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Reorganization of medication circuit in the operating and delivery room

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Background

- **Pharmacy practice is highly regulated** and the medication circuit is complex in healthcare settings. Required organizational practices of the national accreditation authority also provide a normative framework.
- **Few data have been published about the organisation and optimisation of medication circuit in operating and delivery room.**
- **Operating and delivery room = complex environment**
  - critical care
  - multidisciplinary collaboration
  - use of high-alert drugs
  - limited pharmacy involvement

Professional practices improvement initiative

Objective

- **Describe** the reorganization of the medication circuit in the operating and delivery room (OR, DR)

Material & method

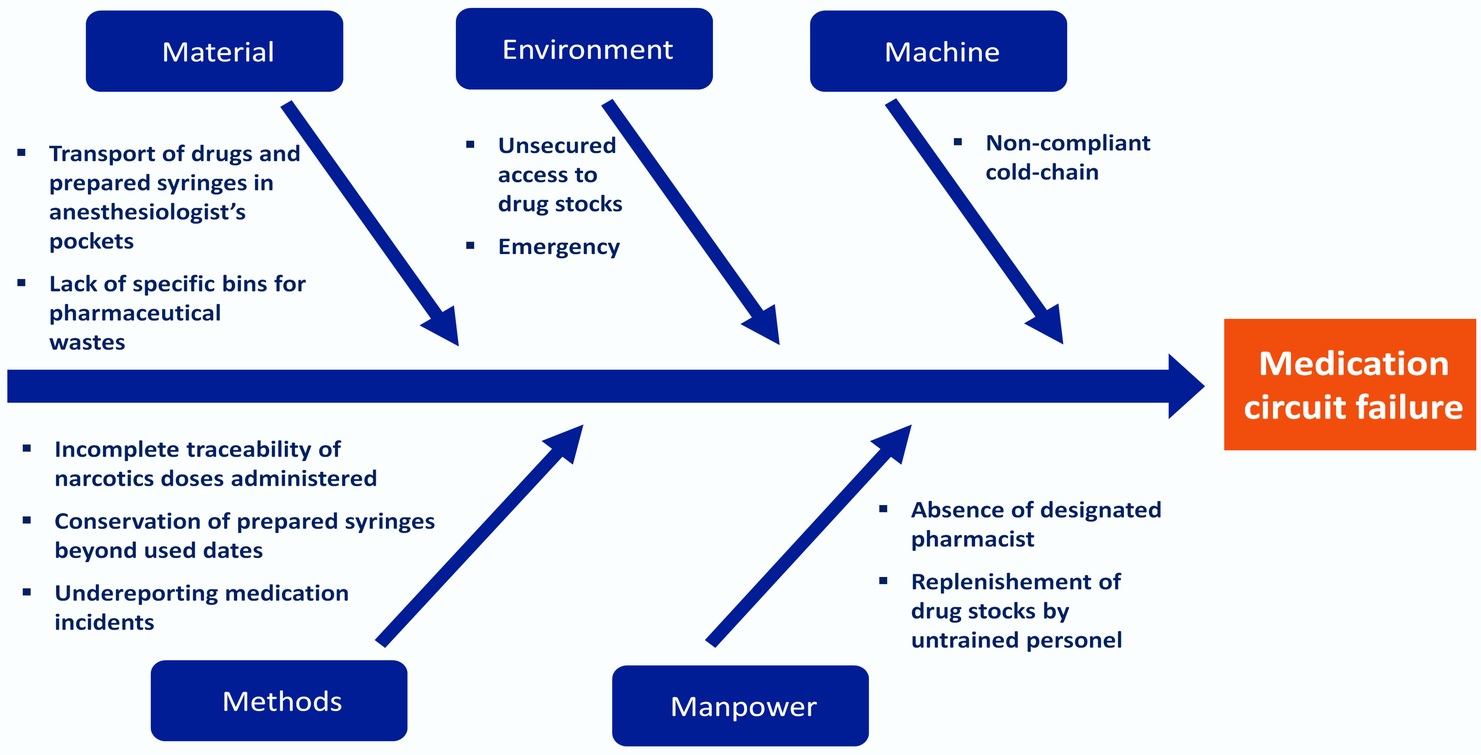
A prospective descriptive study was conducted in operating and delivering rooms in a 500-bed hospital

- A multidisciplinary group including pharmacists, anesthesiologists, nurses and respiratory therapists was created
- Priority risks and corrective measures were identified, discussed and adopted by consensus

Review of literature on medication circuit in OR and DR → Identification of associated failure modes → Semi-structured direct observation in OR and DR → Identification key issues and corrective measures

Results

Fig 1. **Ishikawa diagram about failure modes associated to the medication circuit**



- **10** failure modes associated to the medication circuit in OR and DR
- **18** keys issues
- **30** corrective measures proposed

Table 1. **Main corrective measures**

Steps	Failure mode - Key issues	Corrective measures implemented or in progress
Pharmaceutical cares	**Absence of a designated pharmacist to cover OR/DR** 1. All inpatient care areas should have a designated pharmacists and there are no designated pharmacist to cover OR/DR	* **Designation of a pharmacist from the PICU team to cover OR/DR upon request**
Storage	**Non-compliant cold- chain** 2. IV bags are stored in heating cabinets without temperature control 3. Absence of a twice a day manual check of refrigerator temperature	* **Acquisition of new compliant refrigerators** * **Implementation of monitoring systems**
	Unsecured access to drug stocks in OR/DR 4. Drugs are stored in unlocked shelves and rooms	* **Implementation of automated dispensing cabinets** * **RFID access to storage drug areas**
	Unsecured transport of drugs in anesthesiologist's pockets	* **Implementation of safe anesthesia boxes with a standardized drug content**
Documentation	**Incomplete traceability of controlled substances doses administered** 5. Absence of final count of controlled substances doses administered 6. Incomplete patient record sheet with documentation of compounding, administering and dose destruction 7. Absence of witness to controlled substance destruction	* **Implementation of a detailed record sheet** * **Systematic signature of a witness for controlled substances destruction** * **Final check of controlled substances count by central pharmacy staff** * **Anesthesia boxes replenishment by central pharmacy staff** * **Development of a radiofrequency identification software to support anesthesia boxes replenishment**

Conclusion

- Operating and delivery room are often less supported by pharmacy to insure an optimal medication circuit.
- With a view to ensuring a continuous improvement of quality of patient care, audits should be performed to measure the impact of corrective actions implemented.

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