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Development of a deprescribing intervention for older patients with complex multimorbidity taking 15 or more regular medicines

Prof Susan Smith

[Dr Caroline McCarthy, Dr Frank Moriarty and Dr Barbara Clyne]

US Deprescribing Research Network Webinar, 22nd Sept 2020

RCSI

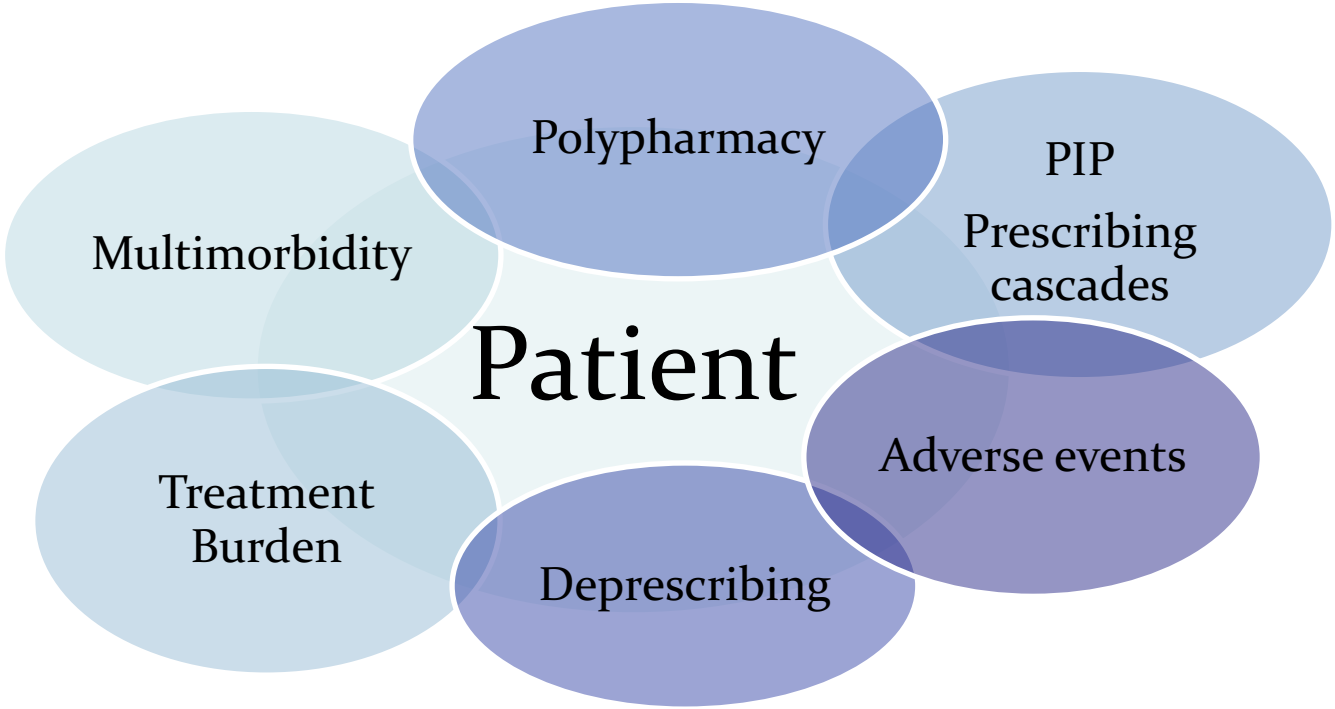
Conflict of interest statement

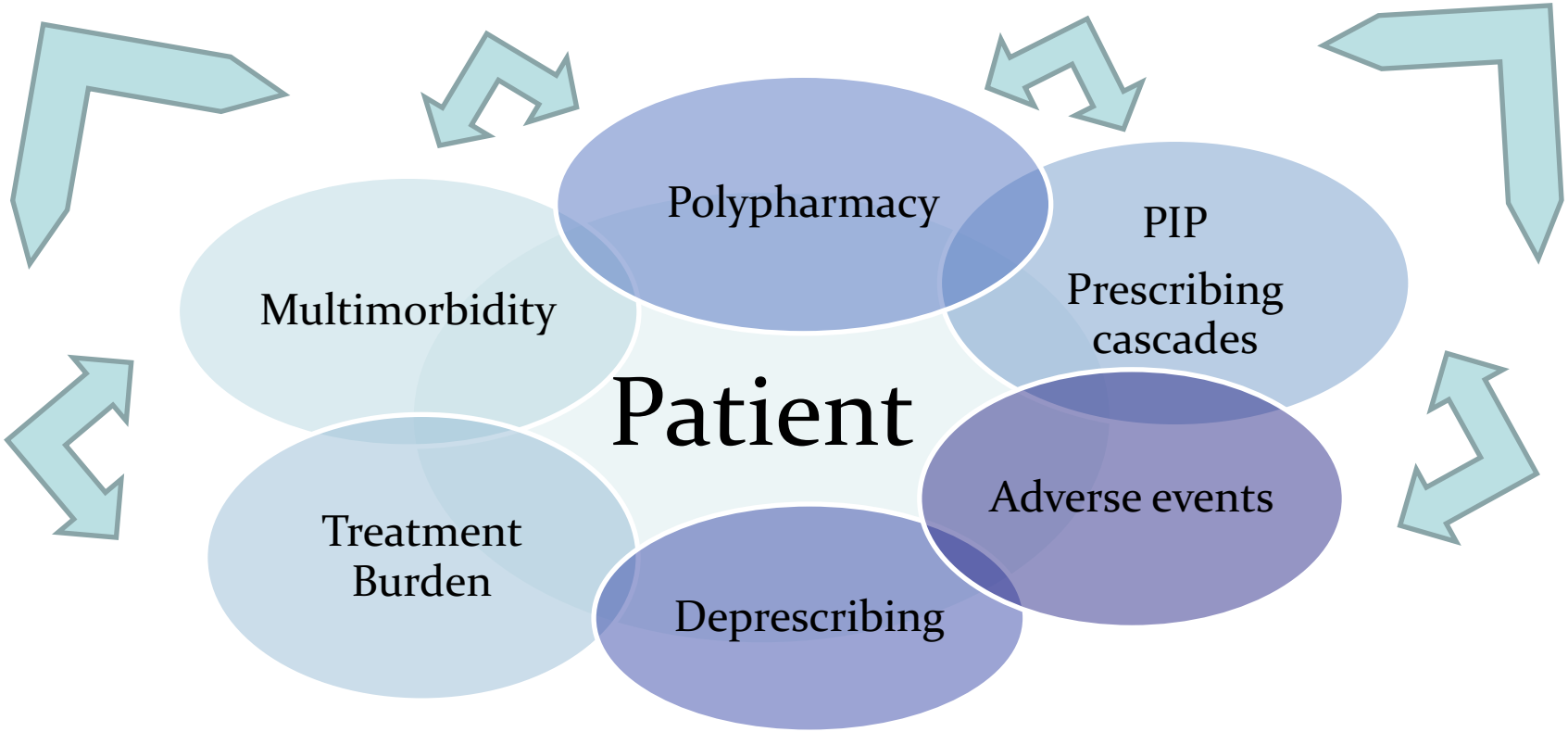
- I have no financial conflicts of interest to declare
- This webinar is based on publicly funded research, with appropriate acknowledgement

Overview of Presentation

- Context
  - Polypharmacy and PIP
  - Multimorbidity

- Development of the SPPiRE intervention
  - Incorporating deprescribing in a complex intervention


Polypharmacy
PIP
Prescribing cascades
Multimorbidity
Patient
Adverse events
Treatment Burden
Deprescribing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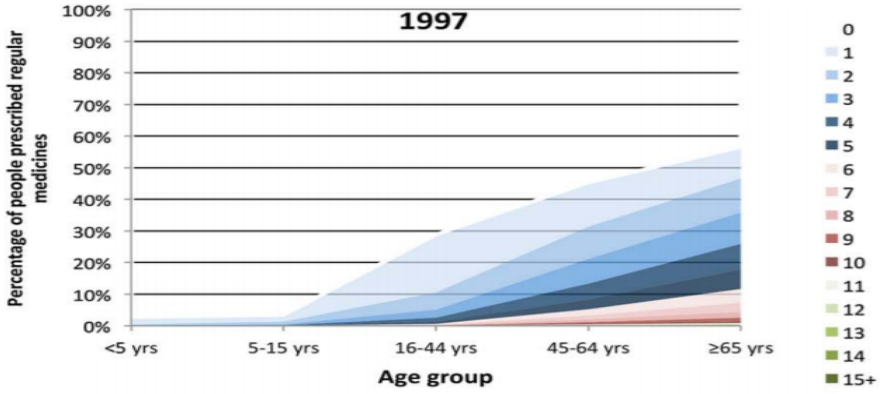
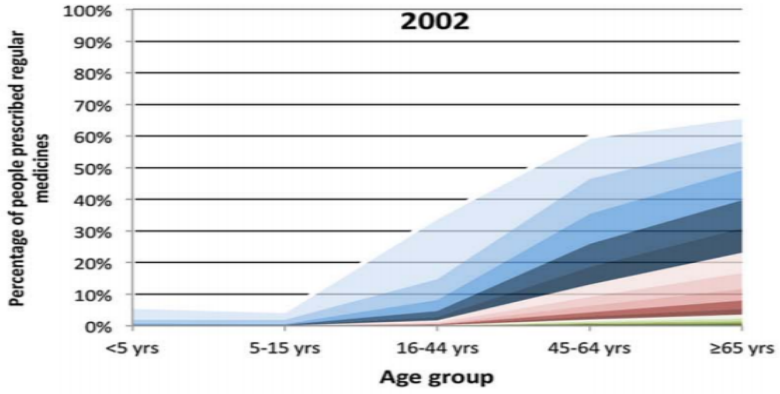
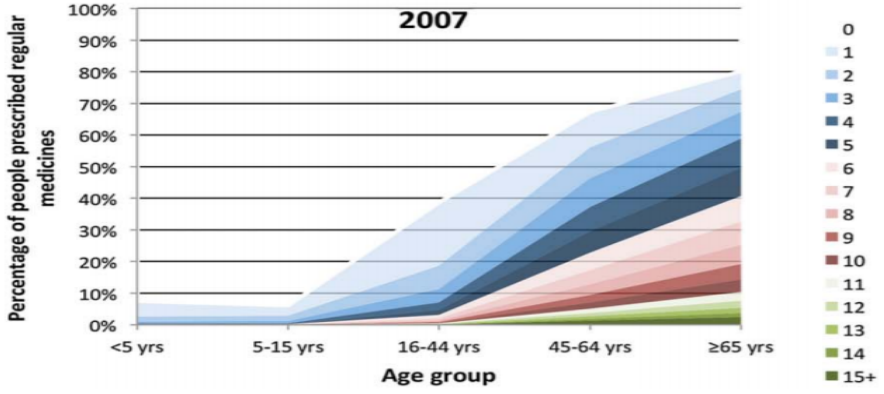
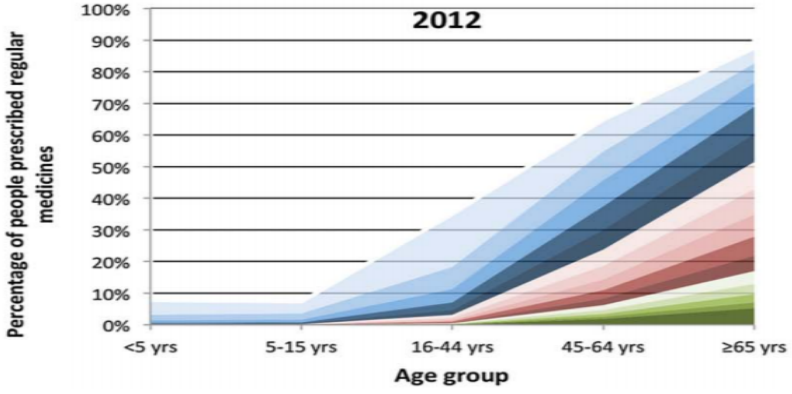
Polypharmacy: Trends









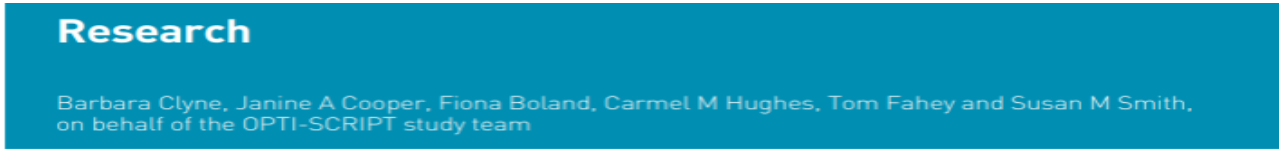
Moriarty BMJ Open. 2015;5(9)

Polypharmacy: Impact

- Poses significant challenges for prescribing in primary care:
  - Potentially inappropriate prescribing (PIP) and high risk medications (prevalence in >70s is 36%)
  - Adverse drug reactions
  - Health service utilisation (GP and ED visits)
  - Increased expenditure
  - Poorer health related quality of life

- (Wallace, Gerontology Series A 2017;72(2):271-277; Moriarty, Br J Clin Pharmacol. 2016;82(3):849-857; Moriarty, BMJ Open 2019;9:e021832; Cahir, Br J Clin Pharmacol. 2010 May;69(5):543-52.)

Polypharmacy: patients views



BJGP 2017;67(660):e507-e518

- Coexisting positive and negative attitudes
  - 96% of patients believed strongly in the necessity of their medications
  - 34% also reported strong concerns about the potential for adverse consequences

- ‘Well I mean the doctor said it to me you know, “Oh I don’t like you taking Difene”, I say why, “Because it’s very hard on the stomach” you know, and I think it’s the kidneys or the liver or something, you know, I accept what they tell me. **Well that’s what we go to the doctor for isn’t it — to be told what’s good for your body**.’ (P655, female, 76 years)

Interventions: polypharmacy in primary care

- Cochrane review of interventions to improve the appropriate use of polypharmacy for older people (Rankin 2018)
  - 32 studies across all healthcare settings
  - Unclear whether interventions to improve appropriate polypharmacy resulted in clinically significant improvement
- Methodological issues
  - Study design and conduct
  - Heterogeneity

Interventions PIP in primary care

Interventions to Address Potentially Inappropriate Prescribing in Community-Dwelling Older Adults: A Systematic Review of Randomized Controlled Trials

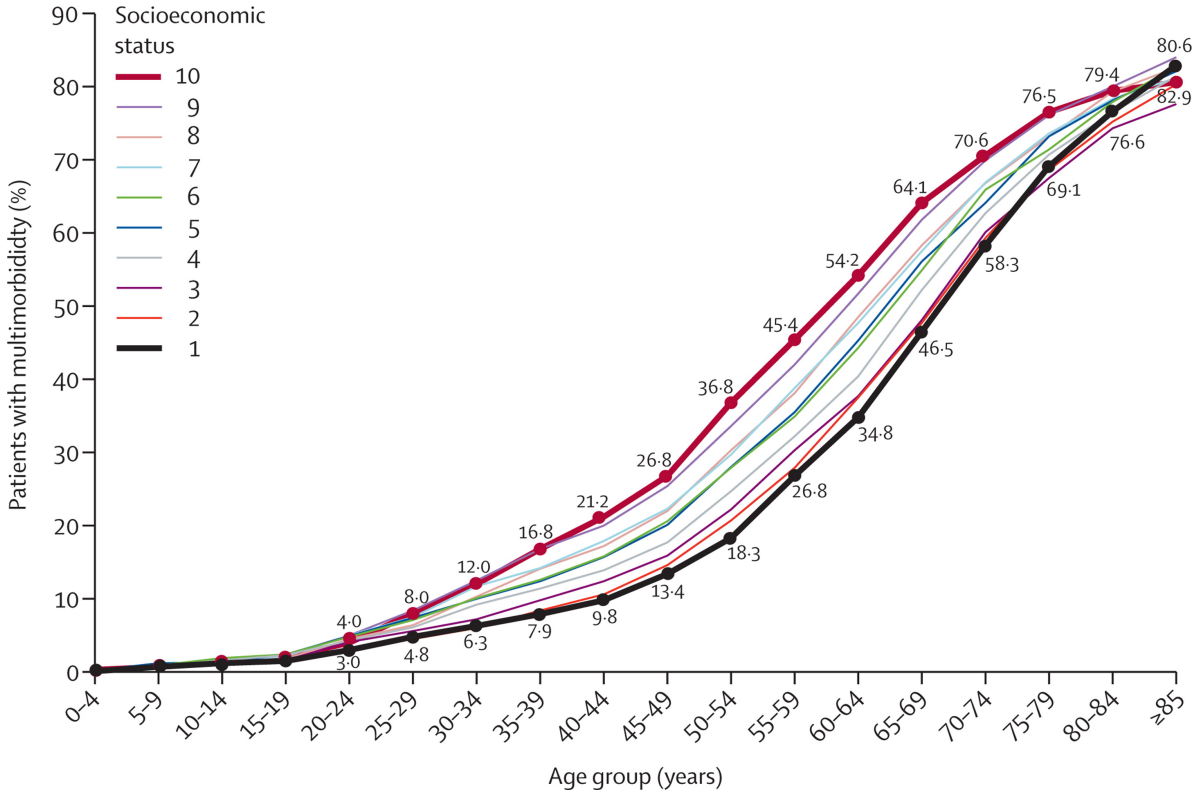
Barbara Clyne, PhD, Ciaran Fitzgerald, BSc,* Aisling Quinlan, MSc,* Colin Hardy, MSc,* Rose Galvin, PhD,*† Tom Fahey, MD,* and Susan M. Smith, MD**

JAGS 2016;64(6):1210-22

- 12 RCTS

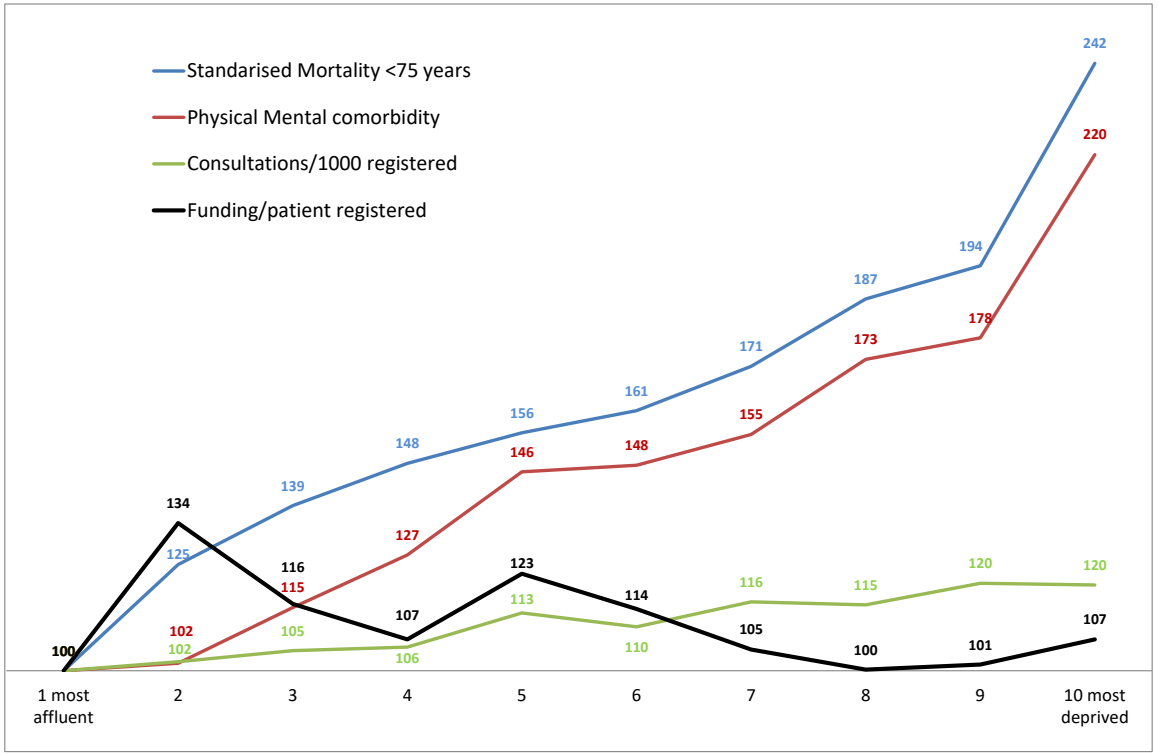
  Some weak evidence indicating reductions in PIP and suggesting support multi-faceted approaches, pharmacist interventions and computerized decision support systems may be effective

Multimorbidity



Barnett et al, Lancet 2012

Multimorbidity impact on patients and clinicians

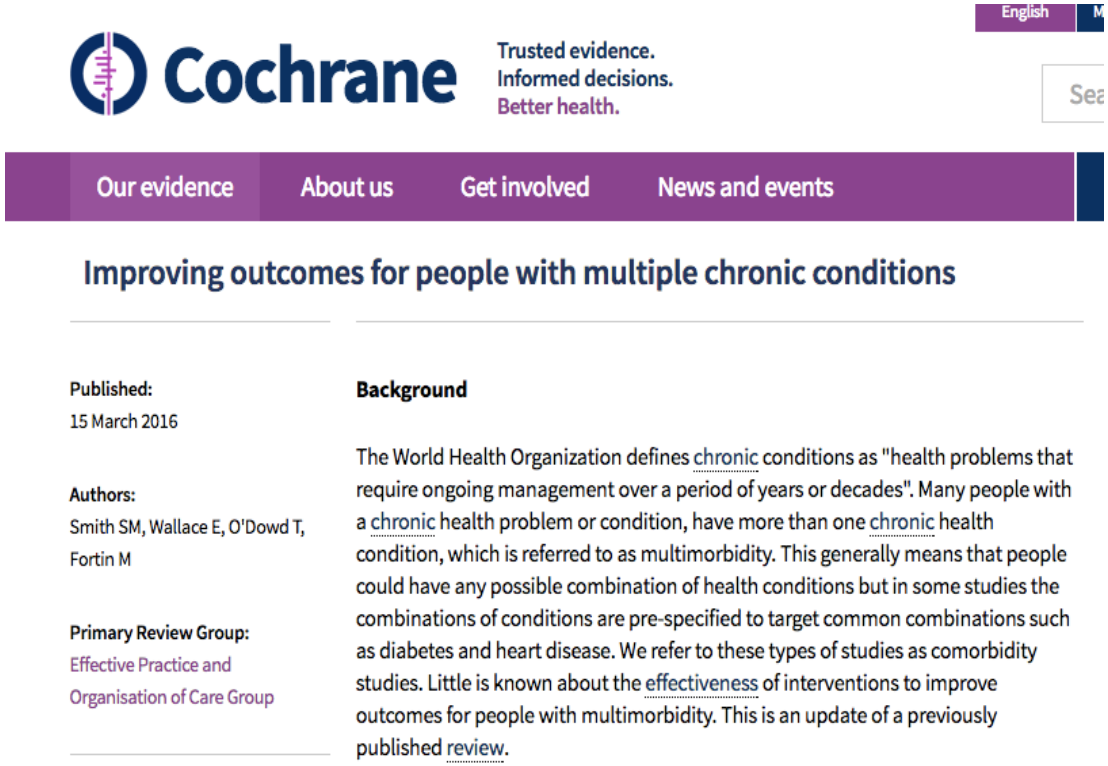


McLean G, Guthrie B, Mercer SW, Watt GC. ***General practice funding underpins the persistence of the inverse care law: cross-sectional study in Scotland?*** BJGP 2015; 65(641): 799-805.

Treatment Burden

May et al. BMJ, Vol 339. 2009

Interventions for multimorbidity in primary care



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Improving outcomes for people with multiple chronic conditions

Published:
15 March 2016

Authors:
Smith SM, Wallace E, O'Dowd T, Fortin M

Primary Review Group:
Effective Practice and Organisation of Care Group

Background

The World Health Organization defines chronic conditions as "health problems that require ongoing management over a period of years or decades". Many people with a chronic health problem or condition, have more than one chronic health condition, which is referred to as multimorbidity. This generally means that people could have any possible combination of health conditions but in some studies the combinations of conditions are pre-specified to target common combinations such as diabetes and heart disease. We refer to these types of studies as comorbidity studies. Little is known about the effectiveness of interventions to improve outcomes for people with multimorbidity. This is an update of a previously published review.

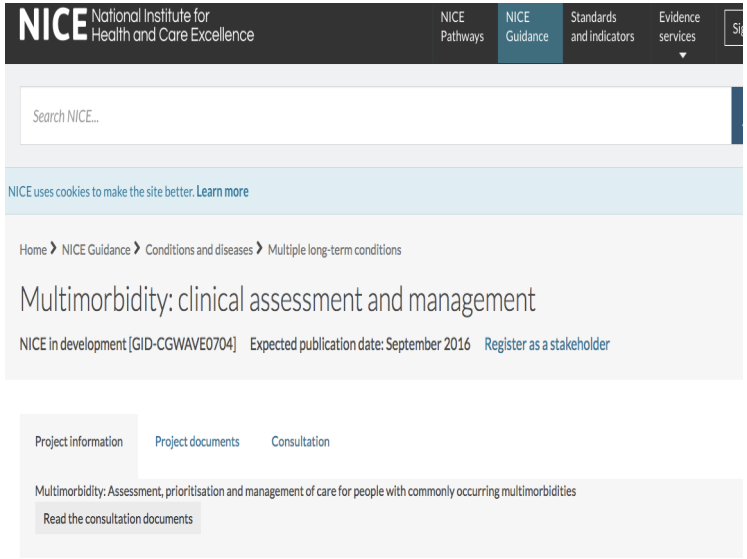
2020 update: Focus on multimorbidity
(excluding co-morbidity)

20 studies; all RCTs

4 with medicines management focus, all complex interventions

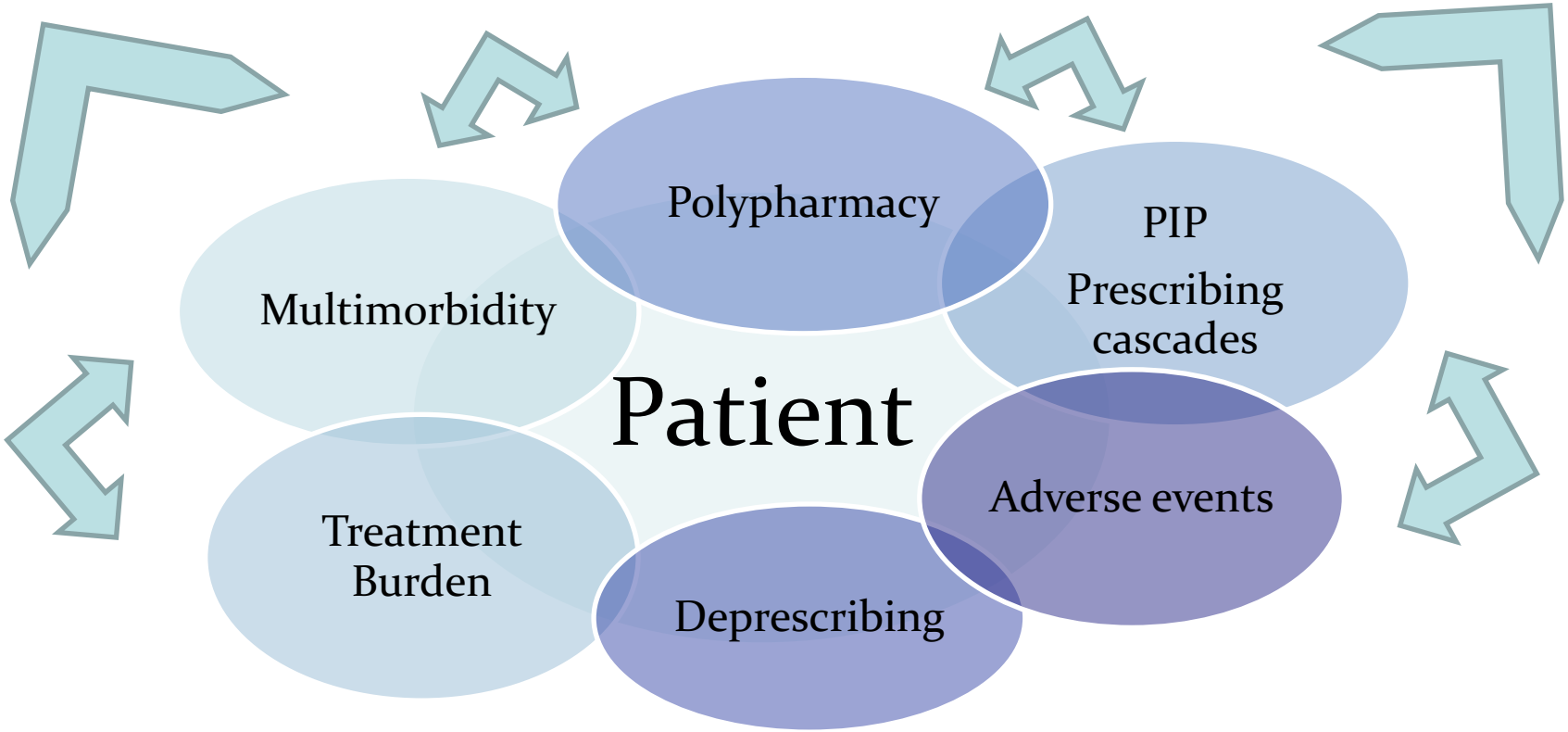
- Krska 2001 UK, mean 4 conditions, significant improvement in resolved pharmaceutical care issues
- Koberlein-Neu 2016 Ger, mean 12.7 conditions and 9.4 medications; significant improvement in MAI
- Jager 2017 Ger, mean 5.7 conditions and 7.3 meds; no signficant improvement in summary score of 10 prescribing indicators
- Muth 2018 Ger , PRIMUM (5 or more meds), no significant improvement in MAI

Evidence based clinical management



Target patients on >10 [>15] meds

Future guidelines should consider an integrated approach to management of multimorbidity and polypharmacy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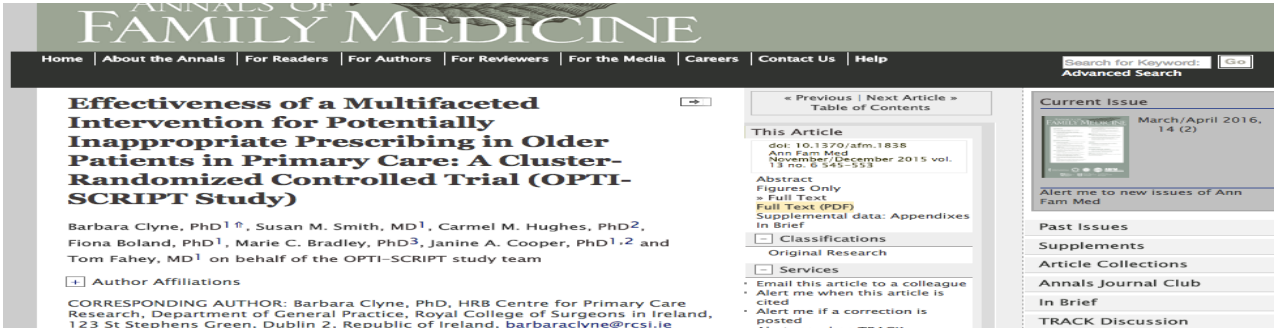
Context

Designing an intervention in this context: SPPiRE



OPTI-SCRIPT RCT and process evaluation

- Cluster RCT 21 GPs and 196 patients
- Intervention: review of medicines with web-based pharmaceutical treatment algorithms
- Effective in reducing PIP, particularly in modifying prescribing of proton pump inhibitors; uncertain cost effectiveness

Adaptive process in context of emerging evidence

Intervention modified in a five step process:

(1) Identification of core components of the original intervention

(2) Literature review

(3) Modification of the intervention

(4) Pilot study

(5) Final refinements

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Emerging evidence

- OPTI-SCRIPT Process Evaluation
- DQIP trial* electronic alerts re high risk prescriptions
- Cochrane review multimorbidity
- NICE Guidances on multimorbidity, polypharmacy and medicines optimisation
- Treatment Burden theory
- Concept of deprescribing

*https://www.nejm.org/doi/10.1056/NEJMsa1508955

Modifications

- Participants
  - Move to older adults on 15+ meds (approx 5% over 65s)
- Intervention (still web-based GP supports)
  - Incorporated multimorbidity guidelines (prioritisation)
  - High risk meds vs PIP
  - Brown bag medicines review including (prioritisation)
  - Deprescribing focus
- Outcomes
  - Number meds as well as %PIP
  - New PROMs: Treatment burden and patient attitudes towards deprescribing

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Implementation Science

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Study protocol | Open Access | Published: 01 August 2017

Supporting prescribing in older people with multimorbidity and significant polypharmacy in primary care (SPPiRE): a cluster randomised controlled trial protocol and pilot

Caroline McCarthy, Barbara Clyne, Derek Corrigan, Fiona Boland, Emma Wallace, Frank Moriarty, Tom Fahey, Carmel Hughes, Paddy Gillespie & Susan M. Smith

Implementation Science **12**, Article number: 99 (2017) | Cite this article

2915 Accesses | **13** Citations | **33** Altmetric | Metrics

Aim: to assess the effectiveness of a complex intervention designed to support GPs to reduce potentially inappropriate prescribing and consider deprescribing in older people with multimorbidity and significant polypharmacy

SPPiRE: PICO	
Population	≥65 years, prescribed ≥15 repeat medicines, which is a measure of both significant polypharmacy and complex multimorbidity
Intervention	1. Training videos a. demonstrate SPPiRE medication review b. describe key concepts - polypharmacy, PIP, multimorbidity and treatment burden 2. Online medication review template which provides a structured process. GPs guided to: a. Screen the current prescription for PIP and high risk prescribing b. Assess the patient's treatment priorities c. Review each medicine with the patient, consider deprescribing d. Agree all changes with the patient
Comparison	Usual care
Primary outcome	Proportion of patients with any PIP and the number of repeat medicines
Secondary outcomes	Treatment burden, health related quality of life, medicines outcomes patients' attitudes towards deprescribing, health services utilisation

SPPiRE: initial messages

- High event rates (5-6% mortality)
- Very challenging recruitment
  - 125 practices invited, 70 provided practice profile data, 51 recruited (41%)
  - 1790 patients eligible invited, 442 recruited (25%)
- Intervention barriers
  - Finder tool and web-based supports basic
  - Staff shortages
  - Complexity of the patients

Alternative approaches:

1. Family practice based pharmacist (feasibility study)

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Evaluation of the General Practice Pharmacist (GPP) intervention to optimise prescribing in Irish primary care: a non-randomised pilot study

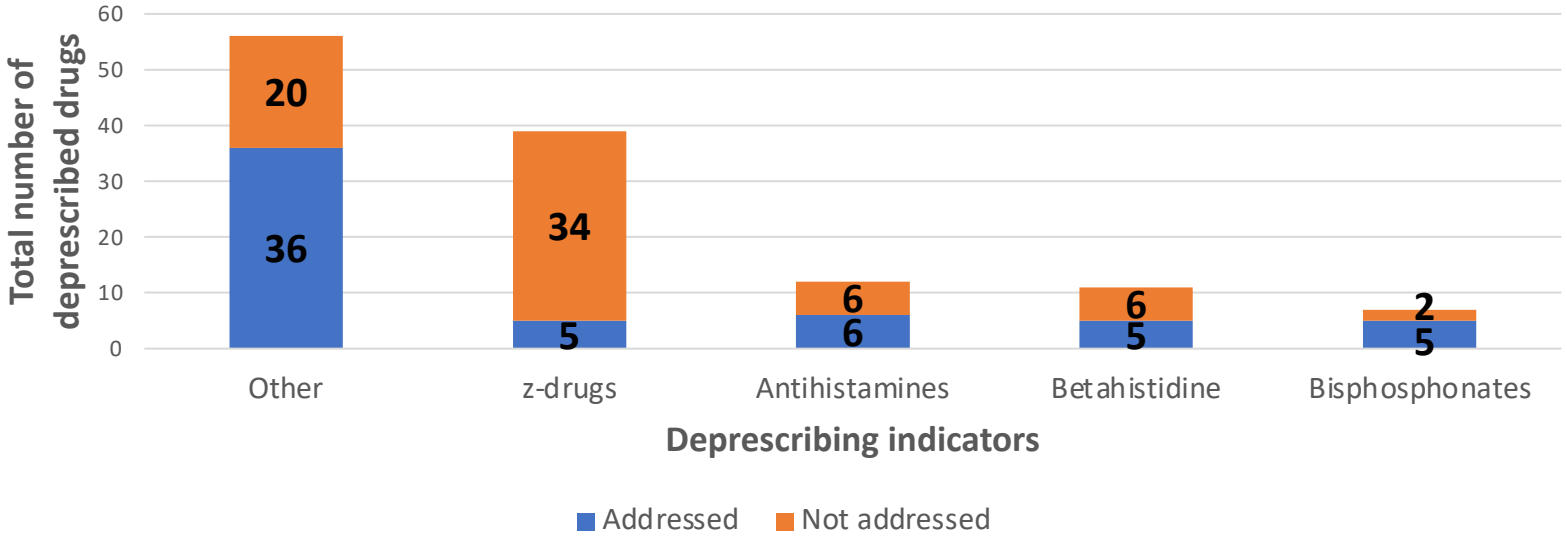
Karen Cardwell[1], Susan M Smith[1], Barbara Clyne[1, 2], Laura McCullagh[3, 4], Emma Wallace[1], Ciara Kirke[5], Tom Fahey[1], Frank Moriarty[1] on behalf of the General Practice Pharmacist (GPP) Study Group

Author affiliations +

One of aims was deprescribing

Different to addressing PIP (to avoid double counting)

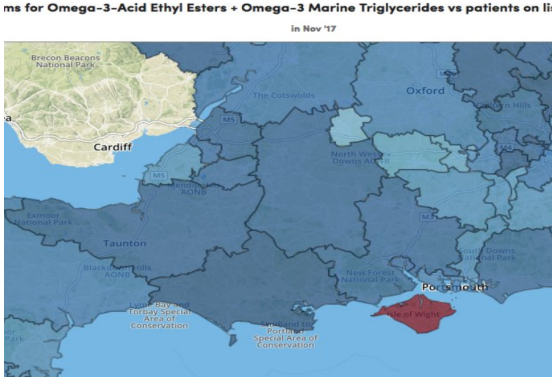
Chart-based medication reviews (n=136)



Other (Quinine, Cyclizine, Domperidone, Valsartan, Venlafaxine, Ferrous fumarate, Cefalexin, Quetiapine, Allopurinol, Gabapentin, Pregabalin, Codeine/Paracetamol, Tramadol, Mirtazepine, Raloxefine, Amitriptyline, Prochlorperazine, Buprenorphine, Isosorbide mononitrate)

2. Target specific drugs for deprescribing and then conduct audit and feedback for prescribers

www.openprescribing.net



3. Regulatory approaches: safety issues – also practice variation

Journal of *Clinical Medicine*

MDPI

Article

Prescribing Variation in General Practices in England Following a Direct Healthcare Professional Communication on Mirabegron

Frank Moriarty [1,*], Shegufta Razzaque [1], Ronald McDowell [1,2] and Tom Fahey [1]

Conclusions

- Deprescribing sits in context of multiple moving parts
- Research is a challenge
  - Who to target?
  - Effective interventions?
  - Appropriate outcomes?
- Key issue is clinical impact (but costs matter too)
  - “Nobody wants to take more medications than they need to”. (P1345, male, 81 years)

Acknowledgements

Colleagues from the HRB Centre for Primary Care

Dr Caroline McCarthy, Dr Barbara Clyne, Dr Frank Moriarty,

Dr Fiona Boland, Dr Emma Wallace and Prof Tom Fahey

All GPs and patients who have participated in the included studies

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Thank you

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Background: Irish Health Care System

- Mix public private funding
- Broad categories of entitlement to health care

Full eligibility	• Free access to health care via the General Medical Services (GMS) scheme (means tested). • Prescription co-payments - €2 per dispensed item, up to a maximum of €20 per month per person/family.
Limited eligibility	• Non-GMS patients pay in full for primary care services (approx. €50 per GP visit) • Free/subsidised public hospital services • Subsidised prescription costs - maximum of €134 in a calendar month