A Practical Approach to Reducing Polypharmacy and Optimising Drug Therapy

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Polypharmacy itself should be conceptually perceived as a “disease” with potentially more serious complications than those of the diseases these different drugs have been prescribed for

Doran Gafinkel 2010
Context

• Clinical pharmacists working collaboratively within multidisciplinary teams

• Frail older people (BGS definition)
  – Aged over 75, often over 85, with multiple diseases, which may include dementia.
  – Tend to present to hospital with symptoms such as falls, immobility and confusion
  – Their functional reserve is reduced making them additionally vulnerable to developing complications while in hospital
A structured approach to reducing polypharmacy

• Evidence is lacking for the best approach

• Good examples
  – Garfinkel et al. The Good palliative-geriatric algorithm
  – Steinman M, Hanlon J. Managing medications in complex elders: There’s got to be a happy medium. JAMA 2010;304(14):1592-1601
A structured approach to reducing polypharmacy: Key stages

1. Establish the patient's overall care goals
2. Gather information: medication and conditions
3. Explore the general risks and benefits for each drug in older people - Identify PIMs
4. Explore the specific risks and benefits for each drug in the context of individual patient
5. Make changes and monitor review
Establish the patient’s overall care goals

- Starts with the patient
- What outcomes are we working towards with the patient?
- Medicines optimisation goals must fit into overall goal, not work against it
Case scenario

Independence versus CVS risk
Frail 87 yr old, in care home
• RESPITE, but desperate to go home
• Hx falls and # ⇒ now mobilising with Zimmer frame
• Rx ⇒ antihypertensives x3, Cocodamol 30/500
• BP: 110/53
• Stop antihypertensives x2

Palliative care versus CVS risk
AG 80 yrs in care home.
• Ibuprofen 400mg tds + Co-codamol for very painful joint
• Review use of NSAID
• Very slowly palliative so continue NSAID
Gather information on drugs & conditions

• Medicines reconciliation is key!
  – What patient is ACTUALLY taking vs what is prescribed?
  – Are they able to take each drug and does it fit into their daily activities?
• What conditions are active, inactive, time bound, resolved?
• What is bothering the patient most?
• Is there a valid indication for each drug?
• Are symptoms vague? subjective versus objective?
• What perceived and actual harms or benefits are they experiencing for each drug in relation to their condition? Ask general and specific Qs!
• Can new symptoms/conditions be linked with time medication was started? Prescribing cascade?
Mrs EE, 90yrs old

- Lives with daughter
- Forgetful, otherwise good health
- 17 medicines, daughter thinks they are too many
- Only taking 4 laxatives
- Doesn’t like BP tabs⇒ thinks they make her drowsy
- Doesn’t remember to take afternoon dose

**Discontinued**
- Intralgin gel
- Fybogel sachets
- Vitamin BPC caps
- Flixonase spray
- Doxazosin 2mg
- Dipyridamole (b/4 NICE)
- Movicol
- NaCl irrigation solution

**Continued**
- Thyroxine 50mcg
- Bendroflumethiazide 2.5
- Perindopril
- Senna
- Lactulose
- Aspirin
- Digoxin
- Simvastatin
- Timoptol eye drops
Prescribing cascade \(\Rightarrow\) Polypharmacy

- Mrs AY, 82 yr old female in nursing home
- Very painful, oozing leg ulcers requiring 1-2ce daily dressings
- Left leg swollen and very eczematous
- Speech incoherent and very sleepy
- Limited mobility, mostly chair bound
<table>
<thead>
<tr>
<th></th>
<th>Medication</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Granuflex dressing</td>
<td>Arterial and venous leg ulcers</td>
</tr>
<tr>
<td>2.</td>
<td>Allevyn dressing</td>
<td>Venous leg ulcer</td>
</tr>
<tr>
<td>3.</td>
<td>Fucidin HC cream</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Bumetanide 1mg om</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>MST tablets 20mg bd (CD)</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Oramorph 20mg/5ml solution (CD)</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Co-codamol 30/500mg</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Paracetamol 500mg 2qds prn</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Diclofenac 50mg tds</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Anusol HC cream prn</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Movicol sachets 2om</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Lactulose 15ml tds</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Senna tablets 2on</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Amitryptiline 75mg on</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Atenolol 50mg om</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Bendroflumethazide 2.5mg om</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Simvastatin 40mg od</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Aspirin 75mg dispersible om</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Omeprazole 30mg om</td>
<td></td>
</tr>
</tbody>
</table>
8 weeks later

- Venous leg ulcer completely healed & arterial ulcer reduced
- AY sitting up in chair and chatting, able to walk to dining room

Final medication

1. Opsite dressing for arterial ulcer
2. Paracetamol 500mg 2qds prn
3. Lactulose 15ml tds
4. Amitryptiline 25mg on (reducing dose)
5. Atenolol 50mg om
6. Bendroflumethazide 2.5mg om
7. Simvastatin 40mg od
8. Aspirin 75mg dispersible om
9. Omeprazole 15mg om
10. Anusol HC cream prn (awaiting haemorrhoidectomy)
Medicine reconciliation is key!

- ME, 90 yr old, recent hosp admission re Hip # conservative management
- Housebound, breathless, swallowing difficulties

<table>
<thead>
<tr>
<th>Prescribed</th>
<th>Taking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-codamol 2qds- pain</td>
<td>2 prn occasionally, pain resolved</td>
</tr>
<tr>
<td>Movicol 1bd</td>
<td>1om (on toilet all day so adjusted the dose herself)</td>
</tr>
<tr>
<td>Senna 2bd</td>
<td>1od</td>
</tr>
<tr>
<td>Docusate 100mg 2bd</td>
<td>2bd</td>
</tr>
<tr>
<td>Seretide accuhaler 500 2pd</td>
<td>Not taking, dont like device</td>
</tr>
<tr>
<td>Tiotropium 1od</td>
<td>Not sure of purpose</td>
</tr>
<tr>
<td>Ventolin 2qds prn</td>
<td>2bd</td>
</tr>
</tbody>
</table>
Explore general risks & benefits for each drug

Every drug is guilty until proved innocent
Every condition is drug related until proven otherwise

• Apply tools to identify Potentially inappropriate meds
  – STOP/START tool
  – Beers Criteria (updated 2012)
  – Drug effectiveness summary (NHS Highland)
  – MAI tool

• Use your clinical judgement and experience
  – Does each drug have a matching indication, is the indication still valid?
  – Does the drug produce limited benefit for that indication
  – Are the benefits outweighed by unfavourable SE in OP
  – Is there evidence or guideline to support its use in OP
Inability to apply existing knowledge to a new and complex situation contributes more often to the occurrence of adverse events in older than younger patients.

Merten Het al. Scale, nature, preventability and causes of adverse events in hospitalised older patients. Age Ageing 2012; 41 (6)
Risks vs benefits in context of patient

- Objective is to ensure that EACH medicine is tailored to the individual patient’s
  - Circumstances
  - Clinical reality and social situation
  - Morbidities
  - Preferences and ability to comply

- Use prognostic tools for shortened life expectancy (NHS Highland) and clinical judgement
  - Does each drug fit in or conflict with overall goal
  - Will patient live long enough to benefit
If shortened life expectancy, query..

- Drugs for primary prevention - no place
- Drugs for secondary prevention... if time to benefit exceeds life expectancy
  - Lipid lowering drugs
  - Prevention of fragility #
  - ACEI, ARB, BB to prevent diabetic neuropathy/ HF mortality
  - Memantine
• Use evidence available, pharmacology and clinical judgement to predict risks
  – **Low** ⇒ multivitamin, quinine, if patient isn’t taking drug anyway!
  – **Moderate** ⇒ low dose antipsychotic
  – **High or difficult to determine** ⇒ hormone replacement, multiple anti-hypertensives

• Sometimes the only way to know if drug is working is to stop & monitor!
• Enlist the help of peers or refer to other specialists
Guilty or not guilty

Guilty
• Discontinue
• Reduce dose/frequency/prn
• Substitute with a safer drug/formulation, schedule
• Wait and see, review after a period

Not Guilty
• Continue
Make changes

• Prepare a range of options for each drug
• Present in a simple format
  – by drug (ICARUS grid)
  – By group of drugs to treat a condition
  – Be clear what action to take for each drug
• Withdraw slowly
• Face to face with prescriber is best, but not always possible
• Follow up with written summary highlighting rationale, agreed action for each drug change and monitoring
## Icarus Grid - Example

**Indication?**

**Continuing problem?**

**Appropriate dose?**

**Reduction possible?**

**Uncontrolled symptoms?**

**See again?**

<table>
<thead>
<tr>
<th>Drug and Dose</th>
<th>Indication</th>
<th>Continuing Problem?</th>
<th>Appropriate Dose?</th>
<th>Reduction Possible?</th>
<th>Uncontrolled Symptoms?</th>
<th>See Again?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisinopril 10mg daily</td>
<td>Hypertension</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>1m weekly BP till review</td>
</tr>
<tr>
<td>Simvastatin 40mg noce</td>
<td>Secondary prevention cerebrovascular disease</td>
<td>Yes</td>
<td>Evidence base for in 85 year old with advanced dementia lacking</td>
<td>No</td>
<td>Consider stopping after discussion with staff and family</td>
<td></td>
</tr>
<tr>
<td>Amisulpiride 50mg bd</td>
<td>Behavioural problems of dementia</td>
<td>No - Staff using behavioural management. No aggressive behaviour for 6mths</td>
<td>Reduce to 50mg daily (with aim to stop altogether if possible)</td>
<td>No</td>
<td>1m with behaviour chart. Sooner sos</td>
<td></td>
</tr>
<tr>
<td>Citalopram 10mg daily</td>
<td>Depression</td>
<td>Yes</td>
<td>Consider increase to 20mg daily</td>
<td>High Cornell score Prolonged tears on daily basis, Sad affect</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Levodroxyline 100mcg daily</td>
<td>Hypothyroidism</td>
<td>Yes</td>
<td>Needs TSH check last one 14mths ago</td>
<td>12m if TSH OK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fortisips tds</td>
<td>MUST tool high malnutrition risk 12m ago</td>
<td>No</td>
<td>Has gained weight BMI&gt;20 eating well now fed by staff</td>
<td>Stop</td>
<td>Monitor weight monthly &amp; review 3m</td>
<td></td>
</tr>
</tbody>
</table>
Convincing prescribers to make changes

Don’t always expect a pat on the back!
• Easy to start drugs but difficult to stop
• Easier to maintain the status quo
  – little evidence/guidance on stopping drugs in older people
  – withdrawal in older people can be unpredictable & risky
  – too much effort to monitor closely
• Reluctant to stop drugs started by specialists or where there is a +ve guideline recommendation
• Medico legal reasons as little or no published data re safe withdrawal
Monitor and Review

• Be clear about what monitoring is needed and ensure its in place
  – Look out for toxicity, benefits
  – Look out for non specific adverse effects e.g. worsening of geriatric syndromes like falls, dementia, confusion, urinary incontinence

• Review at certain date or ongoing basis

• Inform others who need to know about changes made esp. if no prescription will follow
Reducing polypharmacy is everybody’s business

Lead the process but get others involved as needed

• Focus on patients with the highest medication related risks and morbidities

• For individual patients, focus on the drugs with the highest risks or highest benefits

• Share the workload with others e.g dieticians/sip feed, TVN/ dressing, incontinence adviser/antiholinergics, CMHT/ antipsychotics, sleep clinics, pain clinics etc

• Patients, Relatives, carers, community pharmacists, OTs nurses etc can monitor drug effects and feedback
Further reading

1. NHS Highland. Polypharmacy: Guidance for prescribing in frail elderly 2011
4. O’Mahony, O’Connor. Pharmacotherapy at the end-of-life. Age and ageing 2011;40;419-22
Task for the participants
Based on the patients overall care goals & information provided
• Explore the **general** risks and benefits for each drug in older people
• Explore the **specific** risks and benefits in the patient’s context
• Complete an ICARUS grid for each patient

Task for the facilitators
• Get discussion going and ensure that ICARUS grid is completed on time
• Each group to feedback on how and why they have made the specific drug recommendations