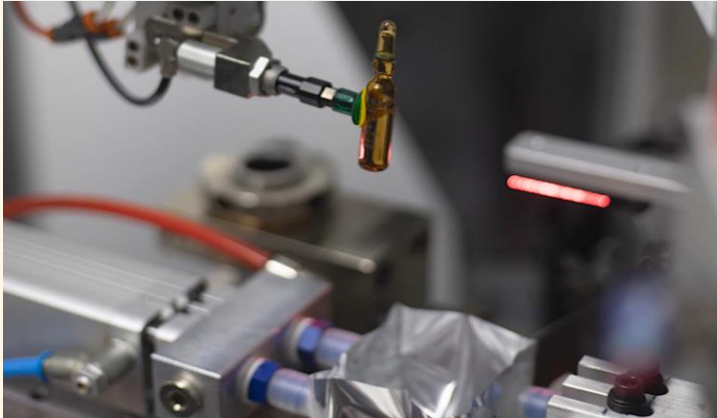


# Closing the loop with unit dose dispensing whilst optimising medicine logistics (*OptiMed-ID project*)

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# A state-of-the-art digitalised Unit Dose Closed Loop Medicines Management system: A NEW WORKFLOW MODEL FOR INPATIENT MEDICINES



## OFF-SITE PACK-SPLITTING & UD OVER-PACKING ACTIVITY

**All-in-1 Repackaging robots** in Deenova's Plant, automatically create unit doses retaining primary packaging, **over-pack and label all pharmaceutical forms** (oral solid, liquid, patches and suppositories)

Unit doses are then delivered to UHL.



## ON-SITE, LOCAL AUTOMATED STORAGE AND DISPENSING

Unit doses are loaded in **All-in-1 Stations** at **ward** level, which **automatically prepare and dispense Personalised medicines** according to prescription requirements



## WARD BSV & ADMINISTRATION ACTIVITY

The administration of all medication forms is supported by **All-in-1 Trolley** that guarantees the last step of the **closed loop medication management**: with the **bed side verification**, by scanning of patients' identification tag, **Nervecentre e-prescribing** assures a further check on changes or corrections of the prescription.

# New IT medicines system interoperability at UHL

nervecentre

## ELECTRONIC PATIENT RECORD

Real-time visibility of data that can influence complex prescribing decisions; pathology results, vital signs, medical history, drug charts, current medications and contraindications



nervecentre

## PRESCRIPTION & PHARMACIST CLINICAL VALIDATION

- ✓ dm+d database
- ✓ complex protocols and regime dosage instructions
- ✓ alerts and notifications to pharmacy, infection control etc
- ✓ discharge summaries and TTO process integration
- ✓ BNF guidelines



## Digitalised Unit dose Closed Loop Medicines Management

nervecentre

## Bar Code Medicines Administration

- ✓ Patient identification
- ✓ Medications check: form, dose time
- ✓ Alerts if doses don't match prescriptions



Picture of Nurses while scanning the dose

deenova

## MEDICATION DISPENSATOR

- ✓ Fully automated therapy dispensation in patient specific drawers directly in the administration trolley
- ✓ Full traceability of local stock of medication (real time inventory, automated expiry date checks, seamless batch/medicine recall, etc)



## EVIDENCE BASED BENEFITS: UHL PILOT STUDY

-25%

### AVERAGE SAVINGS ACROSS THE FOUR WARDS

*Mean average of savings in cost of medicines*

Analysis of medicines expenditure indicates potential savings to be in the order of 4m across the Trust This includes approx. £2.4m high cost medicines.

-40%

### ITEMS HELD IN WARD STOCK CUPBOARD

*Replaced unit doses held in automated cabinet and re plenished based on consumption*  
175 items pre pilot to 78 items post pilot on ward 15N (results vary from ward to ward)

-29%

### RE-SUPPLY WHEN MEDICINES CANNOT BE LOCATED EASILY

*Many medicines are misplaced at ward level, when patients move wards, or cannot be located from the multiple storage lockers, cupboards and trolleys where they might otherwise be kept*

From 3.78 items/day pre pilot to 2.42 items/day post pilot

-52%

### IN-PATIENT ITEMS THROUGH THE DISPENSARY

*This reduction allows dispensary staff to concentrate on medicines needed by patients up on discharge. Anecdotal feedback is that the supply of discharge medicine is much improved*

From 14.07 items/day pre pilot to 6.64 items/day post pilot over a 7 month period

-60%

### REDUCTION IN VALUE OF WASTAGE DESTROYED

*Not only was this a saving in medicines discarded but also a saving in time spent dispensing these items*

For 3 month pre period the total drug expenditure for all 4 wards the cost of the waste was £3208. 3 months post implementation drug waste was £923

## KNOWLEDGE TRANSFER PARTNERSHIP - KTP

- Three-way partnership between Innovate UK, Birmingham University and Deenova UK Ltd.
- Independent study starting March 1st 2024 and guided by advisory panel composed of senior NHS specialists
- Will collect baseline data to include medicines wastage, medicines related activity (administration, supply, distribution multiple handling of part-used packs etc) to and within wards, drug administration errors and incidents
- Will shadow Optimed project for two years to compare data before and after implementation
- Will serve as a reference point regarding unit dose administration for the NHS

## OTHER SUCCESS STORIES



University Hospitals  
of Leicester  
NHS Trust



**Winner of the JCI Quality Improvement 2014** with the project "Management of unit dose Medications (DUF) – Prescription and computerized administration of medication therapy"




**Winner of the JCI Quality Improvement Award 2015** with the project "Clinical risk management in the administration phase of medication therapy"



**-18%** Pharmaceutical expenditure per day of hospitalization<sup>1</sup>

**-20%** In pharmaceutical spending point Diagnosis-Related Group treated (DRG).<sup>1</sup>

**-50%** In time dedicate to logistic processes by nurses<sup>1</sup>

 Reduction in cases of not administration related to not availability of medications<sup>1</sup>

**-100%** Reduction of expired products.<sup>2</sup>

**-9,3%** Savings on pharmaceutical expenditure (Existing EPMA, therefore in part already optimized).<sup>2</sup>

**-20%** Reduction in ward inventory<sup>2</sup>

**4,7% → 0%** Reduction in medications administration errors: from 4.5% in 2012 to 0% in 2015 (estimated impact of 2.5Mn€ related to reduced patient stay).<sup>2</sup>

**-50%** Reduction in ward inventory

**-7%** Reduction in medications waste

**-10%** Reduction of nurse time dedicated to Therapy Preparation

**-100%** Reduction of expired products.

# Thank you

## Contact:-

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