TESTING VERSION

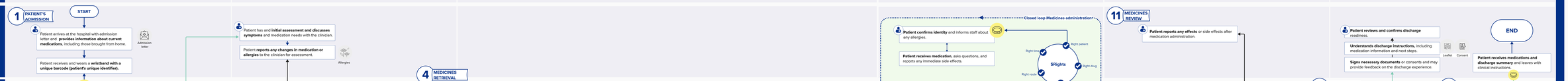
Closed Loop Medicines: Advanced Automation with ADCs Service Blueprint

Transforming medication workflows with advanced automation technology from admission to discharge

NHS England Digital Medicines

STAGE	HOSPITAL ADMISSION AND INITIAL MEDICATION HISTORY	INITIAL ASSESSMENT AND PRESCRIBING	MEDICINES RETRIEVAL, DISPENSING AND STORAGE	MEDICINES ADMINISTRATION	ADMINISTRATION RECORDING AND MONITORING	HOSPITAL DISCHARGE
STAGE GOAL	Ensure accurate patient identification, record creation, and initial medication reconciliation for a safe and informed start to the hospital stay with seamless integration with the Automated Drug Cabinet (ADC).	Conduct a comprehensive clinical evaluation, prescribe medications accurately using ePMA, and ensure multidisciplinary review and (second level) reconciliation of medications with automated updates to the ADC.	Ensure efficient and accurate retrieval, dispensing, and storage of medications, incorporating home medicines (Patient's own drugs) and maintaining optimal inventory through automated systems and ADCs.	Secure safe and accurate medication administration using CLMS technology with ADC integration, confirming the "five rights" and maintaining patient communication.	Verify accurate documentation of medication administration, monitor patient outcomes, and adjust treatment plans as needed.	Achieve a safe and coordinated discharge process, including medication reconciliation, patient education, and transfer of prescriptions.

PATIENT ACTIONS



FRONTLINE ACTIONS BY CLINICIANS AND ADMIN STAFF

BACKSTAGE ACTIONS: BY PHARMACY TEAM (DISPENSING AND SUPPLY)

SUPPORTED SYSTEMS

HOSPITAL ADMISSION AND INITIAL MEDICATION HISTORY	INITIAL ASSESSMENT AND PRESCRIBING	MEDICINES RETRIEVAL, DISPENSING AND STORAGE	MEDICINES ADMINISTRATION	ADMINISTRATION RECORDING AND MONITORING	HOSPITAL DISCHARGE
PAS: Updated with patient demographics, next of kin details, and admission information. **EPR: Updated** with patient details and admission location. **Barcode System:** Generates and prints the barcode wristband, linked to the EPR for accurate patient identification. **ADC: Receives patient medication** data from the EPR. **PDS:** Retrieved from PAS/EPR to verify demographics and contact details. **NCRS or SCR: Accessed** to review the patient's full medical history, including medications, allergies, and adverse reactions. (Future State) **GP Connect:** Direct retrieval of GP data for a more comprehensive medication history.	**ePMA: Interfaces with EPR** to log prescriptions with accurate patient information. **EPR: Updated** with medication details and PODs information. **ADC: Automatically updated** with new prescriptions, triggering instant allocation within the ADC. **Automated drug allocation:** Seamlessly updates pharmacy stock and ADC availability when levels are low.	**ePMA: Sends prescription orders** and allows pharmacists to verify and reconcile medications. **EPR: Records new or changed medications** and integrates patient records with ePMA. **Pharmacy stock management system**: Manages medicine ordering and inventory. **ADC: Directly updates patient-specific** medications and triggers automatic orders. **Barcode generation and labelling system:** Generates barcodes with patient and medication details. **Pharmacy dispensary robot:** Dispenses medications and integrates with the stock management system. **Controlled drug register:** Maintains a dual record of controlled drug transactions	**EPR: Checks scanned wristband against** medication barcode to confirm the "five rights." **Barcode Scanner:** Ensures accurate medication matching. **ePMA/EPR: Real-time updates** and alerts for mismatches, with data analysis tracking of mismatches. **ADC:** Logs medication retrieval and administration in real-time. **Biometric access control:** Ensures security for controlled substances.	**EPR: Updated with patient progress,** medication changes, and adverse effects. **Clinical Decision Support Systems (CDSS):** Provides clinicians with evidence-based recommendations. **ePMA/EPR: Records** new prescriptions or changes in medications. **Digital alerts: Notifies** staff of discrepancies or potential medication errors.	**Medicines reconciliation:** Pharmacists/doctors complete a second-level medication reconciliation using manual and digital sources (e.g., patient input, drug charts, ePMA, EPR). **ePMA/EPR:** Records discharge prescriptions and updates patient records. **Discharge letter / summary:** Consolidates discharge-related medication information and populates the discharge letter and it is sent to the GP through MESH. **EPS:** Prescriptions are sent electronically to the community pharmacy (only for Discharge Medicines Service -enabled cases).

SUPPORTED PROCESSES AND STANDARDS

HOSPITAL ADMISSION AND INITIAL MEDICATION HISTORY	INITIAL ASSESSMENT AND PRESCRIBING	MEDICINES RETRIEVAL, DISPENSING AND STORAGE	MEDICINES ADMINISTRATION	ADMINISTRATION RECORDING AND MONITORING	HOSPITAL DISCHARGE
GTIN: Global Trade Item Number, used for identifying trade items. **GLN:** Global Location Number, used for identifying locations within a supply chain. **DAPB0108:** Automatic Identification and Data Capture (AIDC) **DCB1077:** AIDC for patient identification **DCB0160:** Clinical Risk Management: its Application in the Deployment and Use of Health IT Systems **DAPB4013:** Medicine and Allergy/Intolerance Data Transfer	**GSRN:** Global Service Relation Number, used for patient and staff identification. **GLN:** Global Location Number, used for identifying locations within a supply chain. **GTIN:** Global Trade Item Number, used for identifying trade items. **SCCI0052:** Dictionary of medicines and devices (dm+d)	**GSRN:** Global Service Relation Number, used for patient and staff identification. **GTIN:** Global Trade Item Number, used for identifying trade items. **GLN:** Global Location Number, used for identifying locations within a supply chain. **SCCI0052:** Dictionary of medicines and devices (dm+d)	**GSRN:** Global Service Relation Number, used for patient and staff identification. **GTIN:** Global Trade Item Number, used for identifying trade items. **GLN:** Global Location Number, used for identifying locations within a supply chain. **SCCI0052:** Dictionary of medicines and devices (dm+d) **DAPB4042:** Transfer of Care – Acute Inpatient Discharge Standard	**GSRN:** Global Service Relation Number, used for patient and staff identification. **GTIN:** Global Trade Item Number, used for identifying trade items. **GLN:** Global Location Number, used for identifying locations within a supply chain. **SCCI0052:** Dictionary of medicines and devices (dm+d) **DAPB4042:** Transfer of Care – Acute Inpatient Discharge Standard **DCB0129:** Clinical Risk Management: its Application in the Manufacture of Health IT Systems	**GSRN:** Global Service Relation Number, used for patient and staff identification. **GTIN:** Global Trade Item Number, used for identifying trade items. **GLN:** Global Location Nr, used for identifying locations within a supply chain. **SCCI0052:** Dictionary of medicines and devices (dm+d) **DAPB4042:** Transfer of Care – Acute Inpatient Discharge Standard **DAPB4013:** Medicine and Allergy/Intolerance Data Transfer **eDischarge Summary Standard** (PRSB)