Regular review is needed for medicines optimisation

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This is the third in a series of articles highlighting points raised in the King’s Fund report on polypharmacy. This article highlights issues relating to medicines optimisation.

Ten top tips for safer prescribing

1. Keep yourself up-to-date in your knowledge of therapeutics, especially for the conditions you see commonly.
2. Before prescribing, make sure you have all the information you need about the patient, including co-morbidities and allergies.
3. Before prescribing, make sure you have all the information you need about the drug(s) you are considering prescribing, including side-effects and interactions.
4. Sometimes the risks of prescribing outweigh the benefits, and so before prescribing think: ‘Do I need to prescribe this drug at all?’
5. Check computerised alerts in case you have missed an important interaction or drug allergy.
6. Always actively check prescriptions for errors before signing them.
7. Involve patients in prescribing decisions and give them the information they need in order to take the medicine as prescribed, to recognise important side-effects and to know when to return for monitoring and/or review.
8. Have systems in place for ensuring that patients receive essential laboratory test monitoring for the drugs they are taking, and that they are reviewed at appropriate intervals.
9. Make sure that high levels of safety are built into your repeat prescribing system.
10. Make sure you have safe and effective ways of communicating medicines information between primary and secondary care, and acting on medication changes suggested/initiated by secondary care clinicians.

Table 4. Medicines optimisation and safe prescribing

The King’s Fund report on polypharmacy produced a number of interesting aspects that the authors discuss in this series of articles. The first two articles discussed the epidemiology of polypharmacy and the distinction between appropriate and problematic polypharmacy. In this edition, we discuss how the principles of medicines optimisation can be harnessed to help with the challenges presented by multimorbidity and polypharmacy.

NICE has defined medicines optimisation as ‘a person-centred approach to safe and effective medicines use, enabling people to obtain the best possible outcomes from their medicines’. However they point out that there is no formally agreed definition. There has been a move away from the term ‘medicines management’, with medicines optimisation implying greater patient engagement and focusing on the actions and collaboration of professionals across all health and social care settings.

Medicines optimisation can apply to all aspects of the selection, procurement, delivery, prescription, administration and review of medicines. This includes clinical assessment, enabling informed patient choice, monitoring and review in individual patients, medicines delivery services, review of repeat prescribing systems, clinical audit, health education, risk management, disease prevention and the development and use of formularies and guidelines. Here we concentrate on some specific issues that are particularly important for general practice.

Medicines optimisation and the medication review

Medication review is a fundamental element of enhancing the management of people on multiple medications. It has been described as, ‘a structured, critical examination of a patient’s medicines with the objective of reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication related problems and reducing waste’.

Medication reviews should consider a number of factors including clinical efficacy, risk/benefit ratio of the treatment, potential for drug interactions, adverse effects, drug monitoring and patient adherence.

Patients should be given relevant information about their medicines and involved in the decision-making process, including establishing the acceptability of
treatment and consistency with their beliefs and expectations. Additional drugs should ideally be considered a trial of treatment; it is important to review the therapeutic and adverse effects and acceptability to the patient before further prescriptions are issued or an item is designated as a ‘repeat’. The potential to stop medications should also not be overlooked.

Reviews should be conducted on a regular basis. Where things are relatively straightforward, reviews can be done as part of normal follow-up consultations. In more complex cases, particularly where there is polypharmacy, it is important to find ways of ensuring that adequate time is given to medication review so that discussion around medicines does not get squeezed into the final couple of minutes of the consultation. It helps to make it clear to patients that these consultations are primarily for the purposes of reviewing medications.

Additional useful options include involving specifically trained pharmacists with more complex medication reviews, and asking patients to bring all their medicines (including over-the-counter and herbal remedies) along to the surgery.

The tasks of medication review are described in Table 1.

### Medicines optimisation and repeat prescribing

Getting repeat prescribing right, alongside medication reviews is a vital part of medicines optimisation, and is crucial in polypharmacy. Repeat prescribing is widespread and growing. A recently published study examining practices in West Yorkshire in 2012, found 77 per cent of items were repeats, with a mean of 13 items per patient per year. This had doubled over 20 years (from 5.8 items per patient). At least one repeat medicine was prescribed to 43 per cent of the population, and to over 75 per cent of those aged over 60 years.

Given the scale of repeat prescribing, concern has been raised over a lack of relevant agreed processes and standard operational procedures. A framework for repeat prescribing is provided in Table 2. Ideally, repeat prescriptions should be signed by the doctor most familiar with the

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**Table 1. Tasks of medication review**

<table>
<thead>
<tr>
<th>Check that</th>
<th>Consider</th>
<th>Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>the medication prescribed is (still) appropriate for the patient’s needs</td>
<td>drug interactions</td>
<td>information pertinent to any decisions made</td>
</tr>
<tr>
<td>the medication is effective for the patient</td>
<td>side-effects</td>
<td>Read code for the level of medication review conducted</td>
</tr>
<tr>
<td>the medication is a cost effective choice (is there an alternative)</td>
<td>adherence</td>
<td>proposed follow up</td>
</tr>
<tr>
<td>any required monitoring has been done or arrangements are in place</td>
<td>over-the-counter and complementary medicines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lifestyle and non-medicinal interventions</td>
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<td></td>
<td>unmet need</td>
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<td></td>
<td>stopping medication</td>
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**Table 2. The repeat prescribing process and medicines optimisation**

<table>
<thead>
<tr>
<th>Authorising repeat prescriptions</th>
<th>Dealing with requests for repeat prescriptions</th>
<th>Deciding if the repeat prescription should be generated</th>
<th>Prescription production, signing and return to patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only those qualified to prescribe should be allowed to put medications on repeat prescription</td>
<td>Patients need to know how the practice repeat prescription works and what the rules are</td>
<td>An administrative check needs to be done to determine:</td>
<td>Most repeat prescriptions are generated electronically and there are significant safety benefits to this</td>
</tr>
<tr>
<td>An appropriate review date needs to be set taking account of the need for monitoring of therapeutic benefits and potential adverse effects</td>
<td>Requests must be dealt with accurately, securely and within an agreed timeframe, eg 48 hours</td>
<td>- is the drug on the repeat prescriptions list?</td>
<td>A qualified prescriber needs to check that the prescription is safe (with reference to the patient’s records where appropriate) before signing</td>
</tr>
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<td>With paper-based systems, patients should be encouraged to use the repeat prescription request slip rather than giving oral requests</td>
<td>- is the drug within its review date?</td>
<td>- is the request earlier (or later) than expected?</td>
<td>If a review is required the patient should be advised that an appointment should be made</td>
</tr>
<tr>
<td></td>
<td>- If in doubt, the qualified prescriber should be asked to make the decision about whether a prescription should be generated</td>
<td></td>
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<td></td>
<td>Prescription production, signing and return to patient</td>
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Case history: reviewing patients on discharge from hospital

Ernest is a 70-year-old man who has rheumatoid arthritis (RA) and a history of myocardial infarction two years ago. He is under the care of rheumatology regarding his arthritis. He is also on treatment for high blood pressure and one week ago was admitted with a chest infection. Having been discharged from hospital he comes to see you to discuss his admission and for a medication review.

Listed on the computer repeat prescribing system are:
- Ibuprofen 400mg tablet, one tablet three times a day, for joint pain
- Paracetamol 500mg tablet, two tablets as required for pain
- Ramipril 10mg capsule, one capsule daily, for high blood pressure and to help the heart
- Diltiazem m/r 60mg tablet, one tablet twice daily, for high blood pressure and to help the heart
- Aspirin 75mg tablet, one tablet daily, for the heart
- Clopidogrel 75mg tablet, one tablet daily, for the heart
- Simvastatin 40mg tablet, one tablet daily, to lower cholesterol
- Methotrexate 10mg tablet, one tablet weekly, for rheumatoid arthritis
- Folic acid 5mg tablet, one tablet weekly, for rheumatoid arthritis
- Alendronate 70mg tablet, one tablet weekly, to keep the bones strong
- Calcium (600mg) and vitamin D (colecalciferol 400 units) chewable tablet, two tablets daily, to keep the bones strong

The discharge slip from the hospital has these medications on it:
- Ibuprofen 400mg tablet, one tablet, three times a day
- Paracetamol 500mg tablet, two tablets as required
- Ramipril 10mg capsule, one capsule daily
- Diltiazem m/r 60mg tablet, one tablet twice daily
- Aspirin 75mg tablet, one tablet daily
- Lansoprazole 30mg capsule, one capsule at night
- Alendronate 70mg tablet, one tablet weekly
- Calcium (600mg) and vitamin D (colecalciferol 400 units) chewable tablet, two tablets daily
- Clarithromycin tablet 500mg, one tablet twice daily for 7 days

The discharge slip also states that he is receiving etanercept injections.
- You ask him about the methotrexate and whether the hospital was aware of this, and he is unsure. He has been getting regular prescriptions from the practice for methotrexate and folic acid for several years but the hospital organise his blood tests. He assures you he has been taking his weekly tablets but seems confused about the difference between methotrexate and alendronate. He takes the alendronate and calcium and vitamin D for osteoporosis related to RA.
- He tells you he started getting the etanercept injections eight months previously. You find no record of this in the practice records.
- He does not know why the hospital stopped his simvastatin but as he had some at home he restarted this when he was discharged from hospital as he was told he needs to take this for the rest of his life.
- He does know that the hospital stopped his clopidogrel and was advised this had only been intended for short-term use following his myocardial infarction.
- You look for a recent test of kidney function but as the hospital has been doing his blood tests the last record of this is from two years ago.

Comment

This is a case illustrating some of the pitfalls that occur when a patient receives care from several doctors and moves between primary and secondary care.
- It transpires that the methotrexate should have been stopped when he started etanercept but there has been no clear communication to the practice about this. If the hospital requests that you prescribe disease modifying drugs such as methotrexate this should be under a shared care agreement with a clear description of responsibilities. It is essential you are informed if the drug is stopped or treatment changed.
- If you sign prescriptions for methotrexate you are responsible if things go wrong so you must know the results of the monitoring blood tests. You should not sign these prescriptions unless the results are known to you and you are sure they are normal. The same applies to prescriptions for ramipril as you need to check renal function at least annually.
- It is likely that the hospital stopped his simvastatin while he was taking clarithromycin because of the drug interactions. He should not have restarted this but this bit of information has either not been conveyed or not registered with him. In any case, as he is on diltiazem he should not be on simvastatin 40mg daily because there is also a potential drug interaction with this. It would be best if he is changed to atorvastatin to reduce this potential.
- It is unclear why he has been started on lansoprazole, but many people come out of hospital taking a proton pump inhibitor. It is probably a good thing to continue, possibly at a lower dose, as he is taking an NSAID and aspirin (and was also on clopidogrel) and gastroprotection is necessary. This does increase his ‘tablet burden’ however. It might be a good thing to see if ibuprofen can be stopped or used intermittently, particularly as he is also on an ACE Inhibitor as the combination can lead to kidney damage. Preferably the paracetamol could be used regularly for analgesia, if this is required.
- The biological treatments for rheumatoid arthritis like etanercept are particularly tricky in primary care as they are usually prescribed and administered under supervision of secondary
Case history: reviewing patients on discharge from hospital

Care services. They are associated with increased susceptibility to infection (and may be implicated in this case). There should be a system for noting them on the GP system so that any potential adverse effects can be considered.

• Problems highlighted here need to be considered as significant events and reflected on within the practice. If necessary advice from a pharmacist prescribing adviser should be sought.

• These communication problems need discussing with the hospital and the rheumatology department. The systems for discharge medication and for shared care need urgent review and improvement.

• The deficiencies in communication and the system as a whole should also be raised with the CCG or Health Board.

• When mistakes occur it is vital that these are recorded and reported as significant events to avoid future errors.

Medication errors should be reported through local risk management systems and be fed into the National Reporting and Learning System (NRLS) in England, and equivalent systems in the devolved countries.

This type of patient needs very careful supervision and regular ‘medicines optimisation’. He is at particularly high risk of medication errors because of high risk drugs, co-morbidity and polypharmacy.

Safer prescribing

One in 16 hospital admissions are due to adverse drug reactions, with a third being considered avoidable and 2 per cent of people admitted dying as a result. The risk of harm from medicines is greater where there is polypharmacy. A recent systematic review identified seven drugs or drug classes that cause almost half of serious medication errors (methotrexate, warfarin, NSAIDs, digoxin, opioids, aspirin and beta-blockers), and concluded that focusing preventative measures on prescribing of these drugs could reduce hospitalisation, disability and death.

The GMC commissioned PRActiCe Study examined the prevalence and causes of prescribing errors in general practice. It found that 1 in 20 prescription items contained either a prescribing or monitoring error, affecting 1 in 8 patients.

Although the majority of errors were judged to be either of mild or moderate severity, 1 in 550 of all prescription items contained an error judged to be ‘severe’ which, given the huge number of items prescribed, is substantial. The study identified a number of contributory factors, and advised that defences against error should focus on GP training, continuing professional development for GPs, clinical governance, effective use of clinical computer systems, and improving safety systems both within general practices and at the interface with secondary care. Specific training in polypharmacy should be considered.

Communication

Communication at the interface between primary and secondary care (and vice versa) is an important cause for concern in relation to medication optimisation, particularly in cases of multimorbidity and polypharmacy where there are many people involved in a person’s care and increased clinical complexity. This may result in medication errors or be confusing for patients. Medicines reconciliation is the formal process of establishing and documenting a consistent, definitive list of medicines across transitions of care, then rectifying any unintended discrepancies. This process should not be delegated to non-clinical staff, as clinical knowledge and judgement may be required, and formal medication review with the patient may be considered necessary.

Conclusion

This article has covered a number of important issues related to medicines optimisation in polypharmacy. Particularly important challenges are individualising recommendations from the range of clinical guidelines pertinent to a person with several morbidities, and better understanding individuals’ differing beliefs and values in order to reach shared decisions about care. This has important workload implications, and may require specific training and education in polypharmacy for healthcare professionals.

References


Declaration of interests

None to declare.

Dr Duerden is a part-time GP in North Wales, and clinical senior lecturer, Bangor University and Dr Payne is clinical lecturer in general practice, University of Cambridge, and honorary consultant clinical pharmacologist.