



Healthcare
Conference
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Closed-loop medicines management – a national update

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Closed Loop Medicines Management

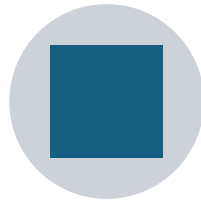
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Overview



What is Closed Loop Medicines Management (CLMM)



Overview of CLMM



Benefits



Challenges

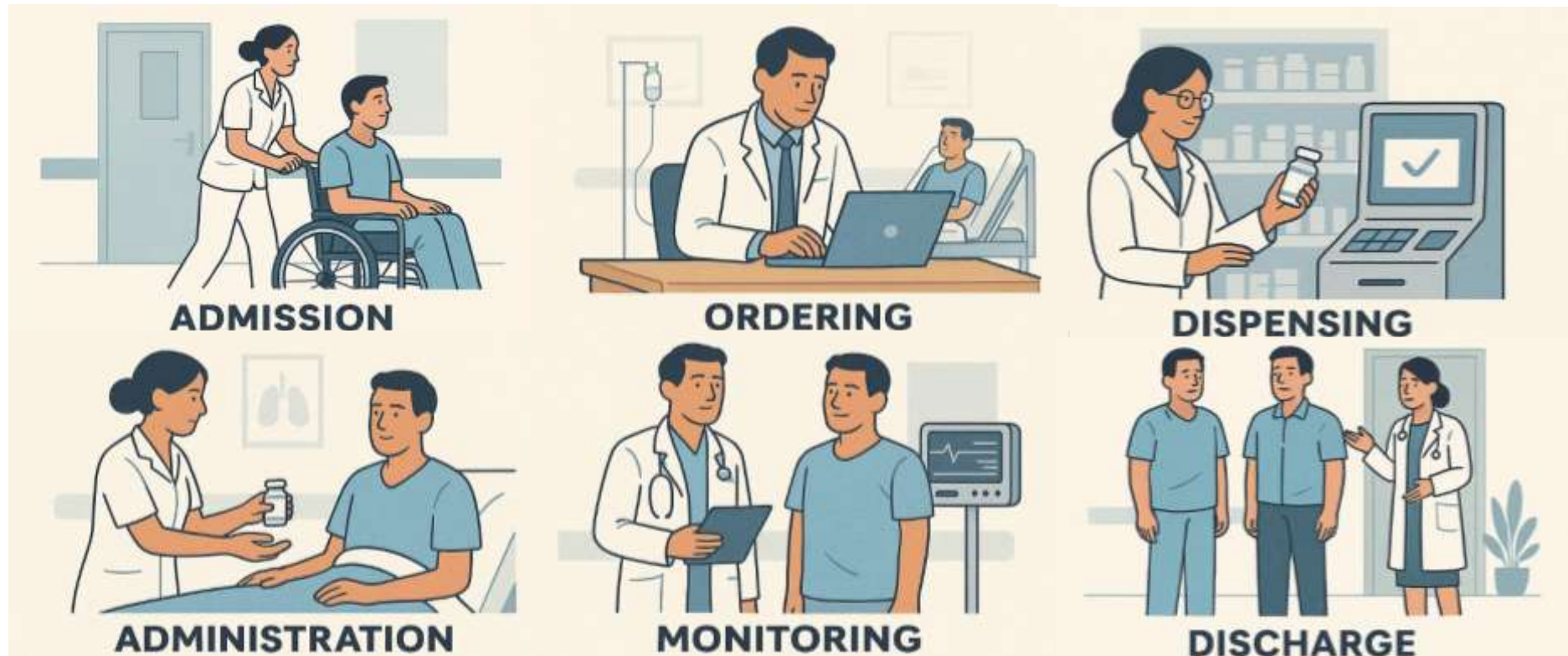


What's next

Patient Safety

237+ million medication errors are made every year in England.¹

Medication errors cost the NHS nearly £98.5 million every year and up to 1708 lives are lost.²

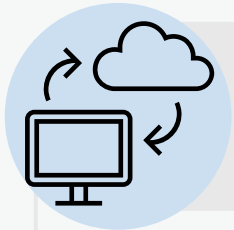


1. Elliott RA, Camacho E, Jankovic D, *et al* Economic analysis of the prevalence and clinical and economic burden of medication error in England *BMJ Quality & Safety* 2021;**30**:96-105.

<https://doi.org/10.1136/bmjqs-2019-010206>

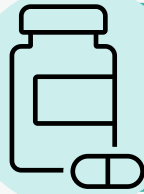
2. BMJ - 237+ million medication errors made every year in England - BMJ Group

Understanding what is Closed Loop Medicines Management (CLMM)



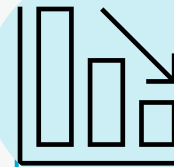
Closed Loop Medicines Prescribing

- **Electronic** prescribing and transfer of **structured medicines** information.
- **Seamless transfer** of medicines **data** between systems.
- **Removal** of **paper-based** processes.



Closed Loop Medicines Administration

- Is the use of digital technologies to provide **additional validation** that supports the cross checking of the **five rights of medication administration**.
- These are **right patient**, **right medicine**, **right route**, **right form**, **right dose**.
- Helps to **prevent medication administration errors**.



Closed Loop Medicines Supply

- Refers to the part of the closed loop related to the **ordering and dispensing** of medication.
- **Data** is captured and shared in **real time**.
- Allows for **accurate tracking and management of medicines** throughout the entire medicine supply chain.

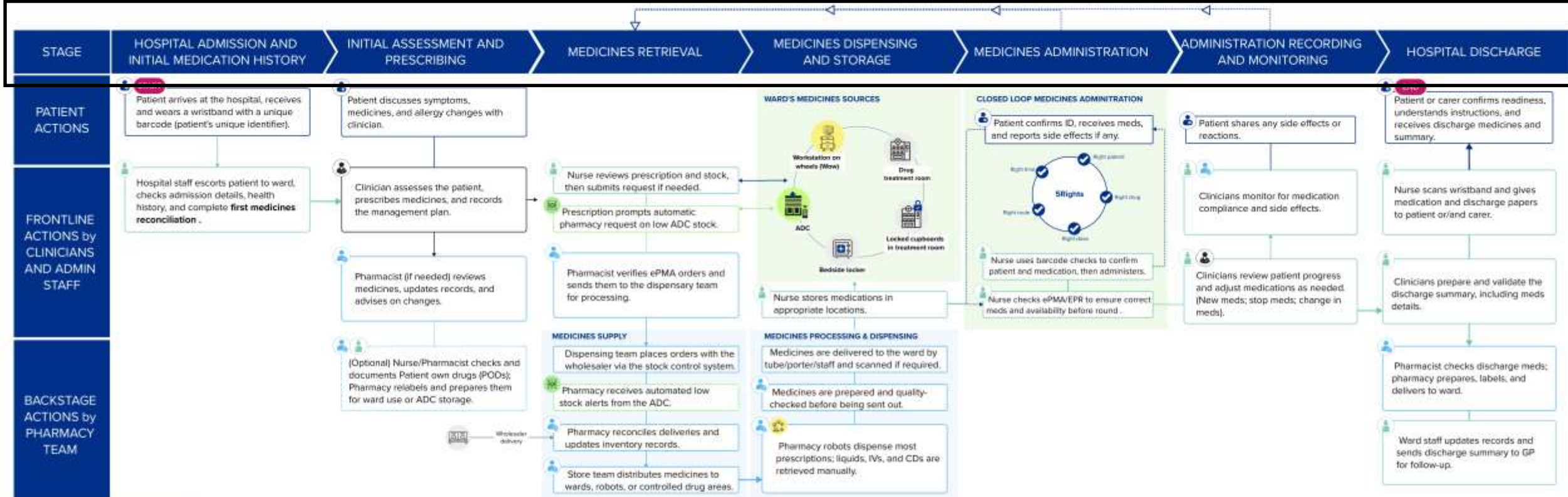
How Closed-Loop Medicines System works in Hospitals

From admission to discharge: how staff, technology, and standards work together to keep patients safe.



Important Note

This is a high-level, ideal-path overview of CLM. It doesn't show hospital-specific workflows or exceptions.



KEY TECHNOLOGY and EVENTS	WITHOUT ADC		WITH ADC	
	<ul style="list-style-type: none"> Barcode System: Generates and prints the barcode wristband, linked to the EPR for accurate patient identification. 	<ul style="list-style-type: none"> ePMA: Interfaces with EPR to log prescriptions with accurate patient information. 	<ul style="list-style-type: none"> Automated drug cabinets (ADC): Receives patient medication data from the EPR. 	<ul style="list-style-type: none"> Pharmacy dispensary robot: Dispenses medications and integrates with the stock management system. Barcode generation and labelling system: Generates barcodes with patient and medication details.

REQUIRED STANDARDS	GS1 UK Standards	NHSE Medicines related Standards	NHSE Standards
	GTIN: Global Trade Item Number, used for identifying trade items. GLN: Global Location Number, used for identifying locations within a supply chain. GSRN: Global Service Relation Number, used for patient and staff identification.	DAPB4013: Medicine and Allergy/Intolerance Data Transfer SCC0052: Dictionary of medicines and devices (dm+d)	DAPB0108: Automatic Identification and Data Capture (AIDC) DCB0177: AIDC for patient identification DCB0160: Clinical Risk Management: its Application in the Deployment and Use of Health IT Systems

Review of GDE sites

Closed Loop Medicines **Supply**

- 01 | The Royal Cornwall Hospitals NHS Trust (RCHT)
- 02 | Royal Liverpool University Hospitals NHS Foundation Trust (LUHT)

Closed Loop Medicines **Administration**

- 03 | Cambridge University Hospital NHS Trust Foundation Trust (CUHT)
- 04 | City Hospitals Sunderland NHS Foundation Trust – South Tyneside (FF)
- 05 | Great Ormond Street Hospital (GOSH) Trust
- 06 | University College London Hospitals (UCLH)
- 07 | Alder Hey Children’s Hospital (AHCH)
- 08 | Oxford University Foundation Trust (OUFT)
- 09 | Newcastle upon Tyne Hospital Foundation Trust (NuTH)
- 10 | Royal Free London (RFL) NHS Foundation Trust
- 11 | St George’s University Hospital NHS Foundation Trust (SGUHT)



Benefits



Improved patient safety and Care

- Reduction in the number of medication errors.
- These include preventable administration and dispensing errors.



Improved data availability and analysis

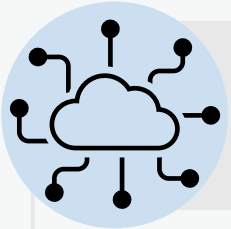
- Faster access to data.
- Enables the user to analyse trends, enact drug recalls more quickly, and quality improvement initiatives.



Improved stock management

- Removal of manual paper-based processes.
- Real time access to data on stock locations, quantity and usage.
- More accurate stock inventory management processes.

Challenges



Interoperability

- Interoperability for the transfer of medicine information and dosage instructions across systems.
- Lack of interoperability has meant that no single organisation has been able to adopt and end to end system.



Barcodes

- Reuse of barcodes.
- Barcodes not being recognised.
- Placement of barcodes on outer packaging.



Adoption & Maintenance

- Resource required to maintain drug catalogues and system up to date.
- Cultural change management.

Standards

PRODUCT Global Trade Item Number (GTIN)

- GTIN is used to identify trade items.
- Currently medicines predominately use GTIN barcodes.



NHS Standards

- DAPB0108: Automatic Identification and Data Capture (AIDC)
- DAPB4013: Medicine and Allergy/Intolerance Data Transfer
- SCCI0052: Dictionary of medicines and devices (dm+d)

PLACE Global Location Number (GLN)

- GLN is used for identifying locations within a supply chain.



PATIENT/STAFF Global Service Relation Number (GSRN)

- GSRN is a globally unique identifier.
- Used for patient and staff.



What's next

Assessment of the current DMA results, which includes Closed Loop Medicines Management.

Publication of a report on the implementation on Closed Loop Medicines Management across NHS providers.

Funding to support a small number of hospitals achieve Closed Loop Medicines Management within 2025/26.

Thank You



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