Reducing medicines waste throughout the patient journey
Simple guide and supporting information

Not using medicines as intended is a waste of scant NHS resources. Medicines are also key to the sustainability agenda with pharmaceuticals accounting for 22% of the NHS carbon footprint.

The NHS is facing financial challenges, which are estimated in the Five Year Forward View to be around £30bn in 2020/21.

Medicines are known to be the most common therapeutic intervention in healthcare, but their use is often suboptimal for a variety of reasons and this can lead to medicines not being used as intended and ‘waste’ in the health economy.

Medicines Optimisation, with its patient-focused approach, tries to ensure that the right patient gets the right choice of medicine, at the right time. With this focus on the patient and their experiences, decisions can be made that help the patient to improve their outcomes and take their medicines correctly. This will then lead to the avoidance of taking unnecessary medicines, medicines wastage will be reduced and medicines safety will be improved. All of which will reduce the amount of money that could be ‘wasted’.

There are plenty of opportunities throughout the patient journey to make interventions that can help reduce medicines waste. This resource aims to highlight some of the key interventions that can be made and links to current good practice. To put this into clinical context a patient journey has been used to illustrate where waste can be minimised.

---

Case Study Background Information

Mrs B is 78, lives alone in her own home and her FP10 repeat medicines are listed below.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Quantity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramipril 2.5mg bd x112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin 75mg od x28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisoprolol 5mg od x56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omeprazole 20mg od x28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atorvastatin 10mg od x28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol 500mg 1-2 prn x100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OTC/herbals: Multivitamins with added vitamins A and D

Allergy: Trimethoprim – Skin rash

In this guide the case of Mrs B is used to illustrate how medicines issued to her but not used as intended could be reduced or avoided as she moves between care settings. Many aspects of this are dependent on her clinical condition so information on her care plan is also included. However, the clinical details are used for illustrative purposes only.
## Primary care - Medicine quantities

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mrs B had to order some of her drugs every month and others every 2 months = extra work for GP surgery prescriptions staff and pharmacy + complex for patient</td>
<td>Synchronise quantities for regular medicines Consider pharmacy repeat dispensing service Community pharmacy/ dispensing doctor working with prescriber &amp; patient</td>
<td>Better information and support for re-ordering repeat medicines. National/local messages NHS organisations Community Pharmacies GP practices</td>
<td>Breaking Down the Barriers: how pharmacists and GPs can work together to improve patient care <a href="#">Link</a> Guidance for the Implementation of Repeat dispensing <a href="#">Link</a> Pharmaceutical Services Negotiating Committee (PSNC) guidance <a href="#">Link</a> Pharmacist-led repeat prescription management: <a href="#">Link</a> Campaigns aimed at patients such as ‘Only order what you need’ <a href="#">Link</a> to Medicines Waste UK <a href="#">Link</a> to Scottish campaign <a href="#">Link</a> to Welsh campaign</td>
</tr>
</tbody>
</table>

Mrs B ordered everything each month thinking this was best, so she accumulated unused surplus ramipril and bisoprolol at home

---

**Measure:** MO dashboard
Repeat Dispensing volume and Electronic Prescription use [Link](#)
### Primary care - Adherence

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
</table>
| Mrs B stopped taking the bisoprolol because she thought it was making her dizzy and she didn’t want to take so many medicines. She didn’t like to tell the GP or pharmacist because they were busy. | Mrs B had a myocardial infarction 3 years ago. She knows she has a lot of medicines for her heart. The bisoprolol could be causing dizziness but the ‘pill load’ may be more important for her. Beta blockers protect the heart post MI, reducing morbidity and mortality, so non-adherence needs to be addressed. | Shared decision making  
*Patient, Prescribers, Pharmacists, Nurses Other Health Professionals*  
Address polypharmacy, if appropriate consider deprescribing  
*Prescribers, Pharmacists,*  
Medicine Use Review (MUR)  
Advanced Community Pharmacy Service (England coverage >90%)  
*Community pharmacist referring to prescriber*  
Medication review  
*GP practice, Other Prescriber, Clinical Pharmacist* | NHS Constitution [Link](#)  
‘Ask 3 questions’ [Link](#)  
Medicines Adherence NICE clinical guideline 76 [Link](#)  
PrescQIPP Optimising Safe and Appropriate Medicines Use [Link](#)  
Polypharmacy, oligopharmacy & deprescribing: Resources to support local delivery [Link](#)  
MUR service (Target group) [Link](#) |

Mrs B often omitted the night time dose of ramipril. It was inconvenient and she didn’t think it would do much good while she was asleep.  

Ramipril can be taken once a day so it may well be possible to change the regimen to once rather than twice daily. The dose is quite low for cardiovascular prophylaxis so a dose increase might also be considered.  

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What happened?</td>
<td>Clinical issues and care plan</td>
<td>Solutions + Who can fix</td>
<td>Information</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>There are numerous factors which can affect adherence, including mental health, media scares, changed guidance, and mixed messages from different professionals</td>
<td></td>
<td>Invite patients to express concerns to <em>all professionals involved in their care</em></td>
<td>Supporting Medicines Adherence and 4 Es Triangle <a href="#">Link</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Improving medication adherence: Resources to support local delivery Vs1 <a href="#">Link</a></td>
</tr>
</tbody>
</table>

Measure: **MO dashboard**  
MUR uptake. [Link](#)

*GP patient survey 2014: Q21 and Q23 on patient involvement* [Link](#)
Hospital transfer

Mrs B fell and broke her hip on Sunday morning. Her neighbour called an ambulance and she was taken to A&E.

Admission to hospital

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>At A&amp;E they had no medical records for Mrs B and she only remembered having paracetamol and several ‘heart’ medicines. She received just analgesics until Monday morning.</td>
<td>For this short time period, Mrs. B not having her current medicines shouldn’t be harmful. For other patients on time critical medicines like anti-epileptics, insulin, drugs for Parkinson’s disease there could have been significant problem.</td>
<td>Ambulance team support medicine transit e.g. Green medicine bags Ambulance Trust – medicines policy implementation at all levels. Commissioners -include in contract Lions Message in a Bottle scheme Patient held records e.g. patient passport, repeat medicines slip (right hand side of repeat prescription) kept in hand bag</td>
<td>Moving Medicines Safely: Implementing and sustaining a ‘Green Bag’ Scheme <a href="#">Link</a> Lions club Message in A Bottle Project <a href="#">Link</a> My Medication Passport <a href="#">Link</a></td>
</tr>
</tbody>
</table>
What happened? | Clinical issues and care plan | Solutions + Who can fix | Information |
---|---|---|---|
Mrs. B gets admitted to the ward while waiting for surgery | Mrs. B has not been taking the bisoprolol and misses some doses of ramipril. This will not be clear from Summary Care Record or repeat medicines list. Restarting these could cause hypotension and increase risk of falling. Mrs B is the only expert who can confirm what medicines she actually takes | GP practices upload records to Summary Care Record so easily accessible if needed out of hours. CCGs and practices – policy to adopt SCR. National messages about taking medicines with you to hospital | Link to Summary Care Records. Link to NHS Choices Introduction to Summary Care Records. Bag ‘em Bring ‘em campaign Blackpool Teaching Hospitals NHS Foundation Trust. |
Patient undergoes Medicines Reconciliation (MR) | Pharmacy–led MR Pharmacy team. Pharmacy interventions aimed at improving safety as well as improving the timeliness of discharge through better planning | Medicines Reconciliation Best Practice Resource and Toolkit. Link. Link to safelyHEREsafelyHOME. |

**Measure:** MO dashboard
Number of trusts accessing Summary Care Record and Medicines Reconciliation. [Link](#)

**Summary Care Record Deployment Map** for GP practices [Link](#)
### On the ward

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
</table>
| Following surgery Mrs B is transferred to the rehab ward. The ward fails to send all medicines with Mrs B. New prescription for: Paracetamol 1g qds PRN Codeine 30-60mg qds regularly for 3 days then PRN. Low Molecular Weight Heparin (LMWH) Enoxaparin 40mg od Mrs B needs to start bone protection: Calcium and Vitamin D Alendronate 70mg once a week | Consider need for laxative with codeine use, paracetamol also prescribed by GP Ascertain length of LMWH treatment. NICE guidance 28-35 days. Who will administer LMWH when discharged? Will it be District nurse or could patient self-administer? Endorse with formulary choice Adcal D3 chewable 1 tab bd Check calcium is within normal limits before starting alendronate. | Hospital policy on medicines transfer  
*Ward staff*  
Local venous thromboembolism (VTE) risk assessment based on national guidance  
*Ward staff*  
Counsel patient on how to take alendronate and advise patient to discontinue multivitamin tablet  
*Pharmacy team*  
Remember shared decision making – Mrs B is already worried about lots of tablets. Will she take them? | Keeping patient’s medicines with them: Optimising the transfer and use of medicines as patients move around organisations and between care settings [Link](#).  
NICE Clinical Guideline 92 [Link](#).  
A NOAC could be used instead, but at the time of writing NICE doesn’t cover their use in this specific clinical situation [Link](#), but organisations may take a pragmatic approach. Consultation skills for pharmacy practice [Link](#). |
### What happened?

Mrs B develops a small pressure ulcer, a hydrocolloid dressing is chosen.

Nursing staff request a Multi-compartment Compliance Aid (MCA).

Mrs B is getting used to her new medicines but could benefit from some re-enforcing messages.

Mrs B leaves hospital with all her medicines.

### Clinical issues and care plan

- Patient assessed by pharmacy for MCA
- Following pharmacy assessment decide not to initiate MCA but have a reminder card
- For many patients some medicines will not be required on discharge and there are opportunities for waste return to pharmacy and recycling.

### Solutions + Who can fix

- Wound care formulary
  - Nursing team with pharmacy input
- Hospital guidance on initiating MCAs
  - Pharmacy team
- Refer to Community Pharmacy for Discharge MUR
  - Hospital Pharmacy team & Community Pharmacist

### Information

- Optimising Systems and Processes of Wound Care - A QIPP resource of good practice [Link](#)
- Top Tip QIPP messages for prescribing dressings [Link](#)
- Supporting older people in the community to optimise their medicines including the use of multi compartment compliance aids (MCAs) [Link](#)
- Improving medication adherence: Resources to support local delivery [Link](#)
- Improving the patient experience through supporting medicines adherence: developing your local strategy [Link](#)
- General MUR Patient Information [Link](#)
- Collation of MUR and NMS Training Resources [Link](#)
- Hospital referral to community pharmacy: An innovators’ toolkit to support the NHS in England [Link](#)
- PrescQIPP Transfer of Care Webkit [Link](#)
- See case study page 17 in DH (2012) Improving the use of medicines for better outcomes and reduced waste – An Action Plan [Link](#)

---

*Measure: MO dashboard*  
*MUR & NMS Uptake* [Link](#)
### Discharge Home

Mrs B is discharged home with the District Nurse coming in daily to administer enoxaparin and dress wound when necessary.

#### Discharge Home

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
</table>
| Mrs B is discharged home with additional pain killers prn, bone protection and enoxaparin when the District Nurse visits she finds 5 different brands of omeprazole capsules on Mrs B’s kitchen table | What is intended regimen on discharge?  
Mrs B is unsure of which capsules to take | Discharge letter to GP needs complete information  
Medical staff and Hospital pharmacy team  
Education of the patient  
Community Nurse & Community Pharmacist  
Post-Discharge MUR  
Community Pharmacist | Keeping patients safe when they transfer between care providers – getting the medicines right [Link](#)  
The Academy of Joint Royal Colleges (working with Connecting for Health) have developed standards discharge letters (see section 4) [Link](#)  
MUR service (Target group) [Link](#) |
Readmission

Six weeks later when the District Nurse (DN) visits to dress the wound she finds Mrs B confused and wandering out on the street.

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>The District Nurse (DN) suspects a urinary tract infection (UTI), and contacts the GP who organises admission to the community hospital. Mrs B takes her medicines into the community hospital with her</td>
<td>Patient undergoes Medicines Reconciliation</td>
<td>Pharmacy–led MR Pharmacy team</td>
<td>Medicines Reconciliation Best Practice Resource and Toolkit [Link]</td>
</tr>
<tr>
<td>MSU shows sensitivity to trimethoprim and nitrofurantoin</td>
<td>Ensure bone protection is part of current medicines</td>
<td>Clinical pharmacy team re-label medicine to reflect current frequency Pharmacy team</td>
<td>ESHT Community Health Services Pharmacy team poster [Link]</td>
</tr>
<tr>
<td>Starts nitrofurantoin 100mg MR BD</td>
<td>One of her medicines (ramipril) is labelled as twice a day but she is now taking it once a day</td>
<td></td>
<td>NICE Clinical Guideline 183 Drug Allergy [Link]</td>
</tr>
<tr>
<td>Ward fails to give antibiotic</td>
<td>Mrs B is allergic to trimethoprim</td>
<td>Pharmacy team</td>
<td>Antimicrobial stewardship: Start smart - then focus [Link]</td>
</tr>
<tr>
<td></td>
<td>Ensure prescription has stop date and indication</td>
<td>Hospital policy on critical medicines Pharmacy team</td>
<td>Managing common infections: guidance for primary care [Link]</td>
</tr>
<tr>
<td></td>
<td>Public Health England (PHE) guidance 3 days in women.</td>
<td></td>
<td>Collation of Resources to Reduce the Incidence of Delayed and Omitted Medicines [Link]</td>
</tr>
<tr>
<td></td>
<td>Antibiotics on list of critical medicines.</td>
<td></td>
<td>How to Guides: Reducing the incidence of omitted medicines [Link]</td>
</tr>
</tbody>
</table>

Readmission
### Discharge to a Care Home

Mrs B is discharged to a Care Home.

<table>
<thead>
<tr>
<th>What happened?</th>
<th>Clinical issues and care plan</th>
<th>Solutions + Who can fix</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mrs B is discharged to a care home.</td>
<td>There is still a need to ensure ongoing medicines optimisation.</td>
<td>CCG or Care Home Pharmacy Team</td>
<td>Tips for 10 Top Target Areas to implement medicines management QIPP in Care Homes [Link]</td>
</tr>
</tbody>
</table>

### Suggested Further Reading

- DH (2012) Improving the use of medicines for better outcomes and reduced waste – An Action Plan [Link]
- PrescQIPP (2014) Improving medicines adherence and reducing waste [Link]
- East and South East England Specialist Pharmacy Services (2013) Supporting the DH action plan for Improving the use of medicines for better outcomes and reduced waste [Link]