

Inside the Pharmacy Department

What happens in a hospital pharmacy?

A *Pharmacie à Usage Intérieur* (PUI) secures the full medication-use process: selection and formulary management, procurement, storage, preparation (including sterile and hazardous drugs), dispensing (often patient-specific), clinical pharmacy activities on wards, and pharmacovigilance. In France this is framed by law [1], national guidance from ANSM [2] and HAS [3], and professional societies such as SFPC [4].

Operation flow

1) Prescription. Computerized physician order entry with clinical decision support; checks for dose, renal/hepatic adjustment, interactions, and allergy. Validation by a pharmacist per risk rules [3, 4].

2) Procurement and stock. Tendering via public purchasing groups, secured supply, batch and expiry traceability, quarantine for recalls [5].

3) Storage. Controlled temperature, humidity, and light; cold chain with continuous sensors and mapping; narcotics under dual control; hazardous drugs segregated [2].

4) Preparation. Non-sterile and sterile preparations, cytotoxic admixtures, parenteral nutrition, radiopharmacy and antibiotics reconstitution; environmental and process controls with in-process checks [2].

5) Dispensing. Unit-dose or patient-specific dispensing, automated cabinets on wards, barcode verification, bedside administration supported by electronic medication administration records (eMAR) [3].

6) Monitoring and reporting. Pharmacist medication reconciliation, therapeutic drug monitoring, pharmacovigilance/matériovigilance reporting, controlled-substance balance [4].

Core equipment

Information systems. Pharmacy management system (inventory, procurement, batch / lot tracking), CPOE with CDS, eMAR, prescription validation workflow, interfaces via FHIR and CI-SIS; barcode and DataMatrix support (GS1).

Automation. Unit-dose packagers, robotized storage/picking, automated dispensing cabinets with access control and traceability, smart pumps interfaced to eMAR, pneumatic tube with access logging.

Sterile production. ISO-classified cleanrooms with pressure differentials, biological safety cabinets or isolators for cytotoxics, compounding devices for parenteral nutrition or chemo, gravimetric/volumetric controls, label printers with barcodes, waste and spill kits.

Environmental & safety. Differential pressure and particle monitoring, temperature probes with alarms, closed-system transfer devices for hazardous drugs, PPE, eyewash and safety showers.

Radiopharmacy (when applicable). Hot cell, shielding, dose calibrator, radiopharmaceutical preparation under specific radioprotection rules [2].

Digital systems around pharmacy

Closed-loop medication. Electronic prescribing system, smart infusion pumps with alerts.

Inventory and traceability. Batch numbers, expiry dates, recalls, and controlled substances tracking with barcodes.

Sharing and identity. Data sharing through health messaging standards, patients identified with national health identifiers.

Team and safety culture

Pharmacy safety relies on predefined roles, double checks, and standardized procedures. Teams use competency tracking, audits, incident learning, and stewardship programs; hazardous drug handling follows regulations [6].

References

- [1] *Articles L5126-1 à L5126-11 du Code de la santé publique.* https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000006072665/LEGISCTA000006171372/2023-03-11.
- [2] Agence nationale de sécurité du médicament (ANSM). *Bonnes pratiques de préparation.* <https://ansm.sante.fr/uploads/2023/08/02/20230802-bonnes-pratiques-de-preparation-08-2023.pdf>.
- [3] Haute Autorité de Santé (HAS). *Référentiel fonctionnel de certification des logiciels hospitaliers d'aide à la prescription.* https://www.has-sante.fr/upload/docs/application/pdf/2021-05/referentiel_lap_hospitaliers.pdf.
- [4] Société Française de Pharmacie Clinique (SFPC). *Bonnes Pratiques de Pharmacie Clinique.* <https://sfpc.eu/wp-content/uploads/2022/03/Bonnes-Pratiques-de-pharmacie-Clinique-2022.pdf>.
- [5] Ministère de la Santé. *La fonction achat des GHT – Guide méthodologique.* https://sante.gouv.fr/IMG/pdf/dgos_ghat_guide_achat.pdf.
- [6] European Commission. *Guidance for the safe management of hazardous medicinal products at work.* <https://op.europa.eu/publication-detail/-/publication/ee1e6d15-4095-11ee-952f-01aa75ed71a1>.