Polypharmacy Decision Support Mobile App

Webinar Integrated Care Matters Series 4: Appropriate Polypharmacy and Adherence
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The Need: A new approach to polypharmacy decisions

• **New paradigm of care** needed for people with multiple morbidities and polypharmacy.
• **Majority of patients** in Scotland have multiple morbidity (Barnett, 2012)
• **Research and guidelines focus on single conditions** and artificial trial populations
• Increases **likelihood of harmful interactions** in real-world patients.
• Decision support for new paradigm needs to be **personalised and based on real-world evidence about patient outcomes**.
Scotland’s Polypharmacy Guidance 2018

Aims:
1. Clinician use at point of care in clinical setting.

2. Support realistic prescribing
   • Personalised, shared decisions based on individual outcomes and values
   • Health literacy to empower and activate patients and carers in self-management.

Solution:
Make guidance actionable - decision support for professionals and patients/carers.
Polypharmacy mobile app developments

**Collaboration** – Scottish Government Effective Prescribing and Therapeutics Unit / Digital Health and Care Directorate

2019-2020:
• Mobilise guidance for professionals

2020-2021:
• Basic support for patients and shared decision-making;
• Scoping of Patient Reported Outcome Measures (PROMS) for polypharmacy
• Digital Health Literacy analysis and specification for next stage of development.

2021-2022:
• Extend support for patients and shared decision-making- personal record of medicines and Patient-Reported Outcome Measures.
Mobile app and website

apps.apple.com/gb/app/polypharmacy-guidance/id1072829127
play.google.com/store/apps/details?id=com.tactuum.quris.nes.polypharmacy

www.polypharmacy.scot.nhs.uk
Step 2: Identify essential drug therapy

Process

Description

Drug Info

Identify essential drugs (not to be stopped without specialist advice)

- Drugs that have essential replacement functions (e.g., levothyroxine)
- Drugs to prevent rapid symptomatic decline (e.g., drugs for Parkinson's disease, heart failure)

Description

- Separate the list of medicines which the patient is taking
- Ensure patient understand the importance of essential drug therapy
- All medication whether herbal, prescribed or traditional remedies should be included

Drug Info

Discuss with expert before stopping

- Diuretics - in LVSD
- ACE inhibitors - in LVSD
- Steroids
- Vasopressor maintenance drugs
Step 5: Is the patient at risk of ADRs or suffers actual ADRs?

- Process
- Description
- Drug Info

Drugs poorly tolerated in frail adults
See Gold National Framework on frailty

- Antipsychotics (incl. phenothiazines)
- NSAIDs
- Digoxin (doses ≥ 250 mcg) (9)
- Benzodiazepines
- Anticholinergics (incl. TCAs) (27)
- Combination analgesics

High-risk clinical scenarios
See ADR table

See “Sick day rules” cards

- Metformin + dehydration
- ACE/ARBs + dehydration
ACE INHIBITOR (ENALAPRIL 2.5 - 40MG/DAY (UPTITRATED AS TOLERATED) VS PLACEBO, SEVERE HEART FAILURE

Study population:

Patients with severe heart failure (NYHA class IV).

Co-morbidities included coronary heart disease, previous MI, hypertension and diabetes

Comments:

Mean age of patients was 70 years

Symptomatic improvement was observed i.e. A significant improvement in NYHA classification

NB Patient numbers in the study were low (n=253)

Study population:

Patients with heart failure

(NYHA class I - IV) due to left ventricular systolic dysfunction (ejection fraction ≤0.35).

Comments:

Mean age of patients was 61 years, approximately 80% were male. Less than 2% were NYHA Class IV.

Treatment also reduced hospital admissions for heart failure.

Mortality benefit appears to be most marked in the first 24 months of treatment.
Case Summary

Patient Details
87 year old woman

Current medical history
- Cerebrovascular disease
  - Partial anterior circulation stroke 5 years ago
  - Vascular dementia 3 years ago
- Hypertension
- Ischaemic Heart Disease
  - Atrial Fibrillation 2 years
  - Myocardial Infarction 15 years ago
- Type 2 Diabetes
- Osteoporosis: Fracture vertebrae L2 1 year ago; T score -3.2 at hip on DEXA scan
- Recurrent UTIs
- MMSE 22/30 ACE-R 66/100
- COPD with moderate airflow obstruction
- Hypothyroidism

Results
- HbA1c 40 mmol/mol (6.6%)
- BP 106/56 mmHg
- Urine Albumin/Creat ratio: trace micro-albuminuria
- Creatinine 124 umol/L; eGFR 45 ml/min and stable at this level
- Weight 43 kg

Current Medication
- Levothyroxine 150 micrograms once daily
- Alendronate 70 mg once a week
- Calcichew D3 Forte 1 tab twice daily
- Metformin 1 g three times daily
- Gliclazide 160 mg twice daily
- Perindopril 4 mg once daily
- Indapamide 2.5 mg once daily
- Rivaroxaban 20 mg once daily
- Clopidogrel 75 mg once daily
- Atorvastatin 80 mg once a day
- Mirtazapine 30 mg at night
- Zopiclone 7.5 mg at night
- Paracetamol 1 g four times daily
- Omeprazole 20 mg once daily
- Seretide 250/1 puff twice/day
- Salbutamol, as required

5. Safety

Identify patient safety risks
Identify adverse drug effects

- Risk of lactic acidosis: On high dose metformin and tight HbA1c. Reduce dose (deprescribe) as eGFR <38, and consider stopping
- Risk of hypoglycaemia: Gliclazide should be stopped
- Risk of acute kidney injury: Review ACE + diuretic + metformin
- Risk of paracetamol intoxication: weight <50 kg reduce dose
- Risk of falls: sedation (mirtazapine, zopiclone); anticholinergic (oxybutynin); hypoglycaemia (antidiabetics); hypotension (antihypertensives)
- Risk of Fractures: reduced by bisphosphonate and calcium plus vitamin D supplementation, but decision to continue should be in context of NNT
- Risk of bleeding: either stop DOAC or clopidogrel. Dose reduction of rivaroxaban required (creatinine clearance 19 ml/min)
- Risk of myalgia: review statin dose
For patients and carers

- What is a medicines review?
- What matters to you in your life?

- Preparing for a medicines review
- Shared Decision Making
- How will my review be carried out?
- Action plan
- What to do when you are ill
What is a medicines review?

A medicines review is a meeting with a doctor or a pharmacist to talk about the medicines you are currently taking.

The information in this app is based on NHS Scotland guidance about how to carry out a medicines review for people who take a lot of medicines. For these people, their medicines review may sometimes be called a Polypharmacy Review. Polypharmacy means “lots of medicines.”

This is a video recording of a medicines review with NHS Tayside GP Dr Graham Kramer and a longstanding patient of his called Ida along with her daughter Jane. Dr Kramer uses the 7 steps Polypharmacy Review to help the conversation:

7 Steps Polypharmacy Review with Dr Kramer: Ida and Jane

GP Dr Graham Kramer and a longstanding patient of his called Ida along with her daughter Jane. Dr Kramer uses the 7 step Polypharmacy Review as a framework for this consultation.

What matters to you in your life?

The aim of a medicines review is to ensure that your medicines are helping you with what matters to you in your life.

In advance of the review it is helpful to think about how your medicines can help you with the things that matter most to you. Is there anything you would like to do, make better or change which you think might be affected by your medicines?

Here are some examples....
Statins: what options do I have to reduce my risk of coronary heart disease or stroke?

This tool will help you to:

- Decide how to reduce your risk of stroke and coronary heart disease.
- Discuss your options with your health professional so that you can make the choice that is right for you.

You can use this tool to compare the advantages and disadvantages of:

- Taking a medicine to manage or prevent stroke and heart disease.
- Trying other options. You might want to try these instead of or as well as the medicine.

The tool gives you information so that you can think about how medicines and alternative options might affect what matters most to you in your life.

Research studies have been looked at how likely statins can help reduce the combined risk of stroke, heart attack and death.

Imagine a group of 400-420 people who have all had a stroke.

If these people were to all take a statin at the recommended dose for 1 year, research suggests that on average one of them would be saved from having a stroke during that year. In other words, one of those 400-420 people would have had a stroke if they had not taken a...
Next steps – work in progress

Expand patient and carer app to include:
• Patient-Reported Outcome Measures (building on 2019 scoping study)
• Personal Record of Medicines
• More Shared Decision Aids
• Digital Health Literacy Assessment in Early Adopter Boards underway

Integrate intelligent decision support into primary care EHR systems:
• Alerts for high risk medicine combinations
• Prompts to check NNTs/Shared decision aids
Mobile app and website

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