Optimising Safe & Appropriate Medicines Use and Deprescribing

Katie Smith, Director,
East Anglia Medicines Information Service
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Objectives

• Background
• How & why the OSAMU document was developed
• Use
• Deprescribing
• Future plans
Not a new concept…

“it is an art of no little importance to administer medicines properly: but, it is an art of much greater and more difficult acquisition to know when to suspend or altogether to omit them”.

Philippe Pinel, psychiatrist (1745-1826)
Background

• WHO, 2010
  – 50% of medicines prescribed, sold, dispensed inappropriately
  – 50% of patients don’t take medicines correctly
  – 50% of countries have no basic policy for rational medicines use
Background

- York Health Economics Consortium, 2010
  - £8.8 billion spend on primary care medicines
  - 900 million prescription items dispensed
  - Wasted medicines cost ~ £300 million BUT half avoidable
  - NHS cost of not taking medicines properly ~£500 million
Background

- Sept 2010 – East of England Medicines Efficiency Programme meeting
- Practical evidence based guidelines to stop medicines (rational discontinuation?)
  - Focus on end of life
  - Prescriber support (Large amount of time spent looking for information)
  - Could reduce medicines waste in primary care
- Focus on statins, bisphosphonates, dipyridamole ..
- Build on work done by PCT in Cambridgeshire
Literature search (1)

- Growing opinion that drug cessation in complex older adults warranted in certain situations i.e. falls, delirium, cognitive impairment, end of life
- Very little info on how to actually stop


- BUT patients & doctors do agree about stopping meds

Literature search (2)

- Many tools to review PIMs / PIDs / PIP (potentially inappropriate medicines / drugs / prescribing)
- 3 long standing tools – American, Canadian, UK
- Beers, IPET, STOPP-START
Beers Criteria

- American
- Dr Mark Beers, junior doctor, 1991
- Updated 1997, 2003, 2012 (every 3 yrs from now on)
- Delphi technique, 11 experts, consensus
- Inappropriate prescribing: potential risks outweigh the benefits
- Focus on medicines to be avoided by the elderly living in nursing homes
- 1991: 30 classes/meds, 2012: 53 classes/meds

# Beers Criteria example

<table>
<thead>
<tr>
<th>Drug class or disease</th>
<th>Rationale</th>
<th>Recommendation</th>
<th>Quality of Evidence</th>
<th>Strength of recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PIMs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antispasmodics</td>
<td>Highly anticholinergic, uncertain effectiveness</td>
<td>Avoid</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
<tr>
<td><strong>PIMs due to concomitant diseases/conditions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syncope &amp; alpha blockers</td>
<td>Increases risk of orthostatic hypotension or bradycardia</td>
<td>Avoid</td>
<td>High</td>
<td>Weak</td>
</tr>
<tr>
<td><strong>PIMs to be used with caution</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin for primary prevention of CVD</td>
<td>Lack of evidence of benefit vs. risk in ≥ 80yrs</td>
<td>Use with caution in adults aged ≥ 80 yrs</td>
<td>Low</td>
<td>Weak</td>
</tr>
</tbody>
</table>
IPET

- Canadian
- Improving Prescribing in the Elderly Tool
- Published 2000, earlier work 1997
- 1997: Delphi technique, 32 experts, consensus, 71 inappropriate practices
- Focus on elderly patients in hospital
- IPET = 14 PIP practices to check for on each chart, <2 mins/chart, reliable

# IPET examples

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean clinical significance rating</th>
<th>Risk to patient</th>
<th>Alternative therapy</th>
<th>% of panel who agreed with alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta blocker to treat hypertension in pts with history of asthma or COPD</td>
<td>3.83</td>
<td>May exacerbate respiratory disease</td>
<td>Another class of antihypertensive</td>
<td>94%</td>
</tr>
</tbody>
</table>

**IPET statement:** beta blocker and chronic obstructive airways disease

<table>
<thead>
<tr>
<th>Practice</th>
<th>Mean clinical significance rating</th>
<th>Risk to patient</th>
<th>Alternative therapy</th>
<th>% of panel who agreed with alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term prescription of NSAIDs for OA</td>
<td>3.22</td>
<td>May cause gastropathy, bleeding and salt &amp; water retention</td>
<td>Paracetamol</td>
<td>100%</td>
</tr>
</tbody>
</table>

**IPET statement:** long term use of NSAIDs for osteoarthritis
STOPP-START

- UK & Ireland, 2007
- Problems with Beers & IPET
- Screening Tool of Older Persons Prescriptions
- Screening Tool to Alert doctors to Right Treatment – first document to do this
- Focus on patients aged >65 yrs
- Delphi technique, 18 experts, consensus
- 65 STOPP, 22 START
- Reliable
- Comparison vs. Beers 2012

STOPP-START examples

STOPP

- Loop diuretic for ankle oedema, no clinical signs of HF (no evidence of efficacy, compression hosiery more appropriate)
- PPI for peptic ulcer disease at full therapeutic dose for > 8 wks (dose reduction or earlier discontinuation indicated)

START

- ACE inhibitor following acute MI.
- ACE inhibitor for chronic heart failure.
- Antiplatelet therapy in diabetes mellitus if coexisting CVD risk factors present.
Literature search (3)

- Archives of Internal Medicine – Less is more series
  - Discontinuing multiple medicines study
  - Principles of conservative prescribing
- 2011 search vs. 2013 search
- Same classes of PIMs world wide!

Garfinkel D. Feasibility Study of a Systematic Approach for Discontinuation of Multiple Medications in Older Adults - Addressing Polypharmacy. Arch Intern Med 2010;170 (18):1648-1654
NICE ‘do not do’ list

Search the NICE ‘do not do’ recommendations database

You can search the NICE ‘do not do’ recommendations database by:
- typing in a specific term in the ‘do not do’ recommendations box
- selecting an appropriate topic
- selecting the type of source guidance.

To see the full list of all NICE ‘do not do’ recommendations leave all the fields blank and click the ‘Search’ button.

Search ‘do not do’ recommendations

- ‘Do not do’ recommendation
- ‘Do not do’ by topicPlease select one
- ‘Do not do’ by sub-topicPlease select one
- ‘Do not do’ by guidance typePlease select one

Search
Other useful literature

Other sources

- BNF / SPCs
- CKS
- DTB
- NPC
- Dr Viveca Kirthisingha, Consultant Community Geriatrician, Cambridgeshire Community Services
- Colleagues with clinical knowledge – GP, PCT meds management leads, community service pharmacist, clinical/hospital pharmacists, MI pharmacist
OSAMU document

- Short – but enough detail/practical info to be useful
- All statements referenced & reference list included
- BNF order
- Groups of medicines rather than each individually
- Covering statement
- Clinical and cost risk
- Accompanying PIL
- Briefing (quick read - 2 sides of A4)
Optimising Safe and Appropriate Medicines Use

The NHS spends £8.8 billion on medicines in primary care per year and in dispenses over 900 million prescription items. It is estimated that medicines worth over £300 million are wasted each year, of which at least half is avoidable. The cost to the NHS of people not taking their medicines properly and not getting the full benefits to their health is estimated at over £500 million a year. In 2010, the World Health Organisation stated that more than 50% of all medicines are prescribed, dispensed or sold inappropriately, and half of all patients fail to take medicines correctly. The overuse, underuse or misuse of medicines harms people and wastes resources. More than 50% of all countries do not implement basic policies to promote rational use of medicines. 4

Articles published in both American and British journals have encouraged prescribers to consider strategies for appropriate, safe and judicious prescribing. Prescribing principles should be considered to ensure medicines are used optimally. These include use of non drug therapies; being cautious about unproven drug uses; remaining vigilant to adverse effects of medicines and educating patients about these effects and monitoring which is required, so therapy is not stopped unnecessarily; exercising caution regarding new drugs; obtaining unbiased information before making a decision on whether to prescribe or not and sharing decisions with patients around adherence and whether to start or stop medicines. 5,6

When speaking to patients about their medicines, health care professionals should review whether therapy is appropriate and still being adhered to. Pharmacy based services such as medicines use reviews are adherence-centred reviews with patients on multiple medicines, particularly those receiving medicines for long term conditions. Clinical medication reviews are a 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. 7

Medicines optimisation may include stopping a treatment. Medicines should be stopped on an individual basis if –
- there is no valid or relevant indication for prescribing as assessed by changes in symptoms, signs, laboratory and diagnostic test results. 8
- the known possible adverse drug reactions outweigh the possible benefits. 8
- there is a risk of cumulative toxicity if particular medicines are taken together. 9
- the patient is choosing to not take/use the medication as prescribed or intended. 10
- unlicensed medicines ('specials') are being prescribed when an alternative medicine or formulation will provide the same therapeutic benefit. 11
- non-drug measures can provide benefit, without adverse effects. 12

If a medicine is no longer considered appropriate and is to be stopped, this should be discussed and a decision agreed between the prescriber and patient. Good communication is essential for successful withdrawal of therapy that is no longer considered appropriate. 13
This information should be used as a pragmatic decision aid, in conjunction with other relevant, patient specific data. If therapy is considered appropriate, it should be continued. The clinical risk classifies the risk of continuing therapy based on maintenance doses. The cost risk identifies areas where total spend in primary care is high (high volume of low cost medicines or low volume of high cost medicines). The clinical and cost risk highlight areas which may be considered as a priority to focus on.

### BNF Chapter 1 - Gastrointestinal system

<table>
<thead>
<tr>
<th>BNF class / Drugs</th>
<th>Considerations to optimise medicines use</th>
<th>Clinical Risk</th>
<th>Cost Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antispasmodics</td>
<td>How long have they been prescribed? Avoid long term use, highly anticholinergic preparations, uncertain effectiveness. 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2 blockers / PPIs</td>
<td>Check if there is a valid indication for prescribing e.g. is an NSAID still being taken? 13 There has been no proven peptic ulcer, GI bleeding or dyspepsia for 1 year. Continued use may contribute to C difficile infection. 15</td>
<td>Amber</td>
<td>PPI: Red</td>
</tr>
<tr>
<td>Laxatives</td>
<td>Previous use of opioid analgesics has reduced or stopped. Regular bowel movements occur without difficulty. Patient is eating &amp; drinking and has an adequate fluid intake. If &gt;1 laxatives are used, reduce and stop one at a time slowly. Do not stop treatment abruptly. Reduce stimulant laxative first, increase the dose of the osmotic laxative if necessary. Restart laxatives if relapse occurs. 16</td>
<td>Amber</td>
<td>Amber</td>
</tr>
</tbody>
</table>

### BNF Chapter 2 - Cardiovascular system

<table>
<thead>
<tr>
<th>BNF class / Drugs</th>
<th>Considerations to optimise medicines use</th>
<th>Clinical Risk</th>
<th>Cost Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>If dose&gt;25mg/day, the risk of hyperkalaemia is higher in older adults with heart failure, especially if taking an NSAID, ACE inhibitor, angiotensin II receptor blocker or potassium supplement. 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiarrhythmics</td>
<td>Rate control has better balance of benefits and harms than rhythm control for most older adults. Amiodarone is associated with multiple toxicities (thyroid, pulmonary, QT prolongation). 14 Check all monitoring is being done.</td>
<td>Amber</td>
<td></td>
</tr>
<tr>
<td>Antihypertensives - ACE inhibitors, beta blockers, angiotensin II receptor blockers, diuretics, calcium channel blockers</td>
<td>Check if there is a valid indication for prescribing, is the BP at a normal level or too low? 16 Do the known possible adverse drug reactions outweigh the possible benefits e.g. orthostatic hypotension, CNS effects, risk of falls; loop diuretic for ankle oedema – would compression hosiery be more appropriate? 14,18 If &gt;1 antihypertensives are used, stop 1 at a time, maintaining the dose of the others without change. Restart antihypertensives if BP increases above 90 mm Hg diastolic and/or 150mm Hg systolic (160mm Hg if no organ damage). 8 Withdraw alpha agonists gradually to avoid severe rebound hypertension. 14</td>
<td>ARB &amp; CCB: Red</td>
<td>ACEI &amp; BB: Amber</td>
</tr>
</tbody>
</table>
Patient Information Leaflet

Optimising safe and appropriate medicines use

This leaflet is to help you understand why your doctor is reviewing the medicines you take to check they are still appropriate to treat your conditions.

Medicines are prescribed to treat symptoms or diseases. When a medicine is prescribed for you, you should be given information on possible side effects, how long to take it for and when to stop taking it.

For each of the medicines you are taking, you should know which of the following applies:

- The medicine should only taken for a specific number of days to treat a particular condition, for example, antibiotics to treat a bacterial infection.
- The medicine may need to be continued for a number of weeks or months and then stopped when symptoms are reduced or the disease is under control, for example, iron tablets for anaemia.
- For conditions, like asthma, diabetes and high blood pressure you may have to keep taking your medicines every day to keep the signs and symptoms of the disease under control.

It is good practice for your doctor(s) to review the medicines you are taking and check that you are taking the medicine, it is treating the condition and not causing any side effects.

Your doctor may suggest stopping a medicine because –
- Your health or a particular condition has improved or changed and it is no longer needed.
- The side effects outweigh the benefits and they are making you feel unwell.
- You have chosen not to take the medicine.
- You are not able to take the medicine.
- Other treatments which do not involve medicines can be used instead.

Your doctor should involve you in any decision about your medicines. The decision to start or stop a medicine should be shared between you and your doctor and be based on your individual clinical needs, priorities and values.
Optimising Safe and Appropriate Medicines Use (briefing) - June 2013 - v3.0

Optimising Safe and Appropriate Medicines Use - Briefing

The NHS spends £23.8 billion on medicines in primary care per year and in dispensing over 900 million prescription items. It is estimated that medicines worth over £330 million are wasted each year, of which at least half is avoidable. The cost to the NHS of people not taking their medicines properly and not getting the full benefits to their health is estimated at over £500 million a year. In 2010, the World Health Organisation stated that more than 50% of all medicines are prescribed, dispensed or sold inappropriately, and half of all patients fail to take medicines correctly. The overuse, underuse or misuse of medicines harms people and wastes resources. More than 50% of all countries do not implement basic policies to promote rational use of medicines.

Articles published in both American and British journals have encouraged prescribers to consider strategies for both appropriate and safe and judicious prescribing. Prescribing principles should be considered to ensure medicines are used optimally. These include use of non-drug therapies, being cautious about unproven drug uses; remaining vigilant to adverse effects of medicines and educating patients about these effects and monitoring which is required, so therapy is not stopped unnecessarily; exercising caution regarding new drugs; obtaining unbiased information before making a decision on whether to prescribe or not and sharing decisions with patients about adherence and whether to start or stop medicines.

When dealing with patients about their medicines, health care professionals should review whether therapy is appropriate and still being adhered to. Pharmacy based services such as medicines use reviews are adherence-centred reviews with patients on multiple medicines, particularly those receiving medicines for long term conditions. Clinical medication reviews are a critical examination of a patient's medicines with the patient. Aimed at reducing the impact of medicines, minimising the number of medication-related problems and reducing waste.

Medicines optimisation may include stopping a treatment. Medicines should be stopped on an individual basis if:

- there is no valid or relevant indication for prescribing as assessed by changes in symptoms, signs, laboratory and diagnostic test results.
- the known possible adverse drug reactions outweigh the possible benefits.
- there is a risk of cumulative toxicity if particular medicines are taken together.
- the patient is choosing to not take/use the medication as prescribed or intended.
- unlicensed medicines ('specials') are being prescribed when an alternative medicine or formulation will provide the same therapeutic benefit.
- non-drug therapies can provide benefit, without adverse effects.

If a medicine is no longer considered appropriate and is to be stopped, this should be discussed and a decision agreed between the prescriber and patient. Good communication is essential for successful withdrawal of therapy that is no longer considered appropriate.

The information in the table overleaf highlights the top 10 therapeutic areas to focus on based on the clinical and cost risk of continuing therapy based on maintenance doses if it is not possible to do a full multidisciplinary medicines review.

The information should be used as a pragmatic decision aid, in conjunction with other relevant, patient specific data. If therapy is considered appropriate, it should be continued.

Prepared for PrescQIPP by Katie Smith, Director, East Anglia Medicines Information Service, June 2013. The full bulletin, including the clinical evidence and full reference list, is available at www.dh.gov.uk/en/prescqipp
Availability & promotion

• Draft document shared – not everyone positive..
• PJ - NHS Highland/Lothian polypharmacy guidance
  http://www.central.knowledge.scot.nhs.uk/upload/Polypharmacy%20full%20guidance%20v2.pdf
• PrescQIPP website
• Shared across EoE
Results from OSAMU use

- 8 care homes in Norfolk & Cambs
- During 235 medication reviews, 398 medicines safely and appropriately stopped
- Mainly antihypertensives, bisphosphonates, laxatives, PPIs, statins
- Not antipsychotics for dementia & antidementia medicines
- Multidisciplinary education tool
- Poster at the November 2012 Pharmacy Management National Forum in London
Medicines Optimisation in Complex Patients in Care Homes

Katie Smith East Anglia Medicines Information Service, The Ipswich Hospital NHS Trust and Val Shaw, Deputy Chief Pharmacist, Cambridge University Hospitals NHS Foundation Trust

**Background**

Patients in care homes often have complex medication needs due to polypharmacy and multiple conditions which may be long term. Research and practice has demonstrated the value of regular medication reviews to optimise medicines use and reduce the risk of medication errors. Optimising medicines use may result in a medicine being stopped, and often there is no information to say how to do this.

**Task**

A literature review identified research in Norway, Ireland, Israel and the USA where following application of specific criteria (e.g. BEERS, IPET, STOFF) inappropriate medications were stopped in older people. In 2011, the NICE produced 10 top tips for GPs for safer prescribing which highlighted strategies to prevent medication errors and improve prescribing. NICE have developed a ‘do not do’ recommendations database which summarises clinical practices that should be discontinued or not used routinely.

An evidence-based document – ‘Optimising Safe and Appropriate Medicines Use’, was developed as a pragmatic decision aid indicating what to consider, to optimise the use of particular medications. Information on clinical and cost risk was presented as a RAG scale based on the risk of continuing therapy with maintenance doses and aimed to highlight areas which may be considered as a priority to focus on.

**Action**

The ‘Optimising Safe and Appropriate Medicines Use’ document was used by pharmacists, geriatricians and GPs in Cambridgeshire and Norfolk when reviewing individual patients in care homes with complex medication histories from November 2011. Following a collaborative discussion with the patient, nurse and GP, considering the complex needs of each patient, medicines were optimised to give the best outcome, which included both stopping and starting medicines.

**Results**

Between November 2011 and August 2012, use of the ‘Optimising Safe and Appropriate Medicines Use’ document in 8 care homes during 235 multidisciplinary medication reviews resulted in the safe and appropriate discontinuation of 398 medicines and ensured patients were prescribed the essential medicines they required. The number of reviews undertaken and number of medicines stopped in each home are presented in figure 1. Examples of the medicines most commonly stopped are given in table 1.

![Graph](image)

Figure 1: Number of reviews and medicines stopped in care homes between November 2011 and August 2012

**Benefits**

- A reduction in:
  - polypharmacy,
  - potential interactions and side effects,
  - medicine administration time, allowing increased time for patient care,
  - medicine waste and costs,
  - the number of medicines taken.

**Barriers**

- Reluctance to stop antipsychotics for dementia and antidepressant medicines by GPs, nursing staff and relatives.

**Summary**

The development of an evidence-based, pragmatic decision aid to support healthcare professionals with safe, appropriate and judicious prescribing has demonstrated effective medicines optimisation in this complex cohort of patients. Its use allows multidisciplinary approach that has been valued by the GPs in making prescribing decisions.

It is also used as an education tool and to provide a reference source for GPs and nurses. Its use allows safe discontinuation of medicines, if appropriate, and also highlights those medicines that may need to be continued to end of life.

**References**

1. Optimising Safe and Appropriate Medicines Use, PrescQIPP, NHS Midlands & East. September 2011

www.clingov.eoe.nhs.uk/prescqipp/
Deprescribing

The future?
Deprescribing – Dutch view

- New concept – change in culture/thinking
- Stopping medicines: symptomatic or preventive
- Multimorbid patient = numerous guidelines
- Uncomfortable for prescribers? What is important to patients? Shared decision making
- Need info on risks & benefits – often lacking..

Deprescribing - French view

• Think about how to withdraw when the drug is first prescribed.
• Process of stopping is not taught at medical school or researched.
• Not considered as a high priority for clinical research funding?
• Vast majority of ADRs occur during long term use.

Montastruc J-L et al. Prescribe, but also know how to “deprescribe”. Prescrire Int 2013; 22 (140): 192
Deprescribing – Canadian view

- Ontario pharmacist has a government grant ($430,000) to develop, implement & evaluate clinical guidelines for deprescribing in primary and long term care over 3 yrs
- What to stop, how to stop or taper, what to monitor in elderly patients on polypharmacy
- Promote routine re-evaluation of medicines, how long something is needed for, changing dose with age

Deprescribing – Australian view

- Little guidance for tapering, withdrawing, discontinuing or stopping (deprescribing) in older adults with polypharmacy
- Use a structured approach – algorithm developed, but not yet validated in a clinical trial
- Process can be difficult and time consuming
- Prescribers have a responsibility to minimise potential for harm and waste of resources arising from inappropriate polypharmacy in vulnerable older patients

Scott IA ET AL. Deciding when to stop: towards evidence-based deprescribing of drugs in older populations. Evid Based Med 2013; 18: 121-4
Australian algorithm

1. Ascertain all current medications
2. Identify patients at high risk for, or, experiencing ADRs
3. Estimate life expectancy in high risk patients
4. Define overall care goals in context of life expectancy
5. Define & confirm current indications for ongoing treatment
6. Determine time until benefit for disease modifying drugs
7. Estimate magnitude of benefit vs. harm for each drug
8. Review relative utility of different drugs
9. Identify drugs that may be discontinued
10. 1 nominated clinician per patient to implement & monitor a drug minimisation plan, with ongoing reappraisal of drug utility and patient adherence
What next for me?

- Always seeking feedback from users to improve
- Be aware of new literature to update document

- Promote use across NHS Midlands & East to prescribers
- Other areas have shown interest in the document
- Community pharmacists / Hospital pharmacists?

- Explore opportunities to demonstrate the usefulness of the document
What next for you?

• Get a copy of OSAMU
• Discuss OSAMU and deprescribing with your colleagues
• Use OSAMU (or principles) in practice
• Try deprescribing…
Where to find OSAMU

http://www.prescqipp.info/

Go to ‘Our bulletins’
Choose ‘Safe and Appropriate Medicines Use’

Click on the green text, then the red download box
Further questions after today?

Please email me at –

katie.smith@ipswichhospital.nhs.uk
Thank you for listening, I hope you found this useful.

Any questions?