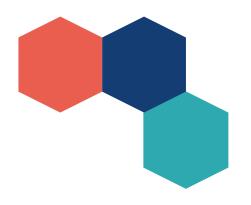
# NILLERApplied Research Collaboration<br/>Ageing and<br/>East of EnglandAgeing and<br/>Multi-morbidity

Friday 29<sup>th</sup> October 14.30 to 15.30 GMT

# Behavioural science applied to medicines optimisation challenges



### Introduction to the ARC

Prof Claire Goodman, Centre for Research In Public health And Primary Care (CRIPACC) University of Hertfordshire Ageing and Multimorbidity theme lead

Ageing and Multi-morbidity

### Behavioural science applied to medicines optimisation challenges





## Behavioural science applied to medicines optimisation challenges



#### Agenda

- 10 min. Introduction to behavioural science & deprescribing
- 10 min. Opioid deprescribing toolkit

Speaker: Prof Debi Bhattacharya, University of East Anglia, NIHR ARC East of England

- 10 min. A practitioner behaviour change intervention for deprescribing in the hospital setting Speaker: Dr Sion Scott, University of Leicester
- 30 min. What have we learnt? What next?

Curated conversation, key points of learning and future research initiatives.











#### **Debi Bhattacharya** Professor of Behavioural Medicine

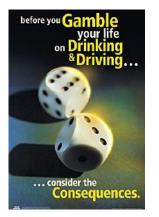








### Human beings are complex



A guide to losing weight for men and women



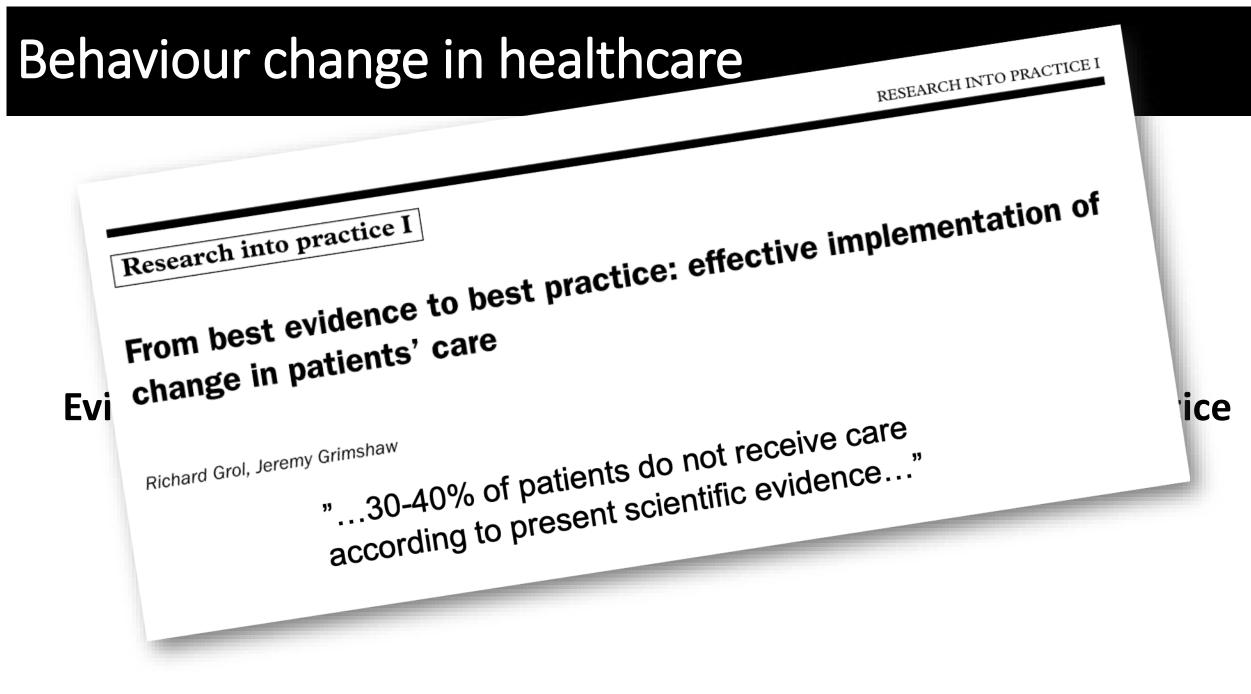




#### Behaviour change in healthcare

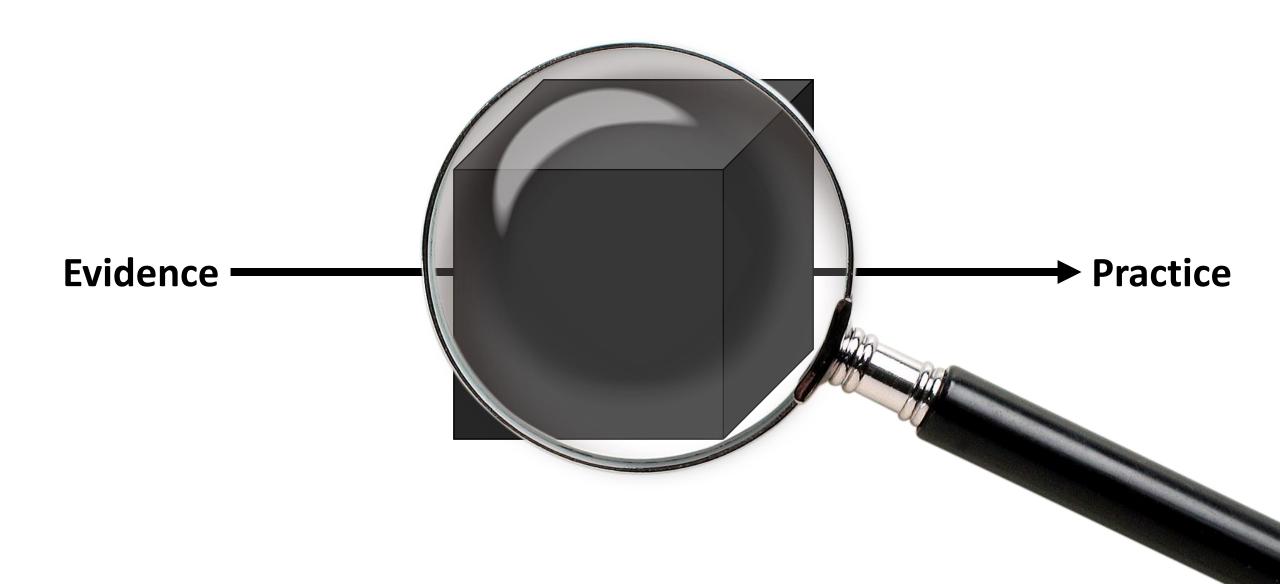






Grol R, Grimshaw J. From best evidence to best practice: effective implementation of change in patients' care. The lancet. 2003 Oct 11;362(9391):1225-30.

### Healthcare practitioner behaviour



## Behavioural science applied to medicines optimisation challenges





- 1. I am interested in hearing others' experiences of using behavioural science to address medicines optimisation challenges.
- 2. I am interested in using behavioural science to address medicines optimisation challenges.
- 3. I am using/have used behavioural science to address medicines optimisation challenges.

Ageing and Multi-morbidity



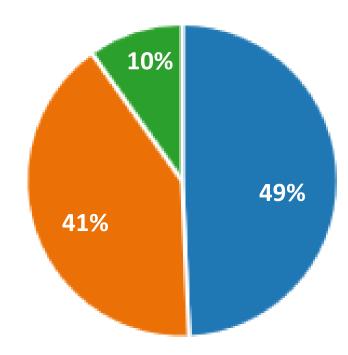
#### **Survey results**



I am interested in **hearing others' experiences** of using behavioural science to address medicines optimisation challenges.

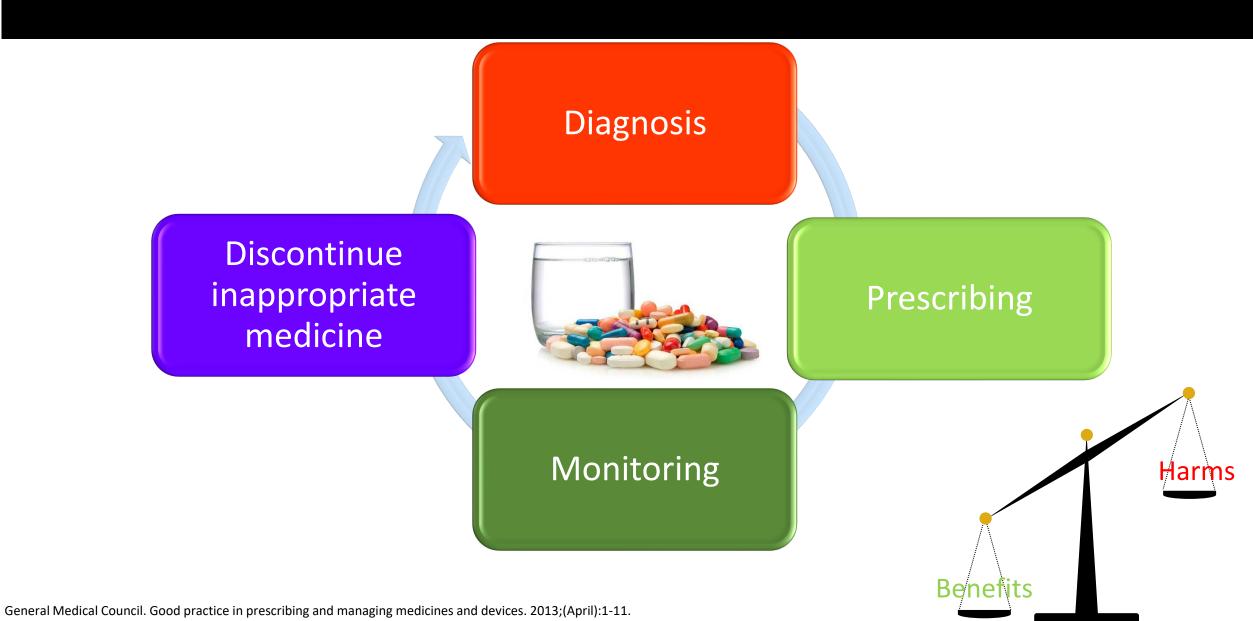


- I am interested in **using behavioural science** to address medicines optimisation challenges.
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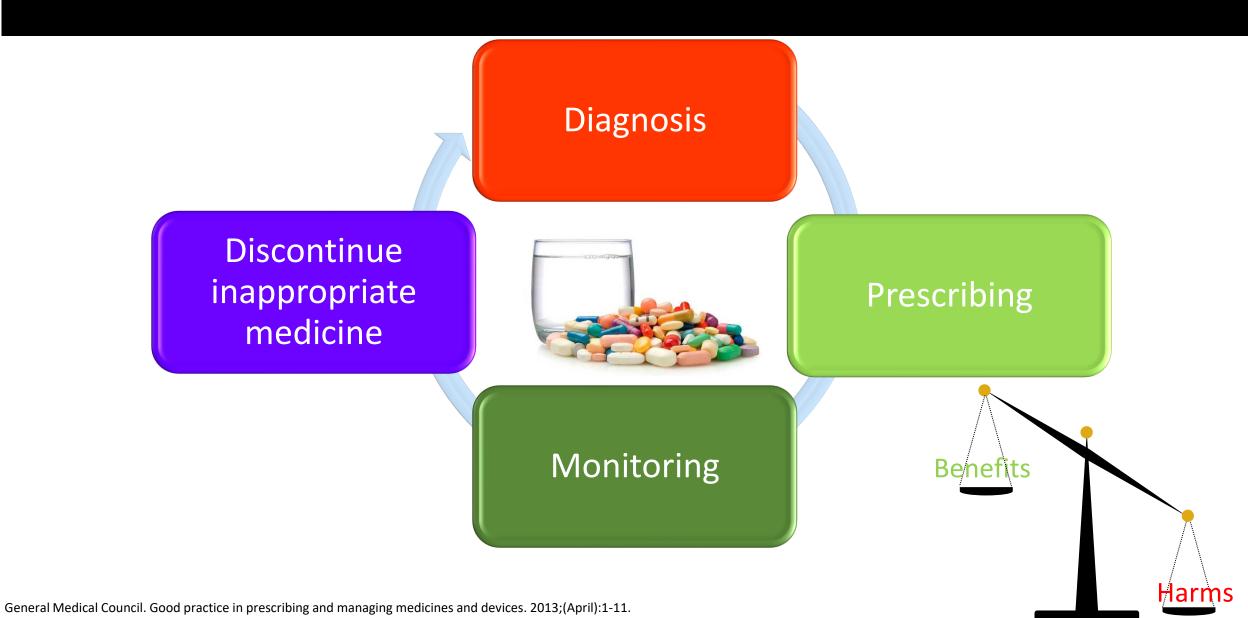


## Role of behavioural science in deprescribing

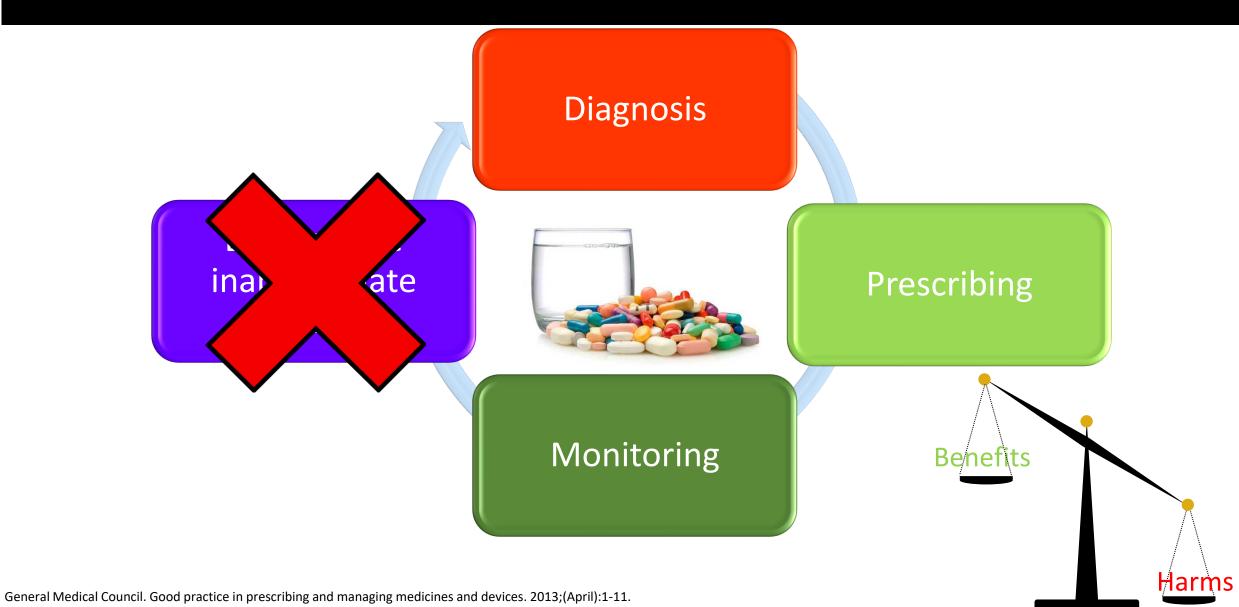




De-Vries T, Henning R, Hogerzeil H, Fresle D. Guide to Good Prescribing: a practical manual. 2000:142.



De-Vries T, Henning R, Hogerzeil H, Fresle D. Guide to Good Prescribing: a practical manual. 2000:142.



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#### Organisational requirements for supporting primary care practitioners to tackle opioid prescribing

### Debi Bhattacharya



### Background

- Numerous opioid deprescribing trials
  - Patient behaviour change focus
  - None successfully implemented to yield the same effects
- Numerous opioid deprescribing services in operation

• All highly complex interventions



#### The realist approach

We implemented the same program in two locations. Site 1 For some reason, we had very different results. 5:te 2 **Atext** 



### The realist approach

Everytime I throw the ball up, it just Comes back down That's just gevity. Jechanism again.

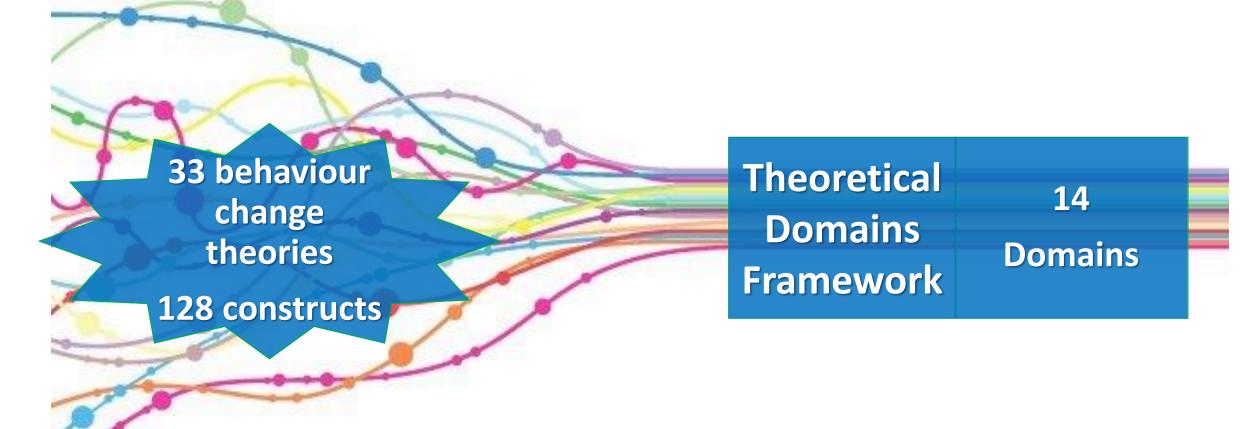
### Methods

- Convene stakeholder group (n=23)
  - Prescribers, researchers, commissioners, policy makers

#### **Programme theory**

If practitioners receive training on how and when to taper opioid doses then they are more likely to encourage patients to do so.

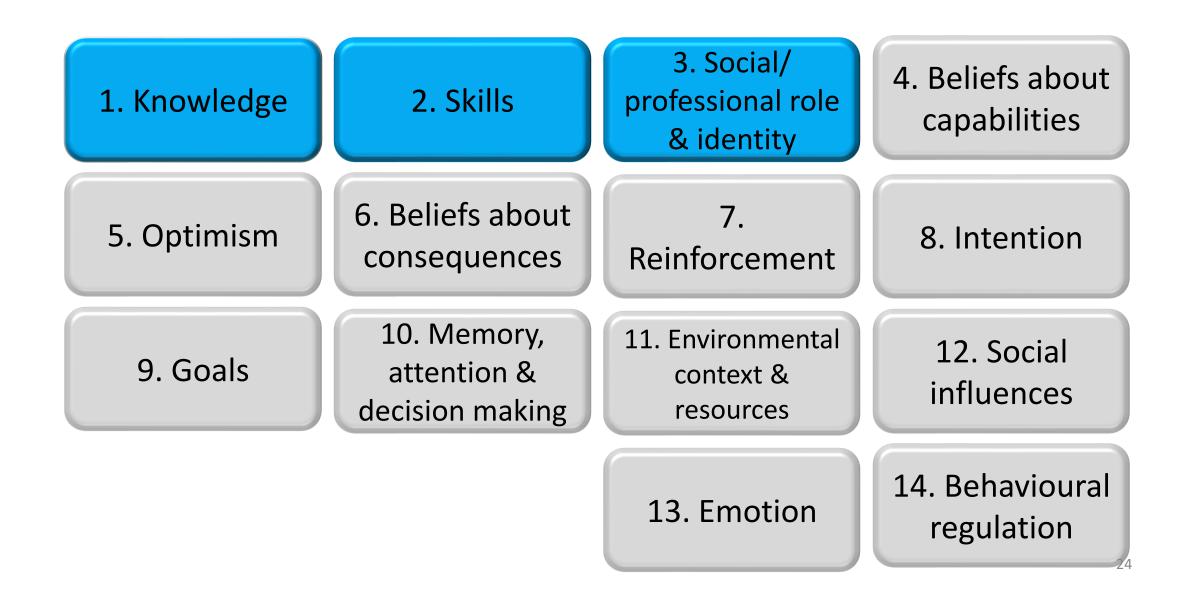




Michie et al. BMJ Quality & Safety (2005) 14:26-33; Cane et al. Implementation Science (2012) 7:37 Atkins et al. Implementation Science (2017) 12:77; Kislov et al. Implementation Science (2019) 14:103



### **Theoretical Domains Framework**



#### Example initial programme theories

If programmes adopt a pathway incorporating guidelines, then practitioners are more likely to be successful in supporting patients to reduce their opioid use. **(Knowledge)** 

If programmes ensure practitioners are equipped to deliver the intervention (through training or experience) then they will be successful in supporting patients to reduce their opioid use. (Skills)

If there is a clear expectation that opioid deprescribing is the responsibility of the clinicians, then they are more likely to initiate deprescribing discussions with patients.

(Social and Professional role and identity)

#### **Initial programme theories tested**



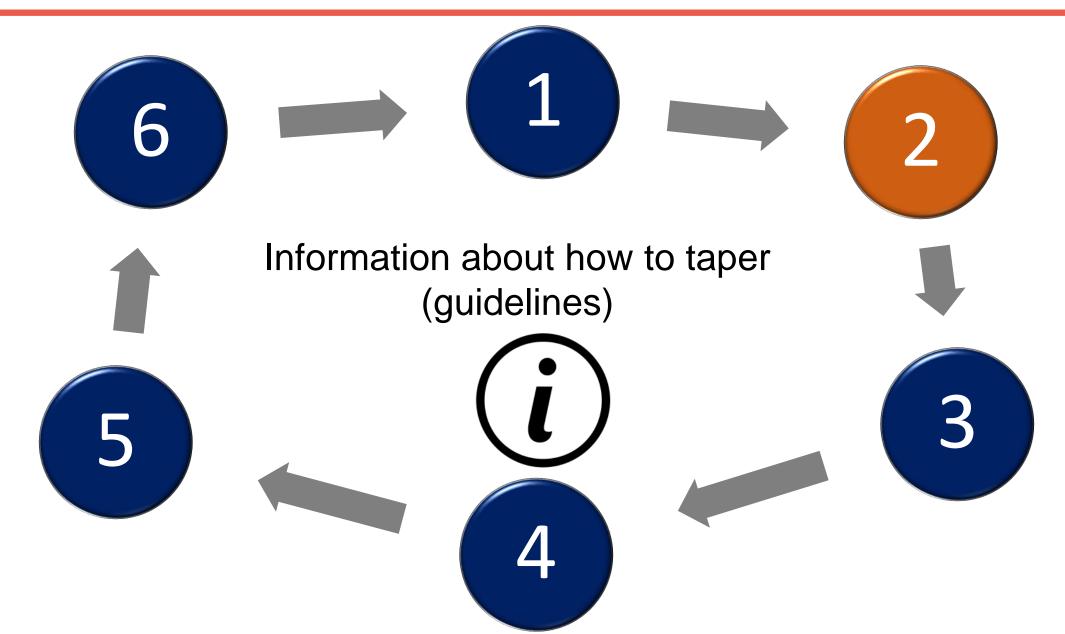
• Research evidence from opioid deprescribing trials

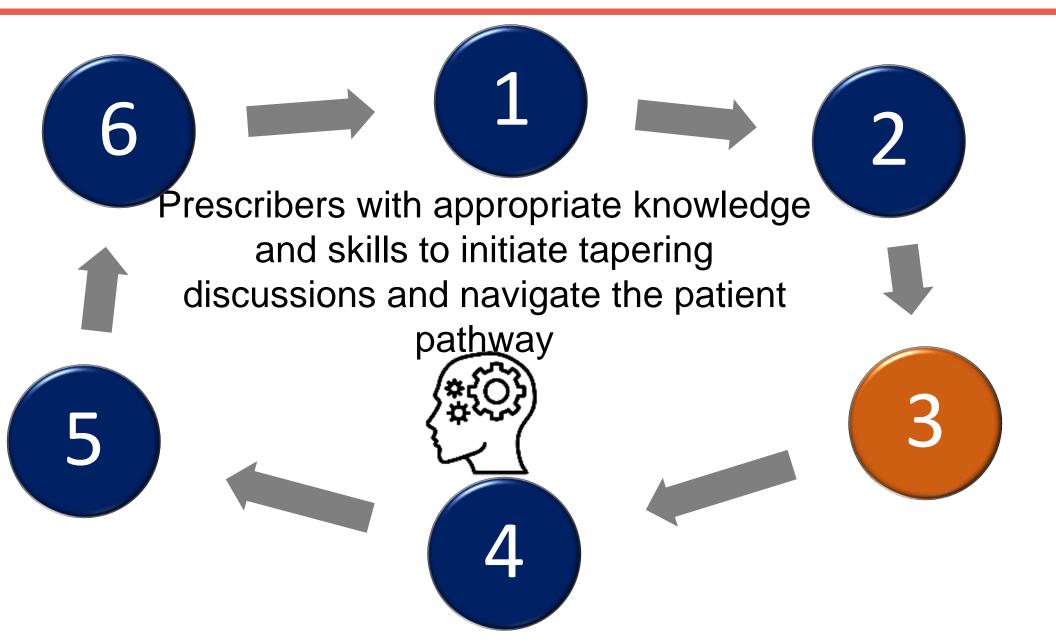


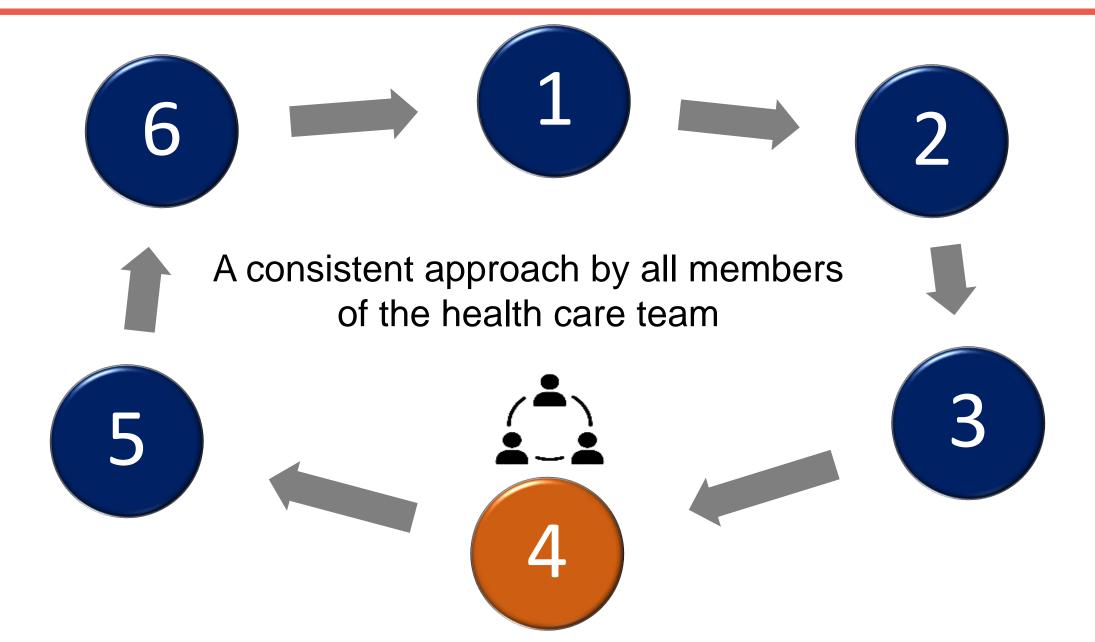
 Practice evidence from national survey of opioid deprescribing service managers/commissioners

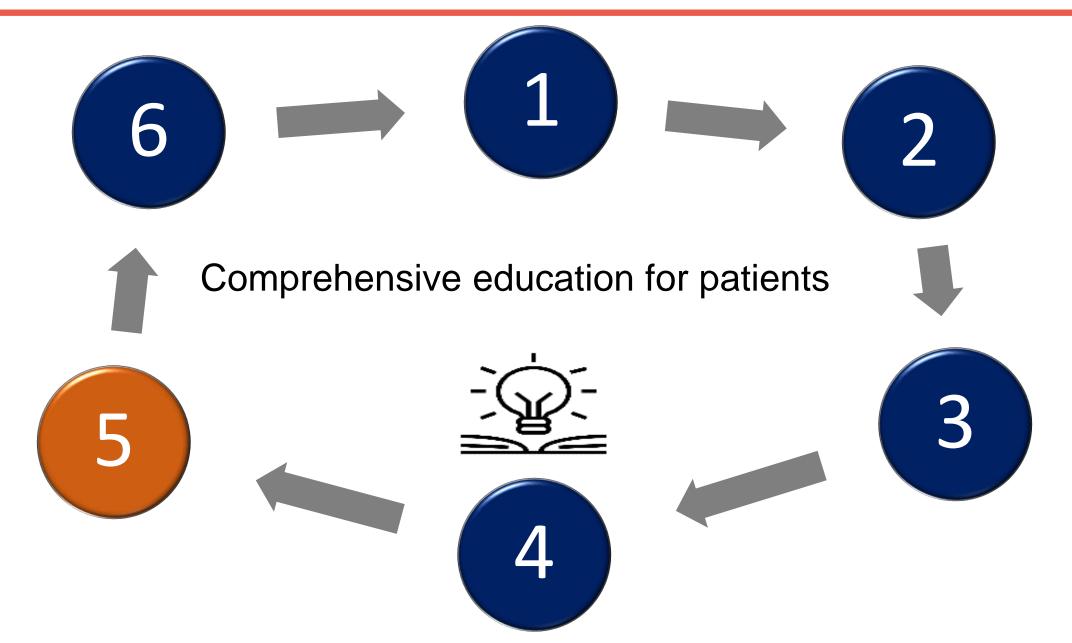




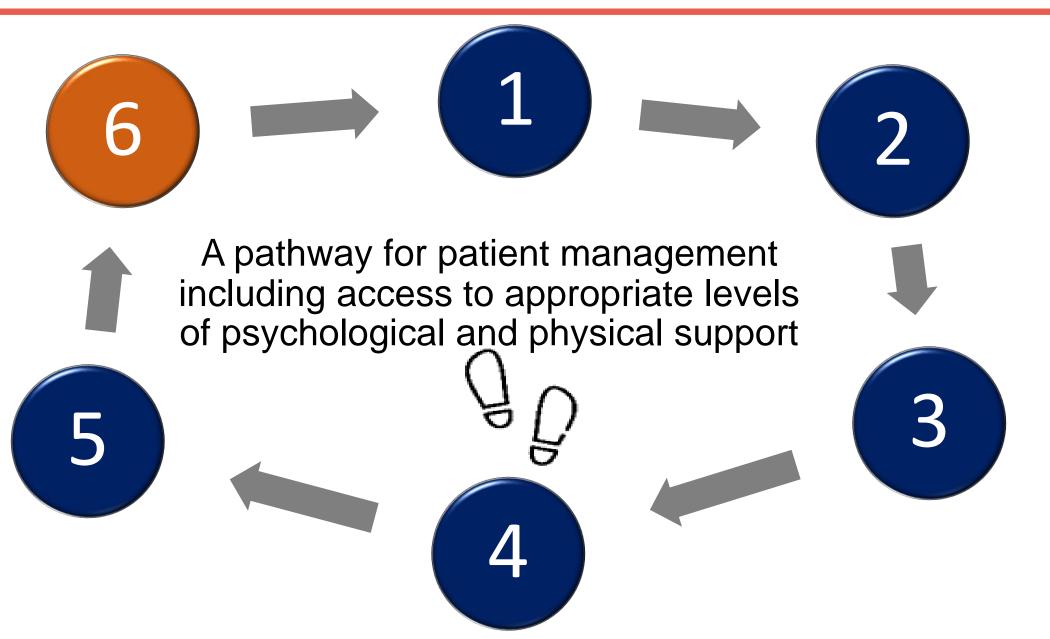




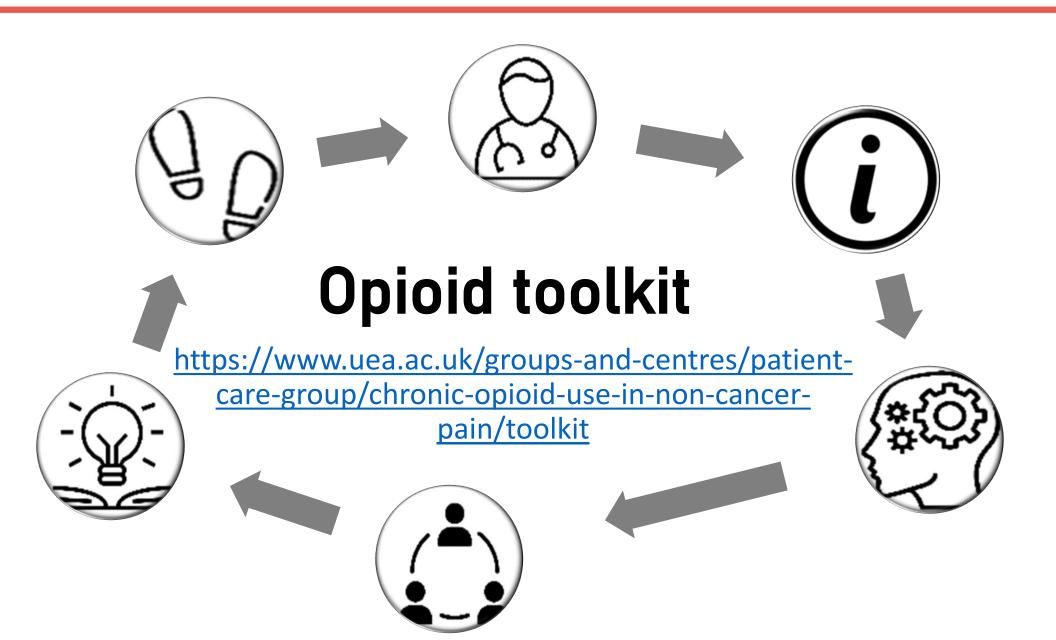




Ageing and Multi-morbidity



Ageing and Multi-morbidity



- What medicines optimisation challenges need behavioural science
- How would you like to take this forward?
- How can the ARC support you in making this happen?

## A behaviour change intervention for deprescribing in the hospital setting

#### Sion Scott



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### The problem<sup>1-3</sup>

- 51.3% of older hospital patients (≥65 years) prescribed at least one potentially inappropriate medicine on admission
  - Morbidity, mortality and rehospitalisation
- <1% of admission medication *proactively* deprescribed in hospital
- 99.8% of older hospital patients and family members would have a medicines deprescribed in hospital if suggested by a doctor



Gallagher, P., Lang, P. O., Cherubini, A., Topinková, E., Cruz-Jentoft, A., Montero Errasquín, B., Mádlová, P., Gasperini, B., Baeyens, H., Baeyens, J. P., Michel, J. P., & O'Mahony, D. (2011). Prevalence of potentially inappropriate prescribing in an acutely ill population of older patients admitted to six European hospitals. European Journal of Clinical Pharmacology, 67(11), 1175–1188.

Scott, S., Clark, A., Farrow, C., May, H., Patel, M., Twigg, M. J., Wright, D. J., & Bhattacharya, D. (2018). Deprescribing admission medication at a UK teaching hospital; a report on quantity and nature of activity. International Journal of Clinical Pharmacy. <a href="https://doi.org/10.1007/s11096-018-0673-1">https://doi.org/10.1007/s11096-018-0673-1</a>

Scott, S., Clark, A., Farrow, C., May, H., Patel, M., Twigg, M. J., Wright, D. J., & Bhattacharya, D. (2019). Attitudinal predictors of older peoples' and caregivers' desire to deprescribe in hospital. BMC Geriatrics, 19(1), 108.

- Understand geriatricians' and pharmacists' the barriers and enablers to proactive deprescribing in hospital
- Identify Behaviour Change Techniques to address barriers and enablers



#### Understand geriatricians' and pharmacists' the barriers and enablers to proactive deprescribing in hospital

Identify Behaviour Change Techniques to address barriers and enablers



### Methods

- Eight focus groups across four hospitals
  - 54 geriatricians and pharmacists
  - Two each of smaller district general and larger teaching hospital



- Topic guide underpinned by the Theoretical Domains Framework explored
  - Perceptions of *existing* deprescribing practice
  - Barriers and enablers to deprescribing



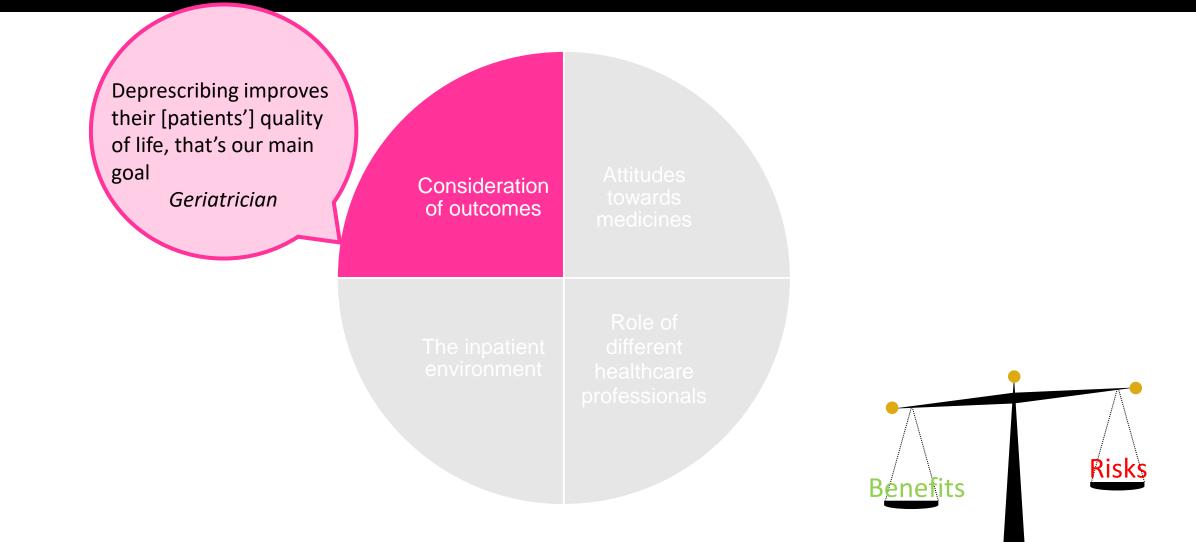
Analysis

Inductive thematic analysis Mapped barriers and enablers to the TDF Analysis

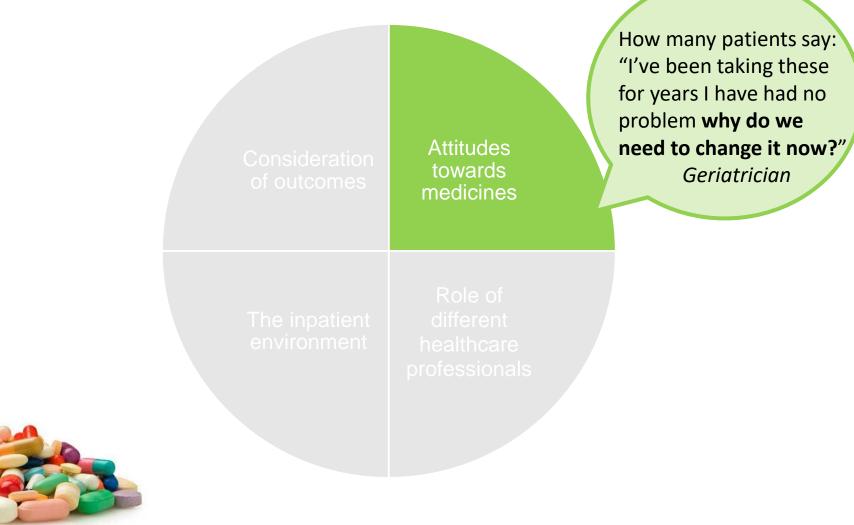
## Inductive thematic analysis

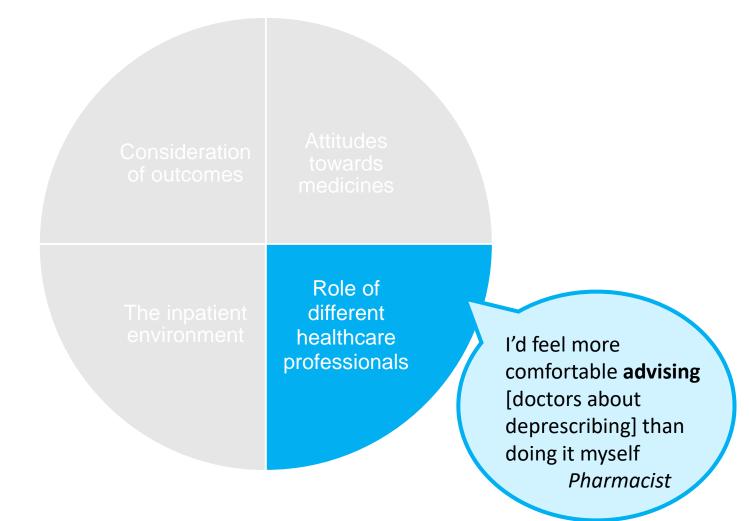
# Mapped barriers and enablers to the TDF

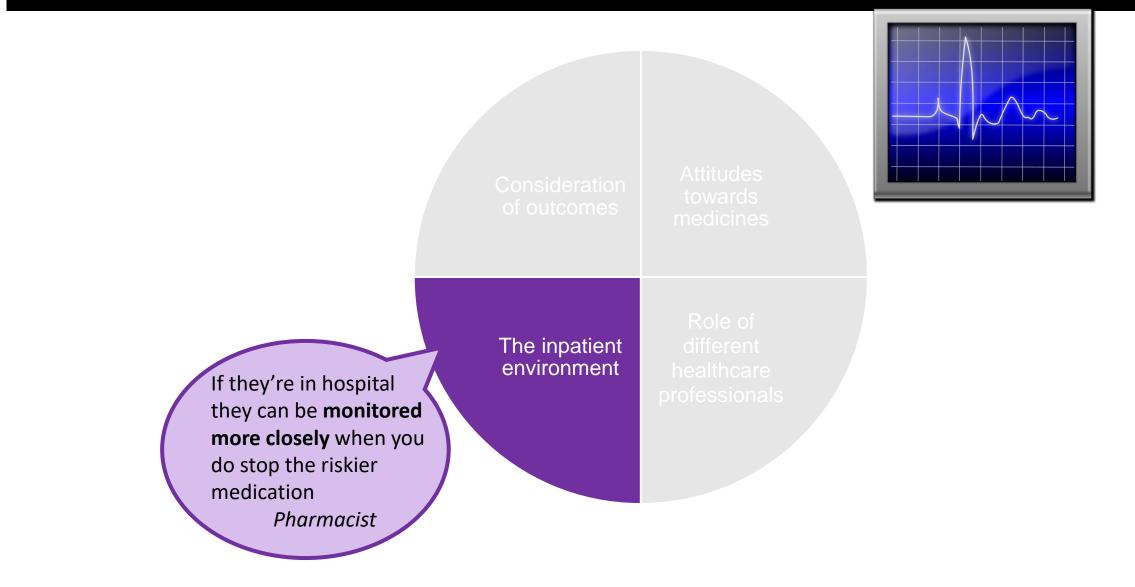
### Prioritised TDF domains for targeting

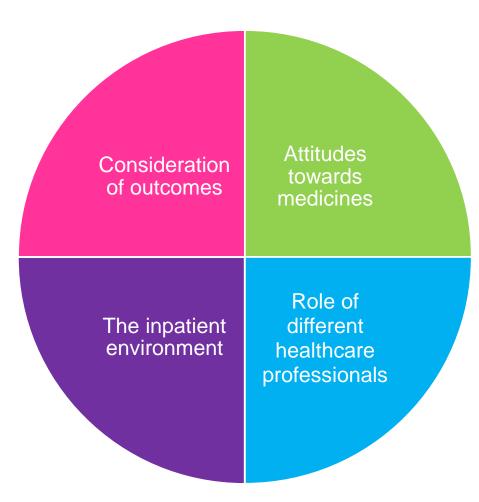


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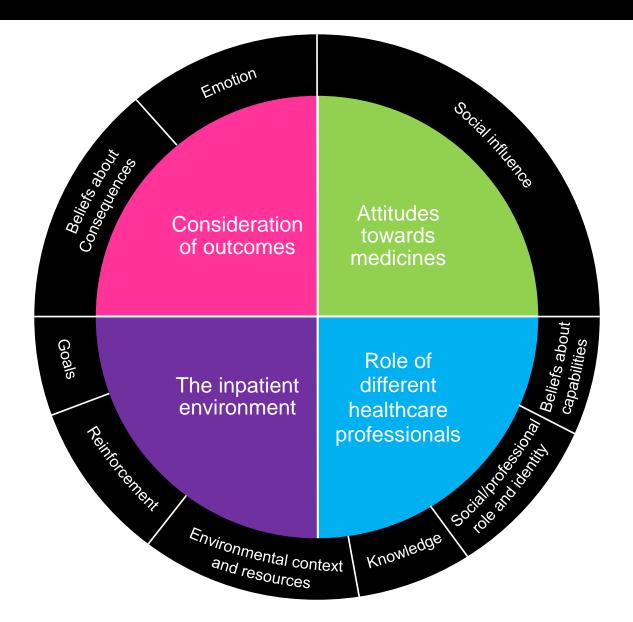




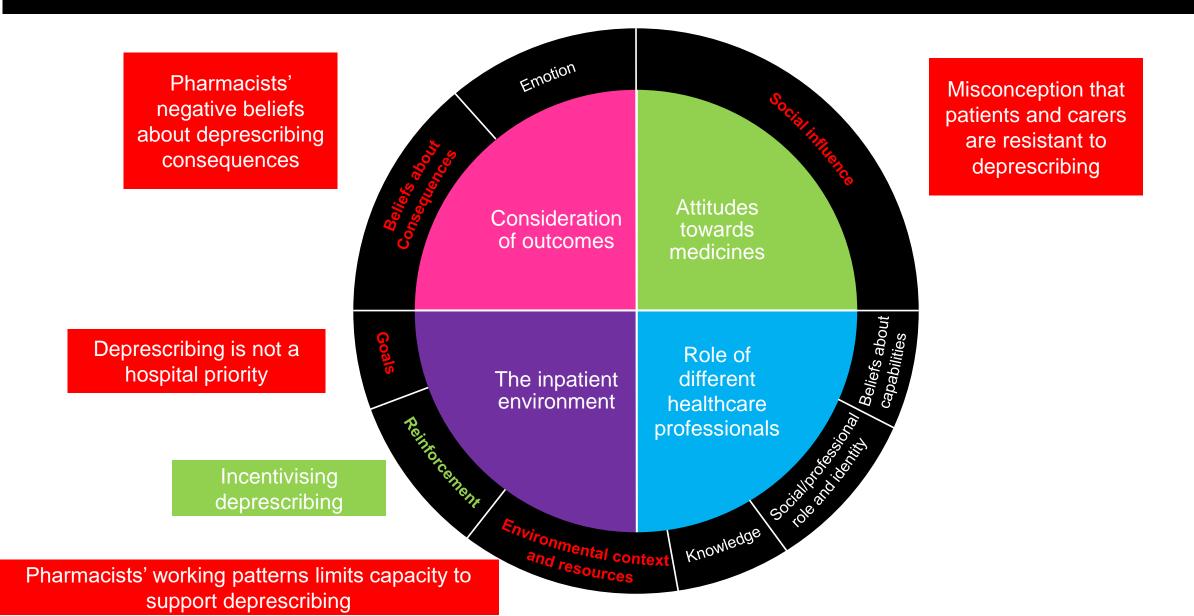




### TDF mapping



#### TDF domain prioritisation



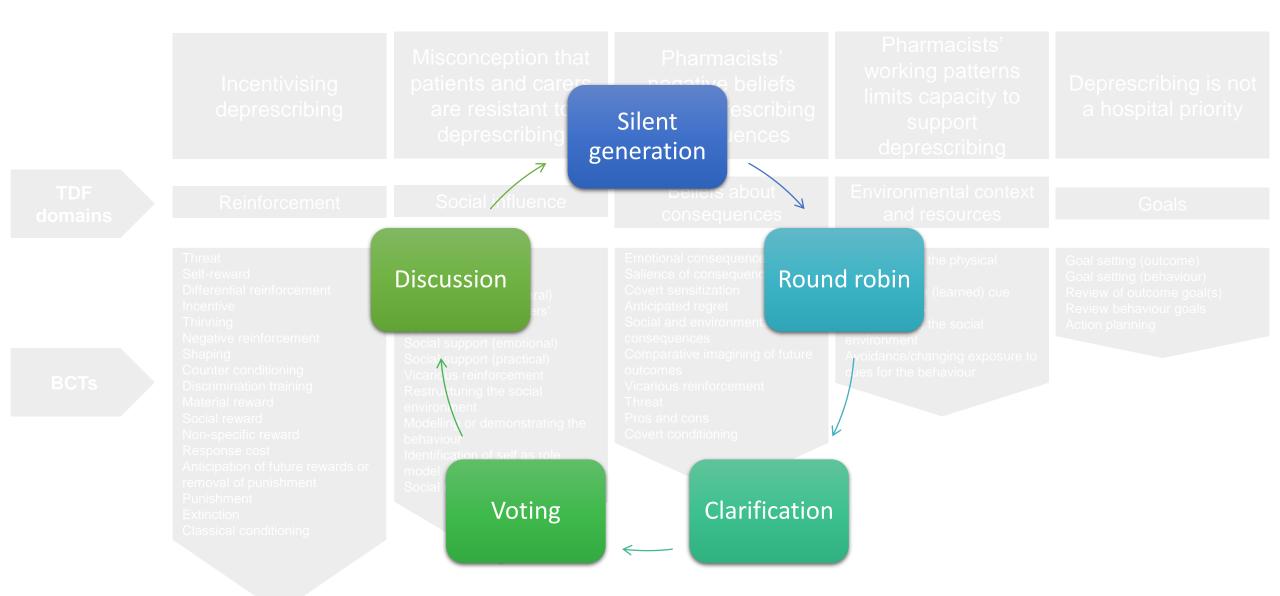
- Understand geriatricians' and pharmacists' the barriers and enablers to proactive deprescribing in hospital
- Identify Behaviour Change Techniques to address barriers and enablers



	Incentivising deprescribing	Misconception that patients and carers are resistant to deprescribing	Pharmacists' negative beliefs about deprescribing consequences	Pharmacists' working patterns limits capacity to support deprescribing	Deprescribing is not a hospital priority
TDF domains	Reinforcement	Social influence	Beliefs about consequences	Environmental context and resources	Goals
BCTs	Threat Self-reward Differential reinforcement Incentive Thinning Negative reinforcement Shaping Counter conditioning Discrimination training Material reward Social reward Social reward Non-specific reward Response cost Anticipation of future rewards or removal of punishment Punishment Extinction Classical conditioning	Social comparison Social support or encouragement (general) Information about others' approval Social support (emotional) Social support (practical) Vicarious reinforcement Restructuring the social environment Modelling or demonstrating the behaviour Identification of self as role model Social reward	Emotional consequences Salience of consequences Covert sensitization Anticipated regret Social and environmental consequences Comparative imagining of future outcomes Vicarious reinforcement Threat Pros and cons Covert conditioning	Restructuring the physical environment Discriminative (learned) cue Prompts/cues Restructuring the social environment Avoidance/changing exposure to cues for the behaviour	Goal setting (outcome) Goal setting (behaviour) Review of outcome goal(s) Review behaviour goals Action planning

Scott, S., Twigg, M. J., Clark, A., Farrow, C., May, H., Patel, M., Taylor, J., Wright, D. J., & Bhattacharya, D. (2020). Development of a hospital deprescribing implementation framework: A focus group study with geriatricians and pharmacists. Age and Ageing

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Incentivising deprescribing	Misconception that patients and carers are resistant to deprescribing	Pharmacists' negative beliefs about deprescribing consequences	Pharmacists' working patterns limits capacity to support deprescribing	Deprescribing is not a hospital priority
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Extinction Classical conditioning Social comparison Measuring, reporting and sharing deprescribing activity.	Social comparison Draw attention to practitioners who are successfully deprescribing by navigating the challenges of patients and caregivers being attached to medication.	Salience of consequences Emphasise the benefits of deprescribing and harmful consequences of failing to deprescribe in terms that will resonate with pharmacists. Pros and cons Advise pharmacists to list and compare the advantages and disadvantages of actively supporting deprescribing of	<b>Restructure the physical</b> <b>environment</b> Pharmacists to attend short multi-disciplinary team meetings	Action planning Set deprescribing as a high organisational priority, goals and specifying locally relevant steps to achieving the goal including specification of those responsible for contributing towards goals

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BCTs



Selecting patient outcomes and exploring trial design features for collecting outcomes in a modified Delphi study

**Developing the intervention package** with codesign workshops with target audience and local implementation stakeholders



**Feasibility testing** intervention and trial procedures and use the arising data to undertake pre-trial modelling of the intervention and refine trial procedures

4

Internal pilot and definitive trial cluster randomised control trial

5

Impact and dissemination throughout the programme and development of an implementation strategy for wider adoption



# Behavioural science applied to medicines optimisation challenges: Implementing deprescribing

## Curated Q and A



## Thank you!





**Debi Bhattacharya** Professor of Behavioural Medicine d.bhattacharya@uea.ac.uk

#### Sion Scott Lecturer in Behavioural Medicine s.scott@leicester.ac.uk

- What medicines optimisation challenges need behavioural science
- How would you like to take this forward?
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