Reference Sources/Tools to Support the Medication Review Process

Contents (with hyperlinks to relevant references)

Approved by: NHSGGC Polypharmacy Subcommittee of ADTC
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1. Drug review process- For additional information see National Polypharmacy Guidance at http://www.qihub.scot.nhs.uk/media/459062/polypharmacy%20full%20guidance%20v2.doc

This review should be undertaken in the context of holistic care considering each medication and its impact on the individual clinical circumstances of each patient. As part of this it is important to consider the cumulative effects of medications.

Number	CRITERIA / CONSIDERATIONS	PROCESS/GUIDANCE		References / Further reading or Examples
1	**Is there a valid and current indication?** **Is the dose appropriate?**	Identify medicine and check it has a valid and current indication in this patient with reference to GGC formulary. Check the dose is appropriate (over/under dosing?)		**e.g.** PPIs- use minimum dose to control GI symptoms - risk of *c.difficile* and fracture **e.g.** quinine use- see MHRA advice re safety **e.g**. long term antibiotics
2	**Is the medicine preventing rapid symptomatic deterioration?**	Is the medicine important/essential in preventing rapid symptomatic deterioration of high day to day benefit? If so, it should usually be continued or only be discontinued following specialist advice.		**e.g.** Meds for heart failure, Parkinson's Disease Require specialist input if being altered/stopped Review of doses may be appropriate e.g. digoxin
3	**Is the medicine fulfilling an essential replacement function?**	If the medicine is serving a vital replacement function, it should continue.		**e.g.** thyroxine and other hormones
4	**Consider medication safety** **Is the medicine causing:** **- Any actual or potential ADRs?** **- Any actual or potentially serious drug interactions?**	***Contra-indicated drug or high risk drugs group***	Strongly consider stopping	Ref; National Poly Guidance see High risk medication section, STOPP list for potentially inappropriate medicines and BNF sections to target
		Poorly tolerated in frail patients? For guidance on frailty see Gold Standards Framework	Consider stopping	
		Particular side effects?	May need to consider stopping	
5	**Consider drug effectiveness in this group/person?**	For medicines not covered by steps 1 to 4 above, compare the medicine to the 'Drug Effectiveness Summary' which aims to estimate effectiveness.		Ref. Drug effectiveness summary (NNTs). Ref: National Polypharmacy Guidance further info re NNHs and medication use for patients with dementia Ref; Gold Standards Framework for guidance re meds use in patients with shortened life expectancy/frailty
6	**Are the form of medicine and the dosing schedule appropriate?** **Is there a more cost effective alternative with no detriment to patient care?**	Is the medicine in a form that the patient can take supplied in the most appropriate way and the least burdensome dosing strategy? Is the patient prepared to take the medication? UKMI Guidance on choosing medicines for patients unable to swallow solid oral dosage forms should be followed.		Consideration should be given to the stability of medications. Ensure changes are communicated to the patients' community pharmacist considering if this patient would benefit from Chronic Medication Service?
7	**Do you have the informed agreement of the patient/carer/welfare proxy?**	Once all the medicines have been through steps 1 to 6, decide **with the patient/carer/or welfare proxies** what medicines have an effect of sufficient magnitude to consider continuation/discontinuation.		

2. Drug effectiveness summary – NNTs (With thanks to NHS Highland) - See section 2.2 of the National Polypharmacy Guidance at http://www.qihub.scot.nhs.uk/media/459062/polypharmacy%20full%20guidance%20v2.doc for additional information)

ACE INHIBITORS

Indication	NNT per annum	To do what	Notes
Elevated Vascular Risk [Normal LV]	280	Prevent one death [all causes]	Trial ran for 5 years
Impaired LV Function-mild/moderate	30	Prevent one death [all causes]	Likely symptomatic benefit
Combination therapy including ACE			
ACE + Indapamide	55	Prevent one stroke	Trial ran for 5 years
Secondary Prevention post MI > 80 yrs [ACE+ BB +ASP+ STAT]	33	Prevent one Death	
ACE + Beta blocker for impaired LV	14	Prevent one death	Likely symptomatic benefit
Impaired LV Mild /moderate ACE + BB	15	Prevent one Death	Likely symptomatic benefit
Impaired LV Severe ACE + BB + Spiro	7	Prevent one Death	Likely symptomatic benefit
ASPIRIN Primary Prevention	Enormous	No longer recommended	
ASPIRIN Post Stroke/ TIA	100	Prevent one stroke or MI or Vascular Death	
DYPYRIDAMOLE In addition to ASPIRIN post stroke/TIA	100	Prevent one vascular event	BNF caution in cardiac disease
CLOPIDOGREL post stroke or TIA	Equivalent to Dypridamole + Aspirin	Prevent one vascular event	
ATRIAL FIBRILLATION			
AF + another risk factor WARFARIN v ASPIRIN	40	Prevent one Stroke- no difference in mortality	
AF (Secondary Prevention after Stroke) WARFARIN v ASPIRIN	16	Prevent one stroke	
ASPIRIN	No effect		
HYPERTENSION			BP > 140/90 trial predominantly systolic hypertension
Cardiovascular morbidity and mortality >80 yrs			
Low Risk	80	Avoid one cardiovascular event	2 years for effect
High Risk [Diabetes, vascular disease]	32	Avoid one cardiovascular event	2 years for effect
Cerebrovascular morbidity and mortality > 80 yrs	122	Avoid one cerebrovascular event	2 years for effect
Cardiovascular morbidity and mortality > 60yrs			
Low Risk	107	Avoid one cardiovascular event	4.5 years for effect
High Risk [Diabetes, vascular disease]	40	Avoid one cardiovascular event	4.5 years for effect

STATINS	**NNT per annum**	**To do what**	
MI or Angina	80 to 170	Major Coronary Event.	No difference in Mort to 5 years
Post Stroke [Atorva 80 v Placebo]	165	One Cardiovascular Event	No difference in Mort to 5 years
Tight HbA1c Control Strategies			
Microvascular Risk			
ADVANCE [HbA1c7.3% v 6.5%]	333	One microvascular event [predominantly retinal]	Trial ran 5 years
UKPDS [HbA1C 7.9% v 7%]	200	One microvascular event [predominantly retinal]	Trial ran 10 years
Macrovascular Risk	No difference at 10 years		
Metformin			
Overweight /obese Diabetic	50	One MI or Diabetes event or Death	10 year follow up
Standard < 140 BP control in diabetes any means	57	One Stroke or major diabetes event or death	8 year follow up
Tight BP control in diabetes			
BP 120 v BP 134	500	Prevent one stroke	4 years minimum for effect
Number needed to harm for this strategy	50		

Osteoporosis [Alendronate + Calcium/VitD]	**2y Prevention Vertebral #**	**2y Prevention Hip #**	**Notes for Osteoporosis**
70 -74 years	65	430	NNT per annum to prevent further #
75 - 79 years	45	180	Potential symptomatic benefit re Vertebral #
80 - 84 years	60	105	**Normally 2 years needed to see effect.**
85 - 89 years	55	45	
90+years	40	40	

High Risk Combinations
These combinations are noted to be particularly high risk and should be looked for and stopped at every drug review. **NSAID**
+ACE or ARB + Diuretic [‘Triple Whammy’ combo]
+eGFR <60
+diagnosis heart failure
+Warfarin
+age >75 without PPI
Heart Failure
+Glitazone +NSAID
+Tricyclic antidepressant

Warfarin
+ another antiplatelet.
+NSAID
+Macrolide
+Quinolone
+Metronidazole
+azole antifungal

Drugs for which specialist advice is strongly advised before altering include:
• anticonvulsants for epilepsy
• antidepressant, antipsychotic and mood stabilising drugs (e.g. lithium)
• drugs for the management of Parkinson’s Disease
• amiodarone
• disease-modifying antirheumatic drugs.

<u>Drugs that are tolerated poorly in frail patients</u>
It is particularly important to clarify if patients on the following have a **Valid and Current Indication** and are still felt to be effective**.**

- Digoxin in higher doses 250 microgram +
- Antipsychotics
- Tricyclic antidepressants
- Benzodiazepines particularly long term
- Anticholinergics
- Phenothiazines [e.g. prochlorperazine]
- Combinations painkillers [e.g. co-codamol v paracetamol]

STOP if dehydrated

- ACE inhibitors
- Angiotensin 2 Receptor Blockers
- NSAIDs
- Diuretics
- Spironolactone , Eplerenone
- Metformin

For example those suffering from more than minor vomiting/diarrhoea.
Restart when well (e.g. 24 to 48 hrs eating and drinking normally).
Adults with advanced heart failure can decompensate rapidly off drugs and adults with more than minor dehydration in this group need review.

3. Guidance related to specific drugs or BNF sections

See Sections 2.5 and 2.8 of the National Polypharmacy Guidance at http://www.qihub.scot.nhs.uk/media/459062/polypharmacy%20full%20guidance%20v2.doc which provides guidance on specific drugs and BNF sections to target (based on a modified STOPP tool) and other factors to consider when conducting a review including

- Medication most associated with admission due to adverse drug reactions
- Anticipatory care during intercurrent illness: drugs and dehydration
- Drugs which can be associated with rapid symptomatic decline if stopped
- Drugs for which specialist advice is strongly advised before altering
- Management of blood glucose control – effects of intensifying control
- Newer oral hypoglycaemics and heart failure
- Anticholinergic effects of commonly prescribed medication
- Specific considerations for patients with dementia
- Specific considerations for patients at risk of falls

The STOPP tool is a screening tool which can be used to identify potentially inappropriate prescribing for older people. See at http://www.em-consulte.com/showarticlefile/245669/main.pdf

The Anticholinergic Cognitive Burden Scale was developed with UK Medicines Research Council is used to assess potential risk of anticholinergic side effects of commonly prescribed drugs.

It is available at http://www.indydiscoverynetwork.org/AnticholinergicCognitiveBurdenScale.html

4. Assessing potential risk of drug interactions

See www.bnf.org for current advice on interactions which are potentially serious and where combined administration of the drugs involved should be avoided (or only undertaken with caution and appropriate monitoring)

See Sections 2.5 and 2.6 of the National Polypharmacy Guidance at http://www.qihub.scot.nhs.uk/media/459062/polypharmacy%20full%20guidance%20v2.doc which provides further guidance on high risk drug combinations to avoid

5. Information regarding shortened life expectancy and frailty

The following guidance contained in the prognostic indicators guidance from the Gold Standards Framework enables better identification of patients with shortened life expectancy. A full copy of this guidance is available at:

http://www.goldstandardsframework.org.uk/Resources/Gold%20Standards%20Framework/General/Prognostic%20Indicator%20Guidance%20October%202011.pdf

6. Information to support shared decision making with your patient

Shared decision making sheets (SDMS) are resources designed to facilitate a conversation about the reasons for choosing one treatment option over and above another treatment option between people with different types of expertise: professionals with access to evidence-based information on treatment effectiveness, disease outcome and patient's clinical data; patients with access to their experience of illness, views about treatment and knowledge of how they (want to) live their lives. Both parties need to understand why the treatment chosen was the best one for the patient given that it may, or may not, be the most clinically effective option.

See http://sdm.rightcare.nhs.uk/shared-decision-making-sheets/ for visual aids

See http://www.thennt.com/ for a quick summary of evidence based medicine

See http://www.nntonline.net/visualrx/ which turns NNTs into visual aids to discuss with patients

See http://www.choiceandmedication.org/cms/?lang=en for the choice and medication websites offer people information about medications used in the mental health setting to help people make informed decisions about medication