



Centre Hospitalier Intercommunal
Robert Ballanger

Electronic dispensing Cabinets in a general french hospital : 15 years experience feedback

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France



Conflict of interest



- **Nothing to disclose**





Project History and implementation of Nominative Dispensation

- **Nominative Dispensation objectives :**
 - Securing the preparation of drugs
 - Ensuring that the right drug arrives with the right dosage, in the right pharmaceutical form, at the right time and with the right information to the right patient
 - Optimizing storage costs and drugs losses
 - Refocusing tasks (nurses, pharmacy technicians)

Hospital Presentation :

● Kind of patients :

- **Obstetric Surgery Medicine (OSM) : 480 beds**
- **middle stay hospital : 92 beds**
- **Psychiatry : 190 beds**
- **Unit of Consultation and Ambulatory Care (UCAC)
in prison : 1000 prisoners**

● Pharmacy staff:

- **Pharmacists : 8**
- **Pharmaceutical Residents : 5**
- **Pharmacy technicians : 19**

Nominative dispensation : Choices

- **Manual Daily Individual Nominative Dispensing (DIMND)** → not adapted, time delay, high risk of errors
- **Robot's Preparation of Doses to be administered**
→ not adapted to OSM prescriptions, restricted production to pharmacy's opening times

Electronic dispensing cabinets in healthcare units :

- Adapted to OSM prescriptions,
- Treatments available 24 hours a day,
- Total traceability,
- Optimizing stock management

Chronological implementation

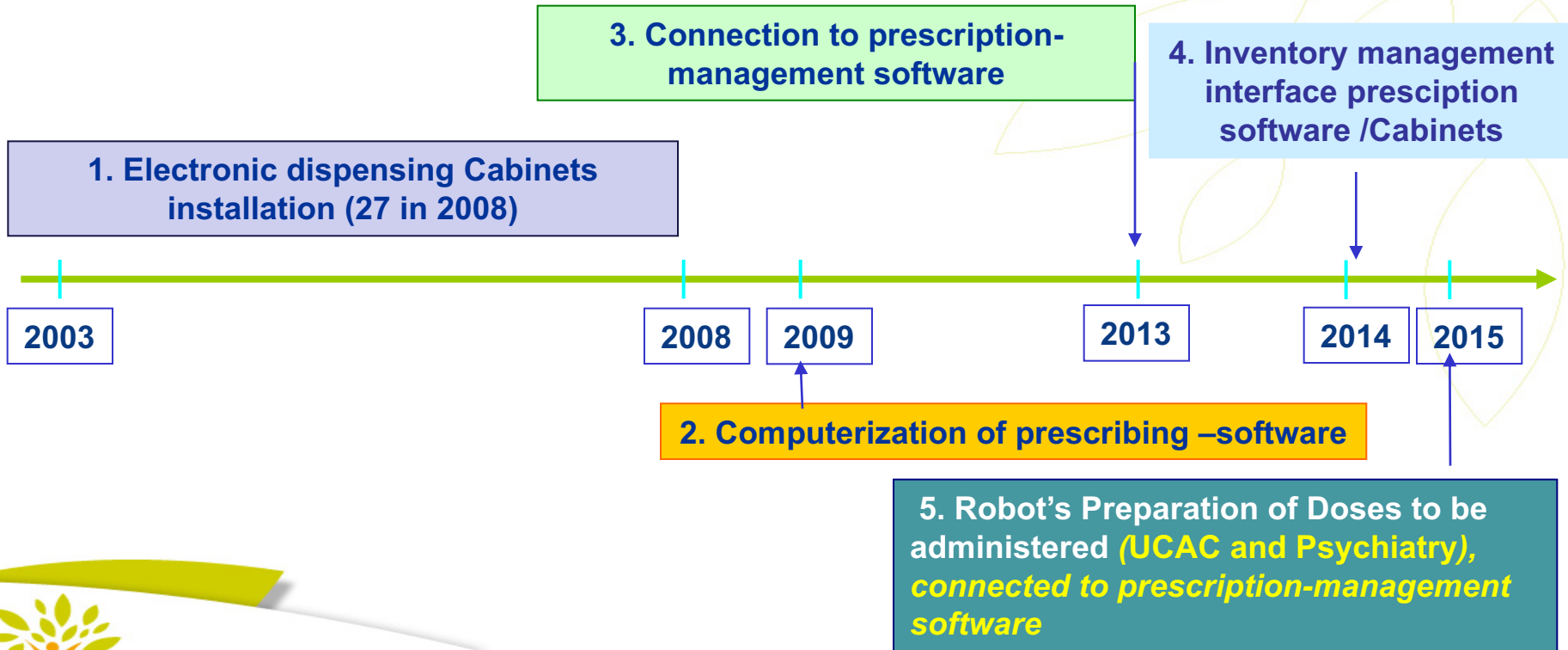
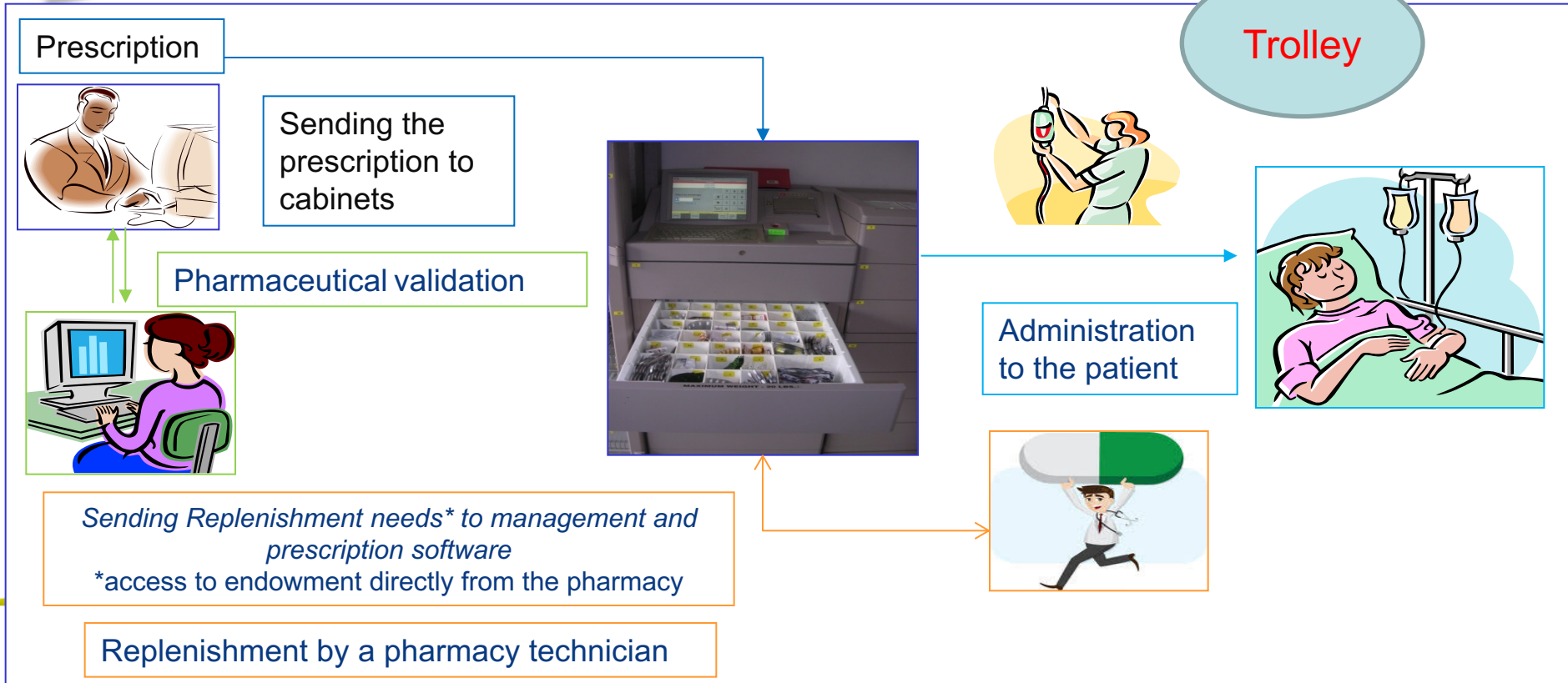


Diagram of the drug circuit in our hospital



Electronic dispensing Cabinets

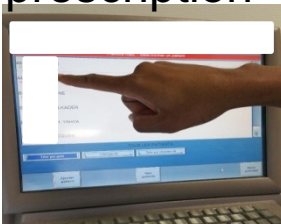


Use of Electroning dispensing Cabinets

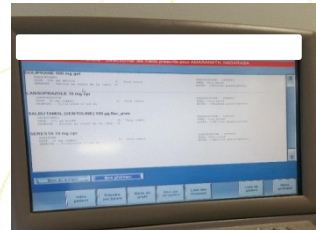
1. Digital identification



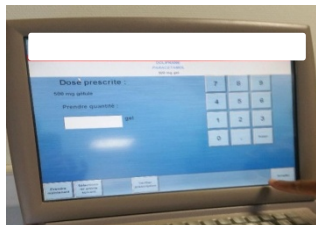
2. Selection of patient's prescription



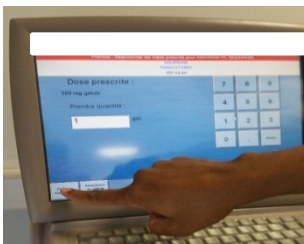
3. List of drugs



4. Drug's selection



5. Quantity of drug



6. Drawer opening





Drug trolley in healthcare units



- Drug trolley connected to computerized prescription
- Administration of drugs
- Traceability of drugs administration in prescription software



Implementation methodology (1/2)

● Prerequisites :

- Reliable hospital data processing systems
- Check the unit in which the electronic dispensing cabinets will be installed: feasibility (place, electrical and computer sockets...)
- Adhesion of medical and paramedical staff
- Implementation's and formation's plannings

Implementation methodology (2/2)

Establishment of the stock levels: very important!

● **Stock levels calculation :**

- Over 1 year of consumption · on all stock removal movements
- Minimum & maximum stocks

● **In the electronic dispensing cabinets :**

- Quantity for 1 week + 3 days of safety stock (depending on cabinet replenishment frequencies)
- 200 to 400 specialities depending on units (knowledge of prescribing ways)
- Validation by medical and paramedical team

Logistic

Number of scheduled replenishments:

Intensive care/emergency units: 3 times / week

O.S.M units: 2 times / week

Psychiatry – middle stay units : 1 time / week

Replenishment Duration :

- 1h30 (half-time in the Pharmacy, half-time in the healthcare unit)
- 2 pharmacy technicians (double check)

Total : 127 hours to replenishments by week = 3.5 pharmacy technicians

14 Cabinets by day

Preparation of patient drawers by nurses with the cabinets:

- Time saving
- Increased security



Advantages (1/2)

- **Securing the drug circuit** (Computerized prescription)
- **Inventory management**
 - Electronic dispensing cabinets connected to a central server at the pharmacy
 - Enabling real-time tracking of stocks in care units
 - Optimization of inventory management (80% reduction of emergency vouchers)
- **Time saving for nurses**
 - Access to drug by 24 hours by a day
- **Traceability**
 - Several degrees Access (by digital recognition)
 - Computerized traceability of dispensations



Advantages (2/2)

Securing: Reduction of errors in the preparation of patient's treatments

- Study carried out in 2004 in the unit of gastro entorology department:
 - **Before** cabinets implementation: 3.0% error
 - **After** cabinets implementation : 0.6% error
- Study carried out in 2011 where the prescription is or not computerized (both healthcare units are equipped with cabinets) :
 - Prescription **not yet computerized**: 0.8% error
 - **Computerized** prescription: 0.2% error

Limits (1/3)

Risks of medication error

- Except for some drugs, when taking a drug, the entire drawer opens
 - Possibility to take an other drug than the one selected,
 - Possibility to take a quantity different than the quantity registred

Loss of traceability and false stocks

Limits (2/3)

Updating of endowments

- Endowments must be regularly updated (at least every 3 years)
- Regular Adjustments (introduction of new references, deletion of references)
- Rehabilitation of the entire endowment: very long



Limits (3/3)



Reliable computer system

- Interfaces must be operational between several softwares:
 - ✓ cabinets / patient identity softwares
 - ✓ cabinets / prescription software interface
 - The product interface works
 - The prescription interface works
 - The stock management interface works
- Traceability: only 1 month of drugs movement history is retained





Conclusion



- Securing the drug circuit
- Optimizing inventory management
- Stocks knowledge in real time at the pharmacy
- Modernization
- Good knowledge of care units needs and practices
- No ideal solution... A "mix" of several solutions may be needed :
 - Manual Daily Individual Nominative Dispensing (DIMND)
 - Robot's Preparation of Doses to be administered
 - Electronic dispensing cabinets



Thanks for your attention

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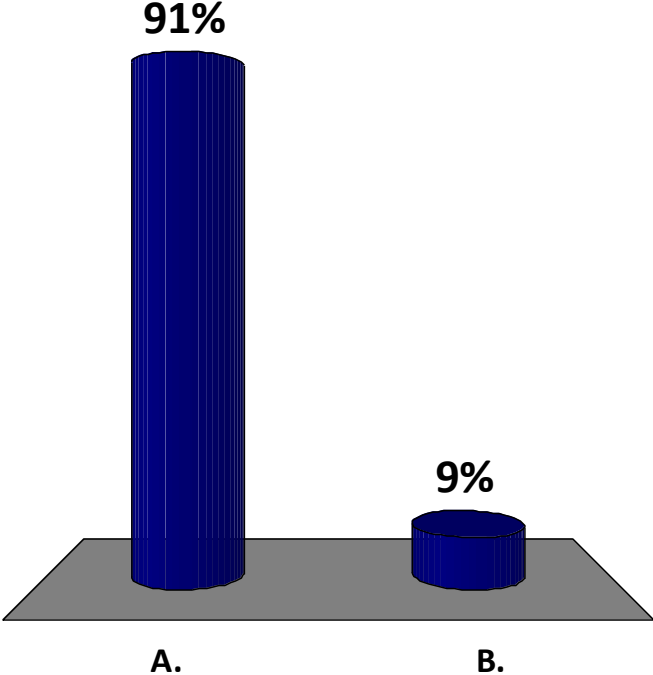


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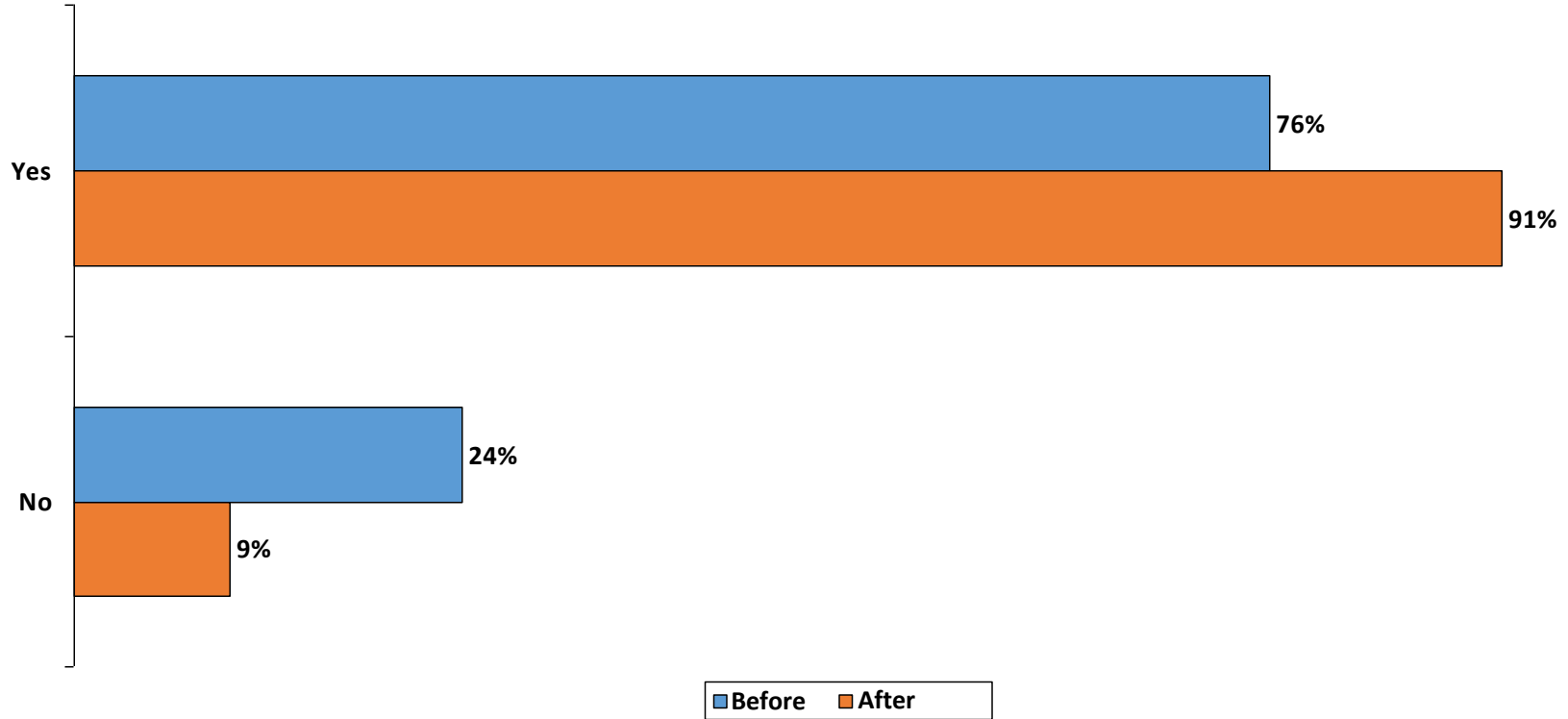
EAPH-Gothenburg- 22 March 2018

Did the implementation of electronic dispensing cabinets reduce the number of emergency medication requests by services?

- ✓ A. Yes
- B. No

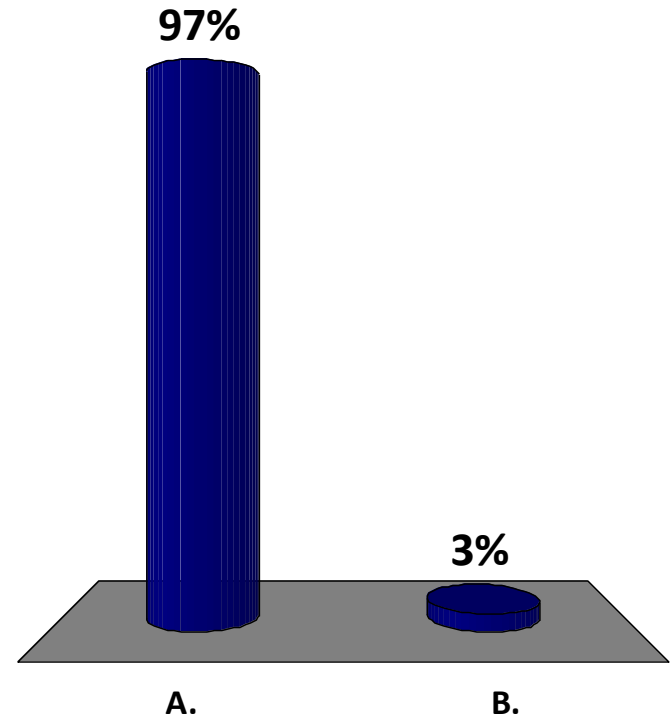


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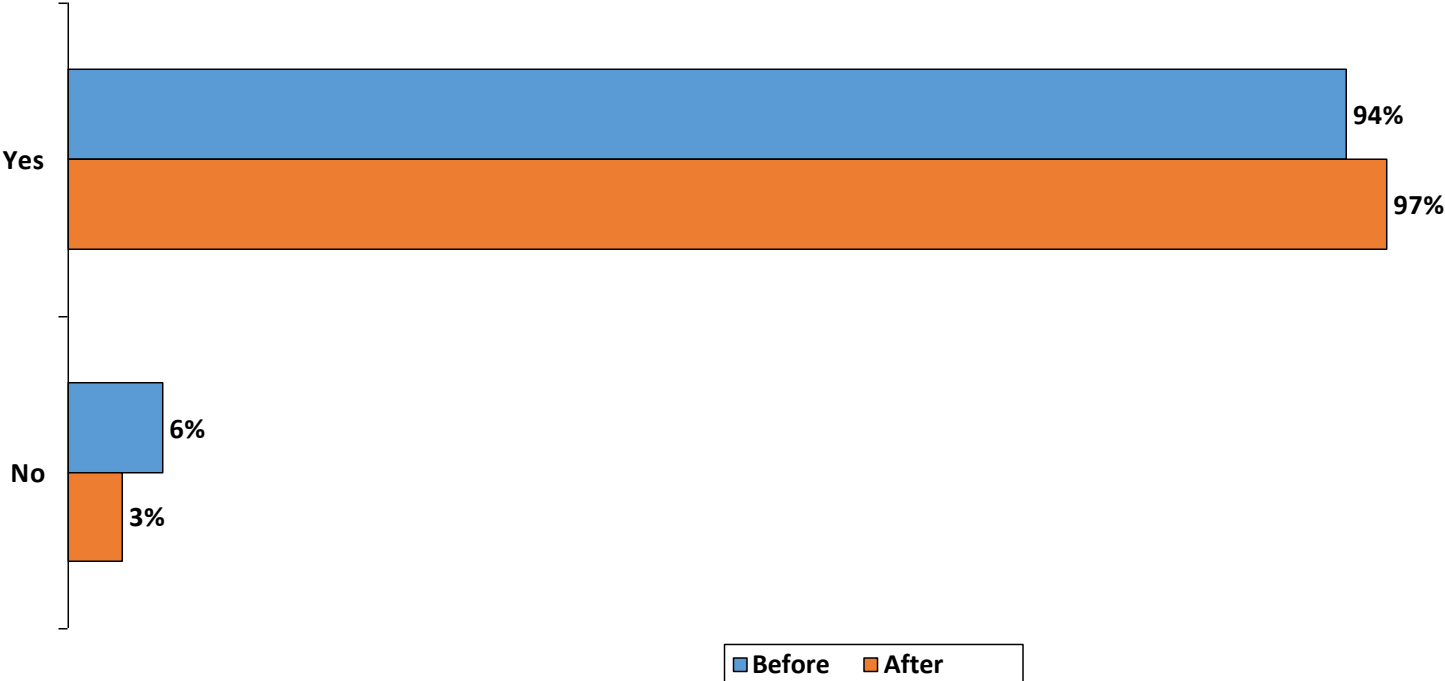


Does the installation of electronic dispensing cabinets linked to the computerized prescription reduce the number of errors in treatment preparation?

- ✓ A. Yes
- B. No



Does the installation of electronic dispensing cabinets linked to the computerized prescription reduce the number of errors in treatment preparation?



The electronic dispensing cabinets permit to

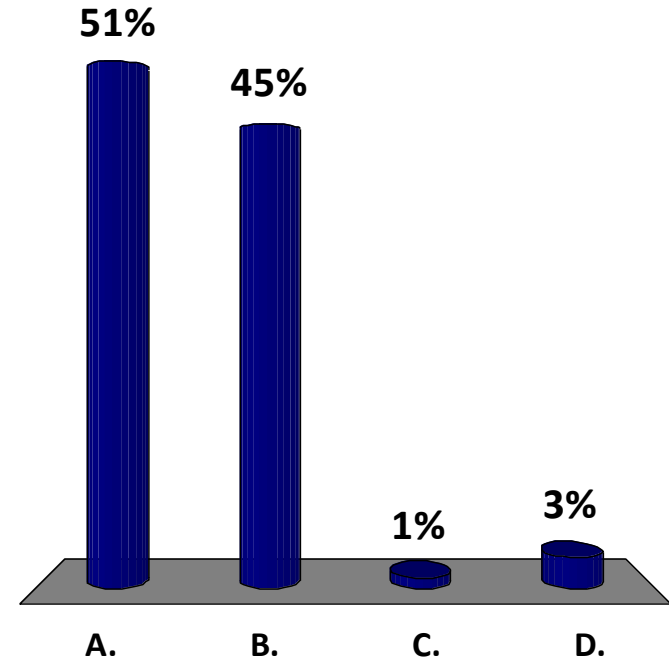
1. trace the preparation of medicines
2. trace the administration of medicines
3. know the stock of medicines in the health care units
4. manage expired medicines in the health care units

A. all correct

✓ B. 1-3-4

C. all false

D. 1 and 3



The electronic dispensing cabinets permit to

