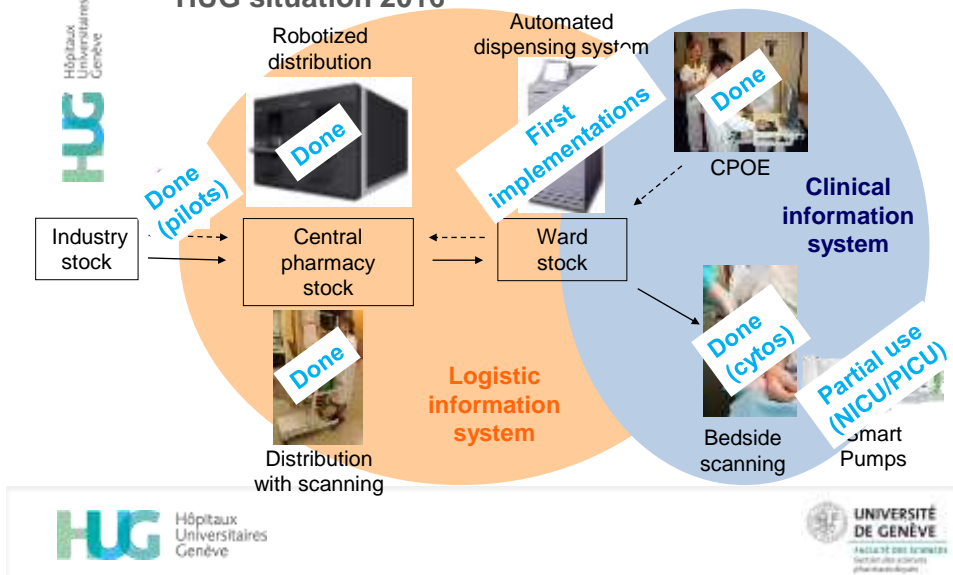


Define your roadmap !

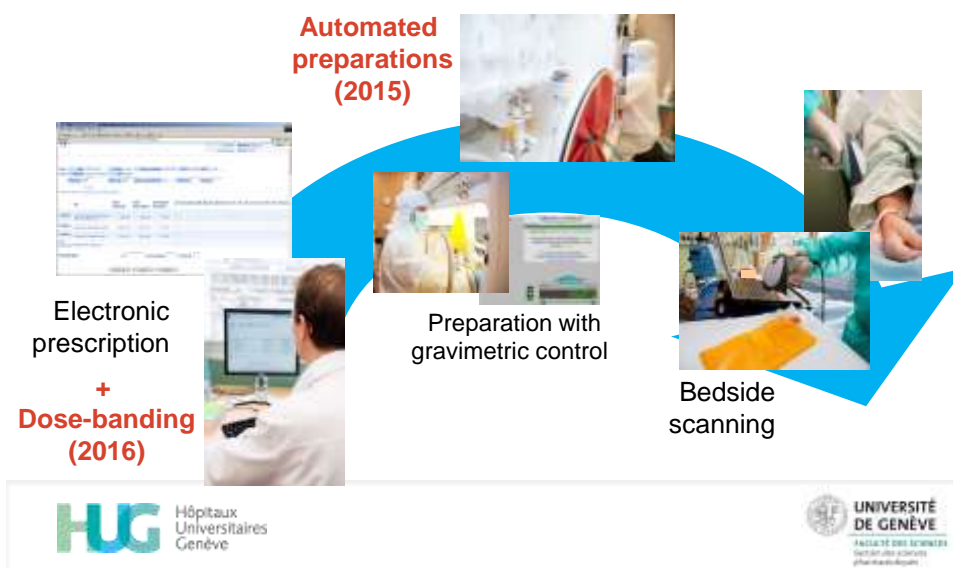


Define your roadmap !

HUG situation 2016

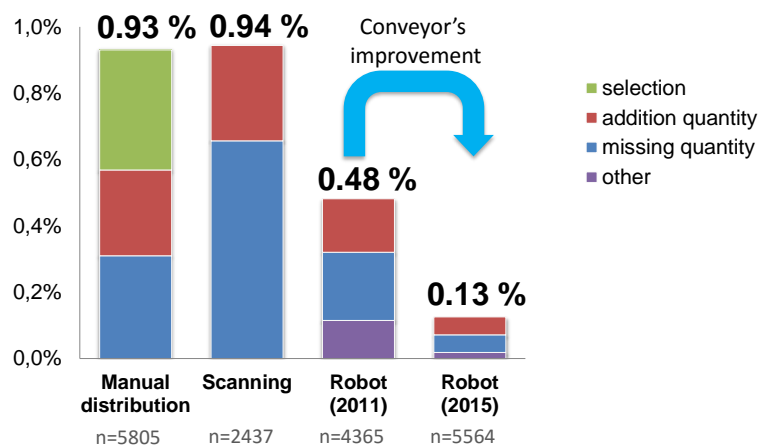


Cytotoxics: a special process

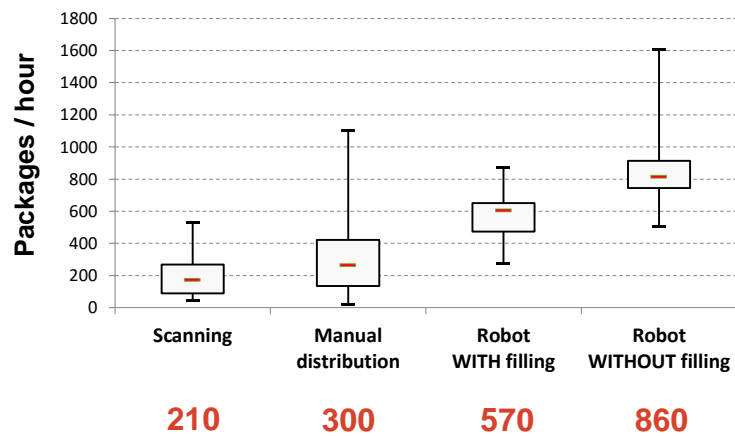




Robotized distribution Impact on the safety



Robotized distribution Impact on the efficiency



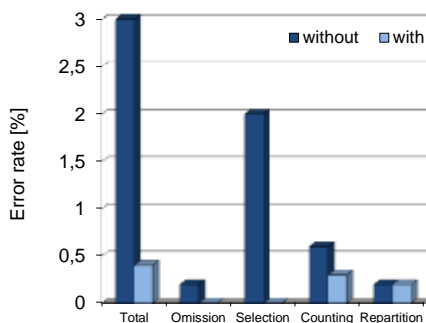
HUG Hôpitaux
Universitaires
Genève

François O et al, HUG, 2015

**UNIVERSITÉ
DE GENÈVE**
FACULTÉ DE MÉDECINE
DÉPARTEMENT DE PHARMACOLOGIE

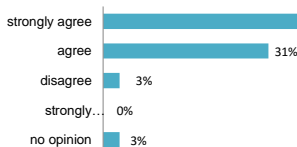


Automated dispensing system Impact on the safety (simulation)

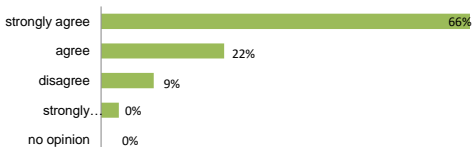


Automated dispensing system Nurses opinion on improvements

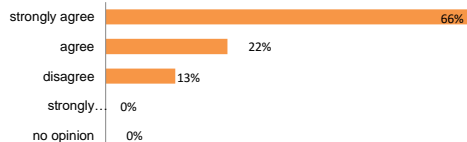
...improves the safety of care?



...improves the stock management ?



...improves medication traceability?



Lessons learned

- ▶ **Automation and robotisation are important strategies to optimize drug management**
 - ▶ Safety can be improved, as well as efficiency and traceability
 - ▶ The implementation must be intelligently and interdisciplinary decided and planned
 - ▶ These projects are very challenging and must be led by a competent and available team
 - ▶ A strategic vision should be elaborated by any hospital

The world is changing...
We have to take the best to improve the
quality of care in hospitals



Pascal.Bonnabry@hcuge.ch

The presentation can be downloaded
<http://pharmacie.hug-ge.ch/ens/conferences.html>