



Interventions to reduce problematic polypharmacy or inappropriate prescribing: an overview of an ongoing scoping review

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Background

- Polypharmacy is increasing in the UK
- Patients with multiple morbidities are particularly vulnerable to problematic polypharmacy
- Polypharmacy is often necessary, but there needs to be increased awareness to ensure that medications continue to be beneficial
- There are different tools, interventions, guidance and guidelines available aimed at reducing inappropriate prescribing¹
- Research on how primary care can optimise medications for adults with polypharmacy and multiple morbidities is still a priority in NIHR funding²

Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes



NICE guideline
Published: 4 March 2015
nice.org.uk/guidance/ng5

Health Services and
Delivery Research
Programme


*National Institute for
Health Research*

Commissioning Brief
16/118 – Medicines optimisation in patients with polypharmacy in primary care settings
Closing date: 12 January 2017 (two stage – outline to full)



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(1) National Institute for Health and Clinical Excellence. Medicines optimisation: the safe and effective use of medicines to achieve the best possible outcomes for patients. NICE guidelines 5.2015 <http://www.nice.org.uk/guidance/ng5>

(2) National Institute for Health Research. Commissioning Brief 16/118 – Medicines optimisation in patients with polypharmacy in primary care settings <http://www.nhs.uk/health-research-programme/16/118/16118-118-Commissioning-Brief-Polypharmacy/>

Scoping review rationale

It would be beneficial to:

- Have a clear understanding of what specific settings and populations, the existing high quality research covers regarding inappropriate prescribing
- Identify where there are gaps in the evidence base, for example:
 - interventions/tools aimed at certain populations
 - Interventions for use in different settings
 - Research from different perspectives (staff, patients or carers).

This scoping review aims to describe the high quality published research, current research activity and any potential gaps.

Scoping review methods

- Searched (from 01.01.2010 to 16.02.2016):



- Search strategies
 - Key words and MESH headings related to polypharmacy and inappropriate prescribing
 - Combined with RCT and systematic review search filters
- Abstracts screened independently by two reviewers
- Ongoing study searches:



Selection of Cochrane reviews identified:

- Allred *et al.*, (2016). Interventions to optimise prescribing for older people in care homes (update from 2011 and 2013 version)
- Christensen and Lundh (2016). Medication review in hospitalised patients to reduce morbidity and mortality (update from 2011 and 2013 version)
- Patterson *et al.*, (2014). Interventions to improve the appropriate use of polypharmacy for older people (update from 2009 and 2012 version)



Cochrane
Library

Trusted evidence.
Informed decisions.
Better health.

- All 3 reviews included 10 - 12 studies (3 primary studies that had some overlap across these 3 reviews)
- Some primary studies were RCTs and others were cluster RCTs (Patterson review did also include 2 controlled before and after studies)
- Interventions included in the reviews were quite broad and included interventions such as medication reviews, screening tools, specialist clinics, IT support systems and educational interventions.
- Some interventions also had multiple components for example medication review alongside education
- The Allred and Patterson reviews focused on older people and despite the Christensen review having a wider inclusion criteria the mean age of the studies included ranged from 59-80
- Allred focused on care homes settings, Christenson on hospital settings and Patterson included a variety of settings
- Interventions were delivered by health care professionals. In most studies this was pharmacists or doctors either as individuals or as part of a team

Non Cochrane review and RCTs identified:

- Non Cochrane review
 - Hohl *et al.*, (2015). The effect of early in-hospital medication review on health outcomes: A systematic review. *British journal of clinical pharmacology*. **80**(1):51-61.
- RCTs
 - Tannenbaum *et al.*, (2014). Reduction of inappropriate benzodiazepine prescriptions among older adults through direct patient education: the EMPOWER cluster randomized trial. *JAMA Internal Medicine*; **174**(6):890-898
 - Gallagher *et al.*, (2011). Prevention of potentially inappropriate prescribing for elderly patients: a randomized controlled trial using STOPP/START criteria. *Clinical Pharmacology & Therapeutics*; **89**(6):845-54.

- The Hohl review included 7 studies whilst the RCTs included 300-400 participants. The Empower cluster RCT had 15 pharmacies in both the control and intervention clusters.
- Interventions included: medication reviews; applying STOPP/START criteria then discussing results with a patients clinical team; and patient education.
 - The patient education involved a booklet educating patients and describing the risks of a drug, then prompting patients to discuss deprescribing with their physician or pharmacist.
- The RCTs both focused on older people, one in a community pharmacy setting and one in hospital.
- The Hohl review focused on patients who presented at hospital and the mean age ranged from 70-86.
- All of the interventions involved health care professionals.
 - However, the Tannenbaum RCT delivered the educational intervention directly to patients and the patient then initiated discussion with a health professional.

Early findings (1)

- Inconclusive evidence that the interventions have an effect on the length of hospital admission, mortality or re-admissions
- This was often due to the number, size and quality of available studies, as well as the variability in design, interventions, outcomes and results
- Some evidence supports that different interventions can reduce inappropriate prescribing
- The RCT of a direct to patient educational intervention helped to promote patient and health professional discussion, around the overuse of medications, and there was a larger discontinuation rate in the intervention group
- The Gallagher RCT using the STOPP/START criteria found significant improvements in prescribing appropriateness.
- Only one review reported a slower decline in health related quality of life and quality of life was not an outcome in a number of the studies.

Early findings (2)

- More high quality studies need to be done and new technologies need to be evaluated.
- Direct to patient education could be a favourable strategy to prevent overtreatment and reduce the risk of drug harms.
- Studies using the STOPP/START criteria should be replicated in different care settings
- These preliminary findings raise some questions as to whether further work should also investigate what outcomes are important in the context of inappropriate prescribing. Interventions
 - How important are clinical outcomes such as length of hospital admission, mortality or re-admissions in this context?
 - Should patient reported outcomes and reduction in inappropriate prescribing be considered important outcomes?
 - What outcomes are important to patients and clinicians?

Early findings (3)

- Does there need to be a core outcome set to allow easier comparison of results across reviews and studies?
 - There are core outcome sets in development for studies aimed at optimising prescribing in older adults in care homes, improving appropriate polypharmacy in older people in primary care and medication review in older people.⁽³⁾
 - The results of this work will be very interesting and beneficial.
 - But does there need to be a broader core outcome set to allow comparisons between different interventions, different settings and different populations?

(3) The COMET (Core Outcome Measures in Effectiveness Trials) Initiative. COMET database: <http://www.comet-initiative.org/studies/search>



Next steps

- Update search
- Complete search of other sources – current NIHR projects
- Extract data
- Chart data
- Publish findings

Potential impact of results

- Future findings from this ongoing scoping review will:
 - (1) allow gaps to be identified in relation to certain groups, types of interventions and types of studies
 - (2) Allow current interventions, research activity and themes to be charted
 - (3) identify interventions that are appropriate for use in different population groups
 - (4) direct future research/systematic reviews in the area of polypharmacy and inappropriate prescribing
 - (5) Potentially inform guidance

Further Information

This is ongoing work stream in CLAHRC WM, so please feel free to contact me for further information or if you are interested in future collaborations:

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