



## SUSQI PROJECT REPORT

### Reducing Medicine waste

**Start date of Project:** Monday 10th July

**Date of Report:** 14th August 2023

#### Team Members:

- Claire Williams, Deputy Clinical Pharmacy Manager
- Louise Bond, Deputy Lead Medicines Management Technician
- Stacey White, Medicines Management SATO
- Emily Green, Medicines Management SATO
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#### Background:

Medicine waste is a huge problem across the NHS. It is estimated that £300 million (1) is wasted annually on unused or partly used medication. This figure is from 2015 so is likely to be higher in 2023. Within the hospital setting, medication waste is largely contributed to by patients not taking their medications home, or medications not being transferred with them during their inpatient journey (e.g., if they move wards).

A number of steps have to be followed for a patient to receive their medication in a timely manner, from being prescribed by the Clinician, to being assessed as clinically safe and appropriate by a Pharmacist, to then being dispensed and accuracy checked, and then delivered to the ward. If this medication is not given to the patient they could miss important doses of critical medication resulting in longer length in-patient stays as their health may decline. If medications are missed at discharge, the discharge could be delayed as a new dispensation request is sent, or the patient may remain unwell which may lead to an avoidable readmission.

Ensuring that medication is transferred with patients ensures that delays for discharge medications are reduced. Patients may have medication dispensed during their stay, the agreement we have with the Integrated Care Board is that patients have at least 14 days supply to go home with.

However, many prescriptions dispensed by the pharmacy team are for medications patients have been on long-term. It is likely they already have a prescription waiting for them in their pharmacy or sufficient medications at home which they have not brought into hospital. Requests for regular medications on discharge that patients are likely to have at home or are waiting at their pharmacy adds time to the hospital pharmacy dispensing process. There are additional cost saving and patient safety benefits for example patients stockpiling medication at home, risking out of date medicines



being used and increased waste of unused medication having to be destroyed. These unnecessary/low value requests may mean that urgent orders are delayed, or the prioritising of discharge medication that is not given to the patient is a waste of time, money and resources and impacts on other patients who need theirs. Some hospitals aim to reduce this duplication in medications by not dispensing medications for patients who have been admitted for less than 72 hours (unless they are a new prescription).

The reasons behind this project was to look at the dispensing that is carried out by the pharmacy team that does not reach the patient and either has to go through a tedious process of returning the medication back into stock or as is most often the case being disposed of as clinical waste. Returning unused medication dispensed by the hospital pharmacy team in a timely manner to pharmacy for reuse reduces the stock holding of HHFT and in turn reduces ordering and deliveries of medication, lowering our financial and carbon impact.

The project also wanted to look at reducing regular medication being issued for patients whose stay was less than 72 hours. This would hopefully reduce medication spend and not compromise patient safety.

The project took place on the Basingstoke and Winchester sites on 4 wards on each site these included the admission units on both sites who are high turnover wards where patients may be transferred onto a more appropriate ward for their continued care or be assessed and have medication prescribed for them to take home. Due to current bed pressures patients are often transferred through multiple wards and there is a consensus that medication is not transferred with them for a number of reasons. The wards that were included in the project were:

#### Basingstoke:

- Acute Assessment Unit - Medical assessment unit usually direct from GP or A&E
- E1 - Gastroenterology ward
- E3 - Respiratory ward
- D4 - Orthopaedic ward

#### Winchester

- McGill Assessment Unit - Medical assessment unit usually direct from GP or A&E
- Barlett - Surgical ward
- Freshfield - Gastroenterology ward
- Shawford - Respiratory ward

The team who were involved in the project were the Medicines Management SATO's, whose role is developing at HHFT to support medicines optimisation through stock control and facilitating Pharmacy discharge processes.

#### Specific Aims:

1. To reduce waste by moving patients medication with them and returning unused medication in a timely manner so it can be reused (not disposed of)
2. To review the impact of not supplying patients regular medication on discharge when the inpatient stay was less than 72 hours.



## Methods:

### Studying the system

We completed a process map (Appendix 1) to review our current medication orders. Highlight differences across wards as some have pharmacists and others don't, etc. Please see the links below

We completed a review of our standard operating procedure (SOP) and policies. We contacted other hospitals to compare their policies for dispensing discharge medications. This identified that several Trusts will only supply new medications for patients admitted for less than 72 hours as they assume the patient will have their other medications already at home.

We identified trial sites (4 per site). We chose a selection of wards and specialities across both sites to identify if the issues were similar.

## Changes implemented

### Aim 1:

The project initially engaged 1 member of staff on each site, due to unplanned absence a new member of staff was moved to support at BNH. The impact of the project has demonstrated that the active management of moving medication with patients and returning unused medication to support the ward staff engaged to implement these changes has positive benefits for patients and staff

Having a designated staff member responsible for the returns and transfers meant that there was continuity to the task, before the pilot this would have been completed adhoc with no clear designation of responsibility across stores, ward teams and dispensaries resulting in a large volume of medication waiting in the returns area. The member of staff visits their allocated wards at least 2 to 3 times a week and they check the treatment room and TTO cupboards to see if any medication has been left there due to the patient going home or moving to another ward. For medication that is not required they will assess if it has been stored correctly and is still in its original container with at least 3 months expiry left and if it meets this criteria it will be returned into stock to be reused. For patient transfers they will double check which ward they have been moved to and liaise with the Pharmacy team covering the ward to ensure that the medication is still required by the patient.

A new member of staff is being employed on the RHCH site so that there will be two staff members to support more wards on each site.

### Aim 2:

We did not achieve the level or expanse of communication to the wider hospital due to service pressures. This resulted in the objective of routinely not dispensing regular medication for admissions less than 72 hours not being followed through. However in light of the impact of the rest of the pilot this has been highlighted as a key area to focus on leading into the next period of winter pressures and is already being picked up by the Lead Admissions Pharmacist. They have put together a detailed pilot that they will be initially trialling on the Acute Admissions units on the Winchester and Basingstoke sites. This is being expanded to involve clearer communication with our Primary Care colleagues about medication changes at discharge which will also reduce the need to supply all regular medication for patients.



The Deputy Clinical Pharmacy Manager will be discussing the impact of the pilot at the next area Lead Medicines Management Technicians meeting to share learning and to find out more information about discharge supplies at other Hospital Trusts.

The remainder of this report focuses on Aim 1 only.

#### Measurement:

##### *Patient outcomes:*

The return of medication in a timely manner could mean that patients who may have had a missed dose due to being out of stock of their medication is reduced. This could be measured by a review of the missed doses report with the MM team being aware of long term stock supply issues and ensuring they return any of this medication that has not been required.

Unintended negative impacts can be monitored via our datix system.

##### *Environmental sustainability:*

The carbon footprint of medications was estimated using a 'top-down' approach based on cost. We used the pharmaceuticals emission factor used within Hampshire Hospitals NHS Trust, which does not include waste disposal, of 0.34 kgCO<sub>2</sub>e / £ spent.

To estimate the carbon emissions associated with waste disposal we used a process-based approach based on weight of waste and an emissions factor for incineration, 1074 kgCO<sub>2</sub>e/tonne taken from Rizan et al 2021 (2).

##### *Economic sustainability:*

Costs of medications were obtained from the Wellsky EPMA program.

Waste disposal costs were provided by the sustainability team. The cost of disposing of medicine waste is £900 per tonne, this equates to a cost of £5.05 per blue bin that was destroyed across the 4 wards at Basingstoke and at Winchester.

Unfortunately it has not been possible through the scope of this project to find out the average time to dispense and issue medication to work out potential savings from not having to re dispense medication; however we know that this would have an impact on the pharmacy department and allow staff to be able to concentrate on urgent medication requests. This would facilitate faster discharges allowing a better flow of patients from the Emergency Department through to the appropriate ward for treatment.

##### *Social sustainability:*

Engagement with ward staff will be key although a difficult area to measure. We would hope to see an increase in job satisfaction from Pharmacy colleagues involved in the pilot as the results are shared.

#### Results:



*Patient outcomes:*

Patients received their TTO's in a timely manner when they were moved by the team, reducing the need for them to wait and contributing to flow within the hospital. Patients were less likely to miss important doses of critical medicines as their medications were moved to their current ward.

Following on from COVID and global events some medicines are becoming increasingly difficult to source, by returning unused medication it enables other patients to receive this medication, this then impacts on their ability to be treated more appropriately and quickly and reduce in-patient stays. This has both a patient and an economic impact.

*Environmental and economic sustainability:*

Returned medications

The following table shows the value of medication returned into stock for reuse during the period of the pilot and for the month following the pilot.

	<b>During pilot</b>	<b>Post pilot period</b>	<b>Total return</b>	<b>Increase in return (savings)</b>
BNH	£8,409.57	£8,972.78	£17,382.35	£563.21
RHCH	£8,133.51	£14,512.32	£22,645.83	£6,378.81
<b>Total</b>	<b>£16,543.08</b>	<b>£23,485.10</b>	<b>£40,028.18</b>	<b>£6,942.02</b>

Over our month trial, medications to an increased value of £6,942 were returned for re-dispensing across the 8 trial wards. This is a saving of 2,360.28 kgCO<sub>2</sub>e, equivalent to 6,970 miles driven in an average car. Projected across a year, assuming similar amounts of medication returns, £83,304 and 26,487.6 kgCO<sub>2</sub>e could be saved.

Waste disposal

We have estimated the weight of £6,942 worth of medication to weigh between 30-40 kg. Taking the lower weight, this equates to a saving of £27.00 and 32 kgCO<sub>2</sub>e in reduced incineration costs. projected across a year, this is £324 and 384 kgCO<sub>2</sub>e.

With increased medication return and reduced waste disposal combined, our total anticipated annual savings across the 8 wards are **£83,628 and 28,323.36 kgCO<sub>2</sub>e**, equivalent to driving 83,648 miles in an average car.

Additional benefits

The Trust would have reduced stock holding as more medications are returned. This will reduce risk of medications going out of date and needing to be incinerated. It will also reduce the amount of medications needing to be procured. While this would bring additional financial and carbon savings, this was outside the scope of this project to measure.

*Social sustainability:*

An increased awareness amongst ward teams of how Pharmacy works and that we can be an integral part of the ward team to support patients and medication education.



The team became recognised on the wards they were covering due to their increased regular presence on the wards, they were asked to support in other ways which improved working relationships.

The Pharmacy stores team felt more supported as they were being helped to manage the returns which are often left to build up.

For Pharmacy staff wellbeing to know that the medication they are dispensing and issuing is actually reaching the right patient contributes to staff satisfaction. There is nothing as disheartening as seeing boxes of returned dispensed medications returning from the wards when the dispensary team is under constant pressure from wards and site teams to screen, dispense, check and deliver medications urgently. The hope is that this active management of medication allows the Pharmacy team to concentrate on the actual urgent medications.

#### Discussion:

There were a number of barriers at the beginning of the pilot as there was unplanned absence during the course of the project which impacted the data collection and the deeper evaluation of the results. This also meant that we were unable to complete surveys with ward staff.

The inclusion of the other MM SATO during the pilot due to sickness has had a valuable impact in a number of ways as it meant we were able to continue with the pilot but has established a team to be able to continue the actions from the pilot. As this happened at Basingstoke it has also put down a blueprint for how our Pharmacy teams can work together on each site supporting discharges and stock control.

We were able to evidence the sustainability of the pilot and the impact it could have across all wards as it was undertaken over the summer holiday where there is often additional leave and during strike action. Consistent pharmacy support with medicines management, education and communication will support us to maintain these reductions long term. leads to a reduction of waste through education and communication.

This saving represents our 8 trial areas with an average monthly saving of £867.75 and 295 kgCO<sub>2</sub>e per ward in medication reduction. With 45 wards across Hampshire Hospitals who all require medications, savings would be significantly higher if the pilot was rolled out Trust wide. Applying a conservative 50% of our savings to all wards, the Trust could achieve annual savings of £234,292 and 79.6 Tonnes CO<sub>2</sub>e. If we assume each ward saves an average 3.75 kg of medications from being incinerated per month, we could achieve additional savings of £1,822.50 and 2,174 kgCO<sub>2</sub>e.

#### Conclusions:

The project demonstrated over the short period that having an active Pharmacy presence to help manage patients medication is key to reducing unnecessary dispensing and reducing waste. The members of the team were able to move or return unwanted patients medication appropriately so that they could be reused which supports a sustainable approach for pharmacy. The pharmacy team will be keeping records of their returns and waste disposal to determine if education and



communication helps with a sustained improvement and a reduction in how much medication is sent for destruction.

The key elements that contributed to success in the project was an enthusiasm in the pharmacy team to demonstrate how they can support the wards and to educate wards on their skills and knowledge. There have been several themes identified through the course of the project that the team with the support of the Senior Pharmacy Management Team would like to take forward.

The savings from increased medication returns into stock to be able to be used is incredibly impactful and will hopefully drive Trust support of the pilot and allow the opportunity to expand it.

### References

- <https://www.england.nhs.uk/wp-content/uploads/2015/06/pharmaceutical-waste-reduction.pdf>
- Rizan C, Bhutta M, Reed M, Lillywhite R. The carbon footprint of waste streams in a UK hospital. *Journal of Cleaner Production* 286 (2021) 125446.  
<https://www.sciencedirect.com/science/article/abs/pii/S0959652620354925>





# Appendix 1: process map

