Social science and infection prevention and control

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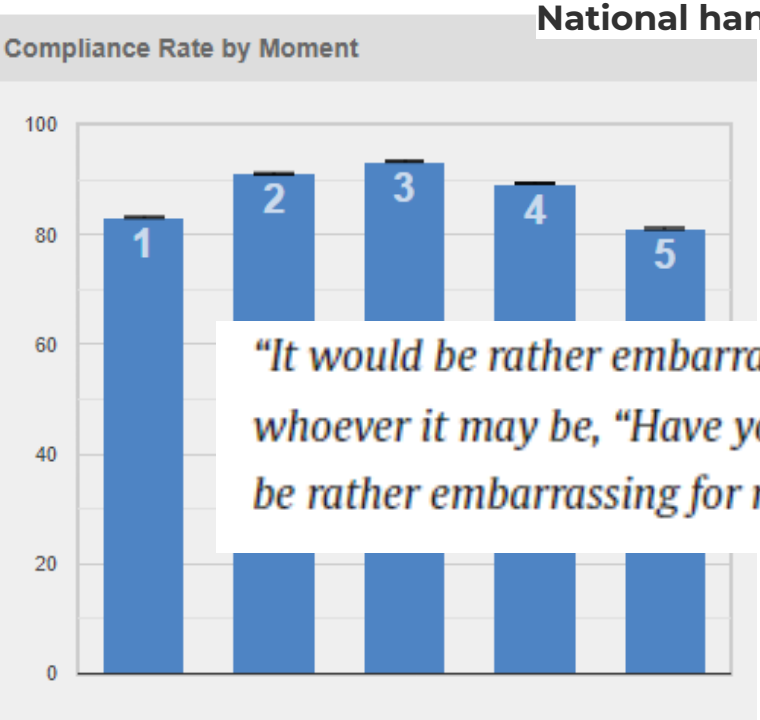
April 17, 2024

National hand hygiene audit data: July to Oct 2023



"It would be rather embarrassing for me to say to a hospital worker, whether it a nurse or whoever it may be, "Have you washed your hands before you've come to see me?" That would be rather embarrassing for me to ask them something like that …" (Interview 19)

'boxes of wall mounted gloves. Seen people pull gloves out, too many come out, they fall on the floor, so people pick up [the] gloves and put them back in the box!'

https://doi1e3eo0i66y.cloudfront.net/static-resources/national_report/0322ebd5-bb13-4bbd-84b4-0762307df14c/index.html?7aaf6ee5

Mitchell, Brett G et al, "Nurses' and Midwives' Cleaning Knowledge, Attitudes and Practices: An Australian Study" (2021) 26(1) *Infection, Disease & Health* 55

Seale, Holly et al, "Lifting the Curtains of Silence: Patient Perceptions towards Needs and Responsibilities in Contributing to the Prevention of Healthcare-Associated Infections and Antimicrobial Resistance" (2023) 51(8) *American journal of infection control* 852

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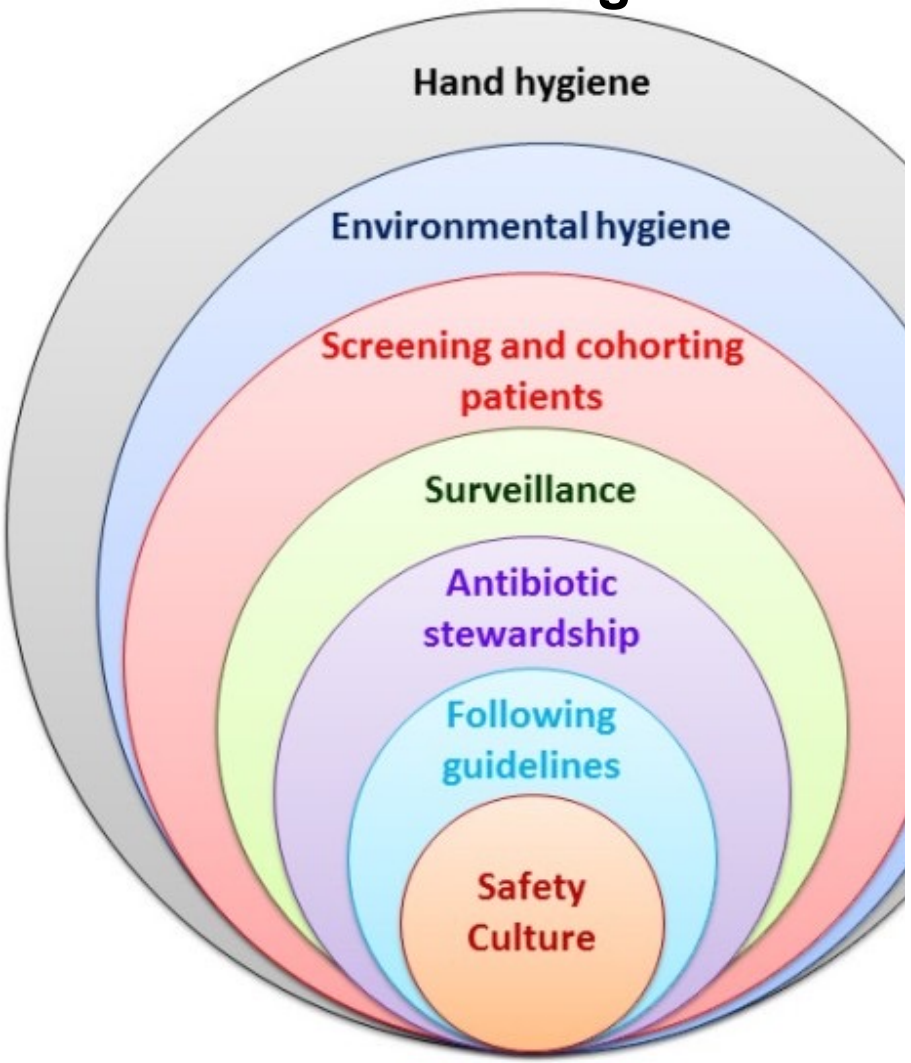
Evidence-based guidelines → Compliance/poor practice



What is social science

Social science is the study of people: as individuals, communities and societies; their behaviours and interactions with each other and with their built, technological and natural environments.

Social science seeks to understand the evolving human systems across our increasingly complex world and how our planet can be more sustainably managed.

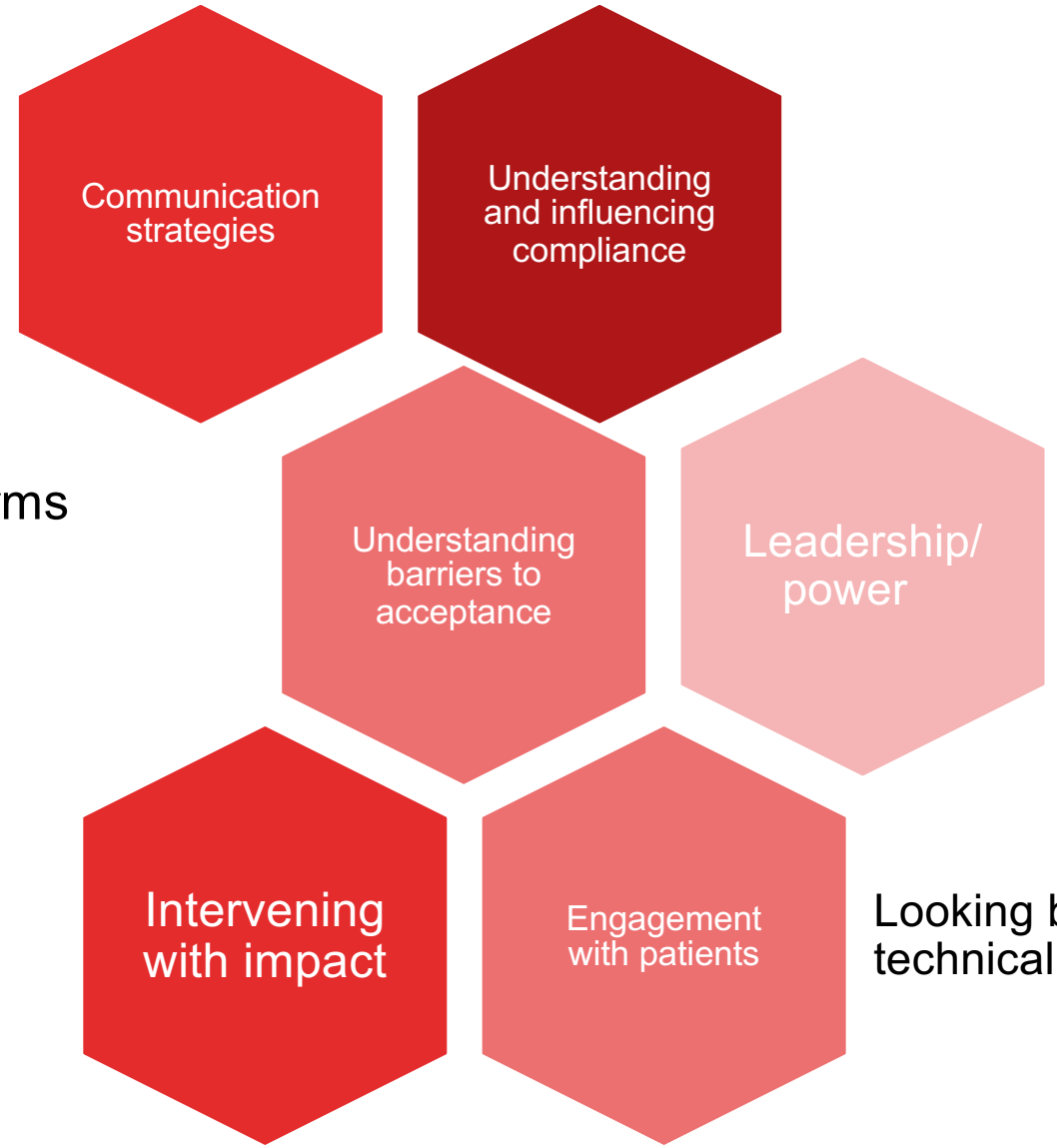
It's vital to our shared future.

Academy of Social Sciences

Disciplines: Sociology, psychology, anthropology, economics, political science.....

https://acss.org.uk/what-is-social-science/

“Focus not on the germs but on people….”
Julie Storr



Looking beyond the technical elements…

Creating an environment which encourages IPC behaviours makes it easier for them to be performed as a core part of everyday practice….

Greene, Carolynn and Jennie Wilson, “The Use of Behaviour Change Theory for Infection Prevention and Control Practices in Healthcare Settings: A Scoping Review” (2022) 23(3) *Journal of Infection Prevention* 108

Case study: **Healthcare worker vaccination**

What influences vaccine acceptance?

Most common concerns:

What motivates people to vaccinate?

- High perceived risk of developing disease
- Confidence in effectiveness and safety
- Trust in vaccine development processes
- Desire to protect vulnerable people
- Role models
- Trust in government and health systems
- Healthcare provider recommendation
- Vaccination is convenient

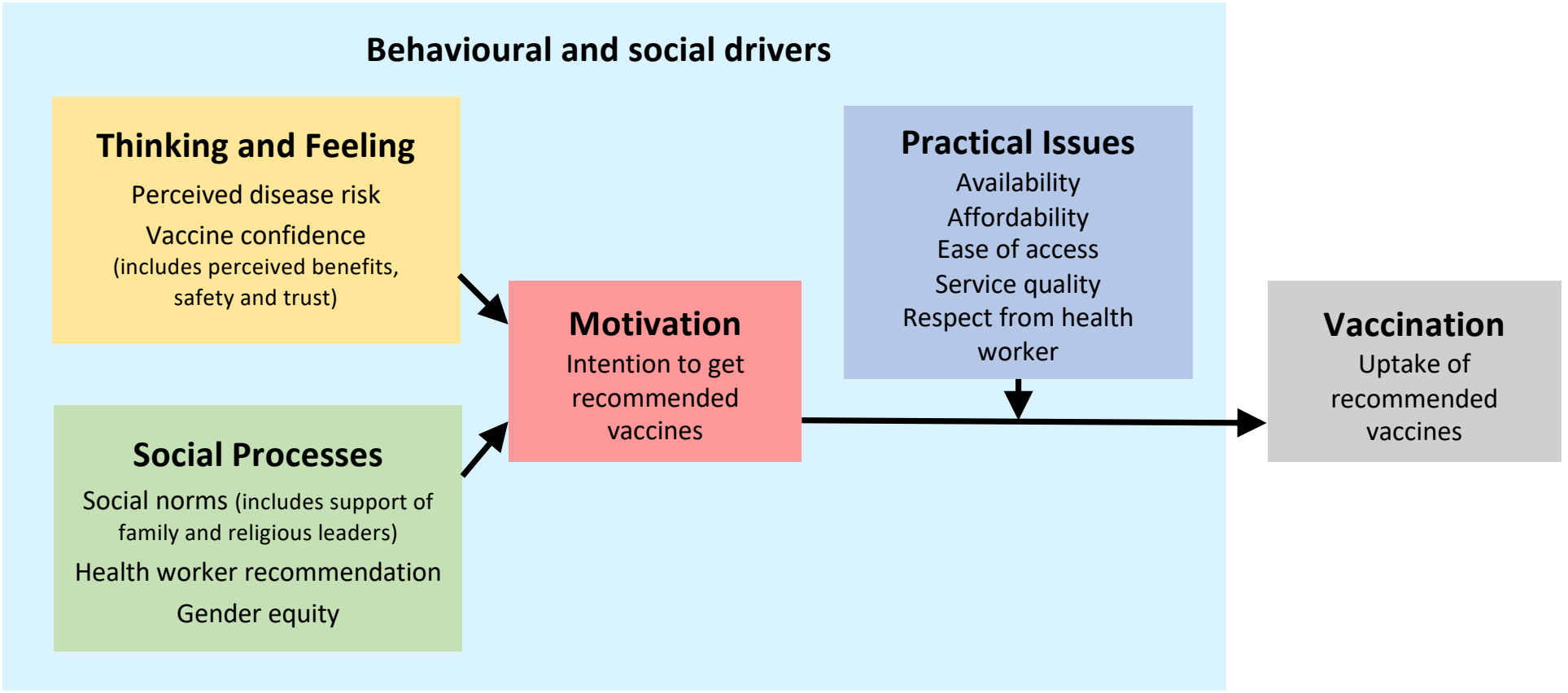
SOURCES:
- MCRI Vaccine Preparedness Study, May 2021 https://www.mcri.edu.au/sites/default/files/media/infographic_vp_study_28_5_21.pdf
- NCIRS, Factors influencing COVID-19 vaccine acceptance

Questions to consider

1. What influences influenza vaccine uptake in your hospital?
    - Consider individual beliefs, community influences, mandates and practical factors.

2. What works well in your setting for increasing influenza vaccine uptake?
    - Consider interventions at level of policy, organisations, providers and target population (parents, pregnant women, other adults)

What drives vaccine uptake?



The Behavioural and Social Drivers (BeSD) Framework. Source: The BeSD working group. Based on Brewer et al. Psychol Sci Public Interest. (2017)

Thinking and Feeling

Perceived disease risk

Vaccine confidence
(includes perceived benefits, safety and trust)

Vaccines, specifically in the safety and effectiveness

The delivery system

Health professionals

Those who recommend and develop the vaccines

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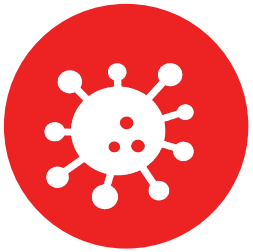
Thinking and Feeling

Perceived disease risk

Vaccine confidence
(includes perceived benefits, safety and trust)



Decision making around: disease severity

Decision making around: Perceived susceptibility

Accuracy of perceptions

Factors impacting: past experience, family history, media, contextual factors etc

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Practical Issues

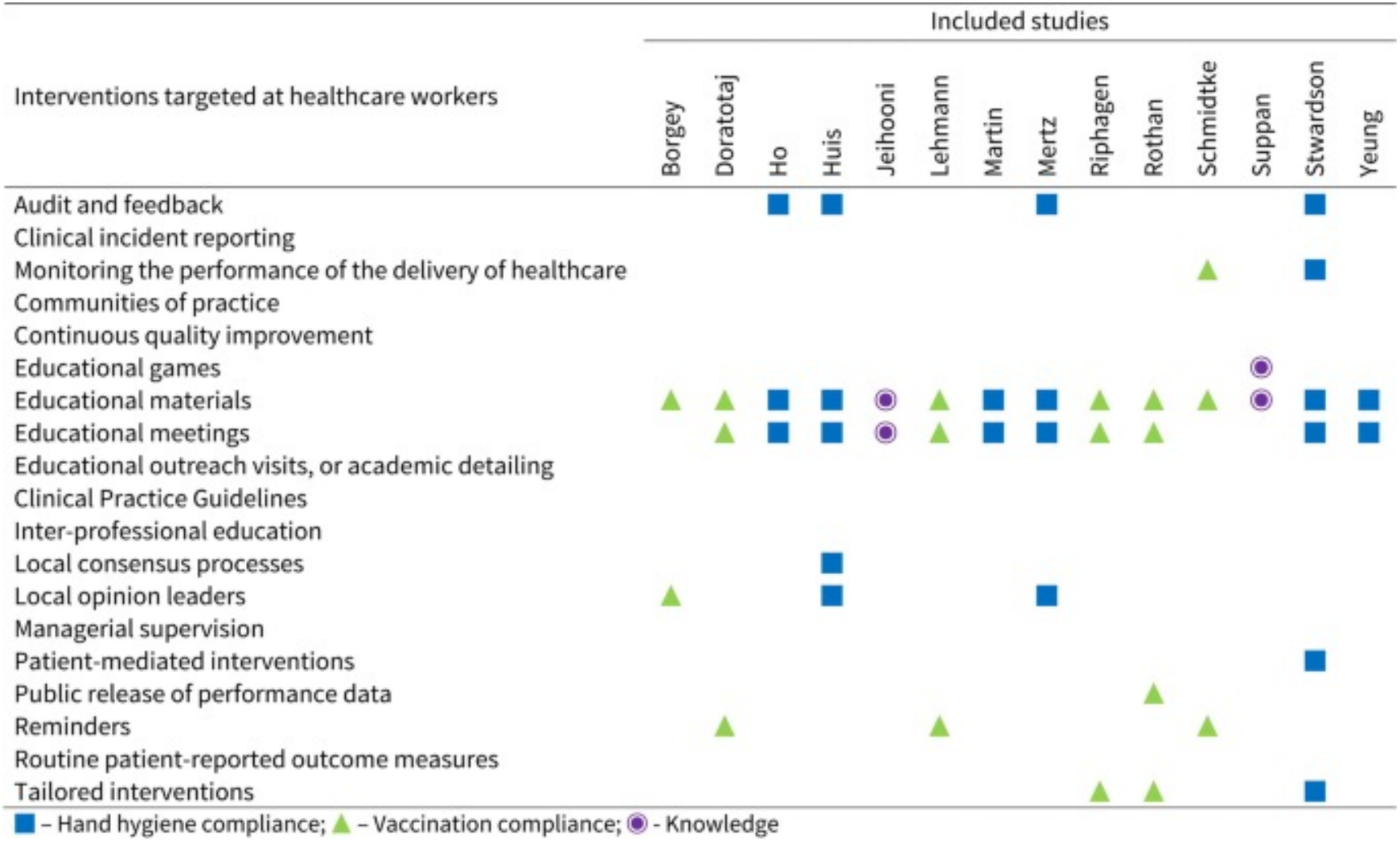
Availability
Affordability
Ease of access
Service quality
Respect from health worker

Cost: visit, vax, time off

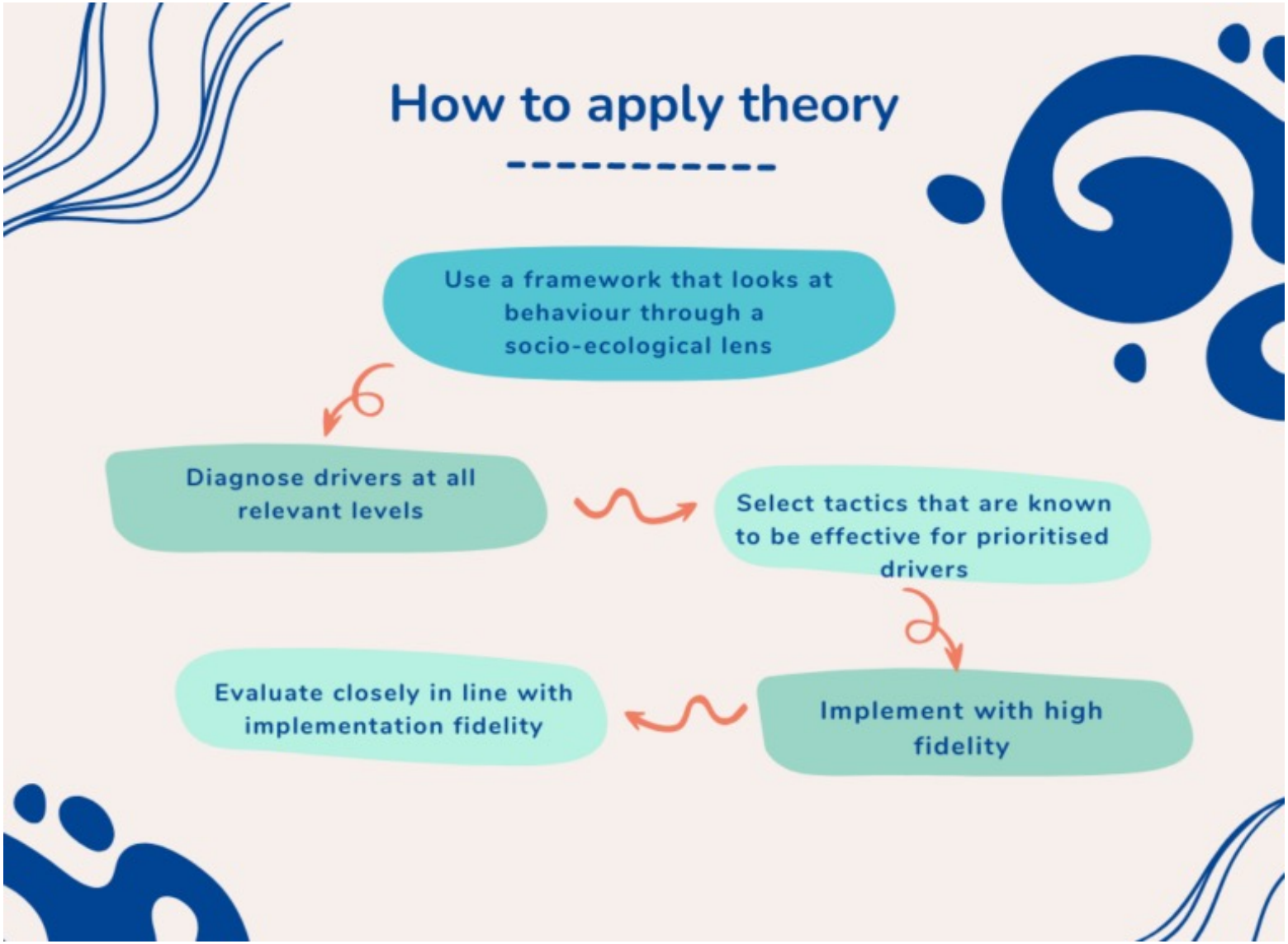
Ability to access services (health system literacy)

Reminder/recalls

Client satisfaction



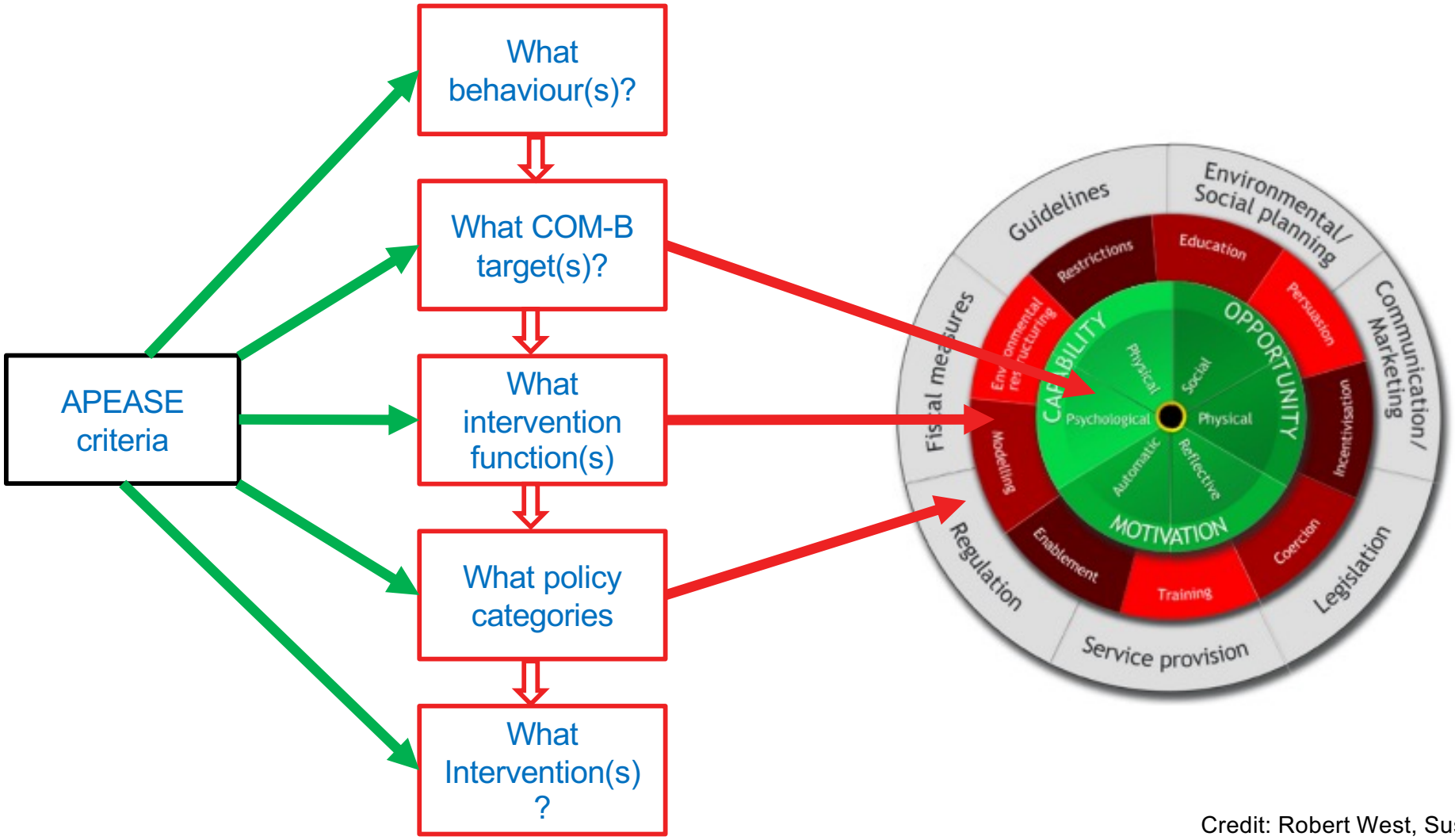
Silva, M.T., Galvao, T.F., Chapman, E. *et al.* Dissemination interventions to improve healthcare workers' adherence with infection prevention and control guidelines: a systematic review and meta-analysis. *Implementation Sci* **16**, 92 (2021). https://doi.org/10.1186/s13012-021-01164-6


How to apply theory
Use a framework that looks at behaviour through a socio-ecological lens
Diagnose drivers at all relevant levels
Select tactics that are known to be effective for prioritised drivers
Implement with high fidelity
Evaluate closely in line with implementation fidelity


Health Behavior Theories
Health Promotion
Health Education
Health Screenings
Disease Prevention
Health Impact Pyramid
What is a theory?
a way to explain something that happens
Types of theories → 3 levels
health behavior
① intrapersonal ② interpersonal ③ community
Public Health Interventions
Theories Constructs + Limitations
Health Belief Model
Individual level
6 Constructs:
1) Perceived susceptibility
2) Perceived severity
3) Perceived benefits
4) Perceived barriers
5) Cue to action
6) Self efficacy
Limitations:
- Equal access to info on disease
- Cues to action prevalent in encouraging action
- Decision-making process
Theory of Planned Behavior
Individual level
6 Constructs:
1) Attitudes
2) Behavioral intention
3) Subjective norms
4) Social norms
5) Perceived power
6) Perceived behavioral control
Limitations:
- Assumes equal access
- Does not account factors that influence intention
- Assumes behavior is linear & does not consider time
Transtheoretical Model
Individual Level
6 Stages of Change:
1) Precontemplation
2) Contemplation
3) Preparation
4) Action
5) Maintenance
6) Termination
Limitations:
- Decision-making process
- No clear sense of time within each stage
- No social context
Social Cognitive Theory
Interpersonal level
6 Constructs:
1) Reciprocal determinism
2) Behavioral capability
3) Observational learning
4) Reinforcements
5) Expectations
6) Self efficacy
Limitations:
- Assumes change in environment leads to change in person
- Unclear which factors play role
- Broad reaching
Diffusion of Innovation
Community Level
Adoption:
1) Relative advantage
2) Compatibility
3) Complexity
4) Triability
5) Observability
@HealthByHarb


The Behaviour Change Wheel
A Guide to Designing Interventions
Susan Michie, Lou Atkins & Robert West


Behavior Change Wheel
01
System for developing behavior change interventions
02
Inter-disciplinary - not psychological
03
Multi-level: Individual, organizational, & population
04
Links interventions with models of behavior
05
Uses whatever evidence is available & guides search for evidence
06
Tool to guide thinking and action - not a rigid prescription
07
Promotes system thinking

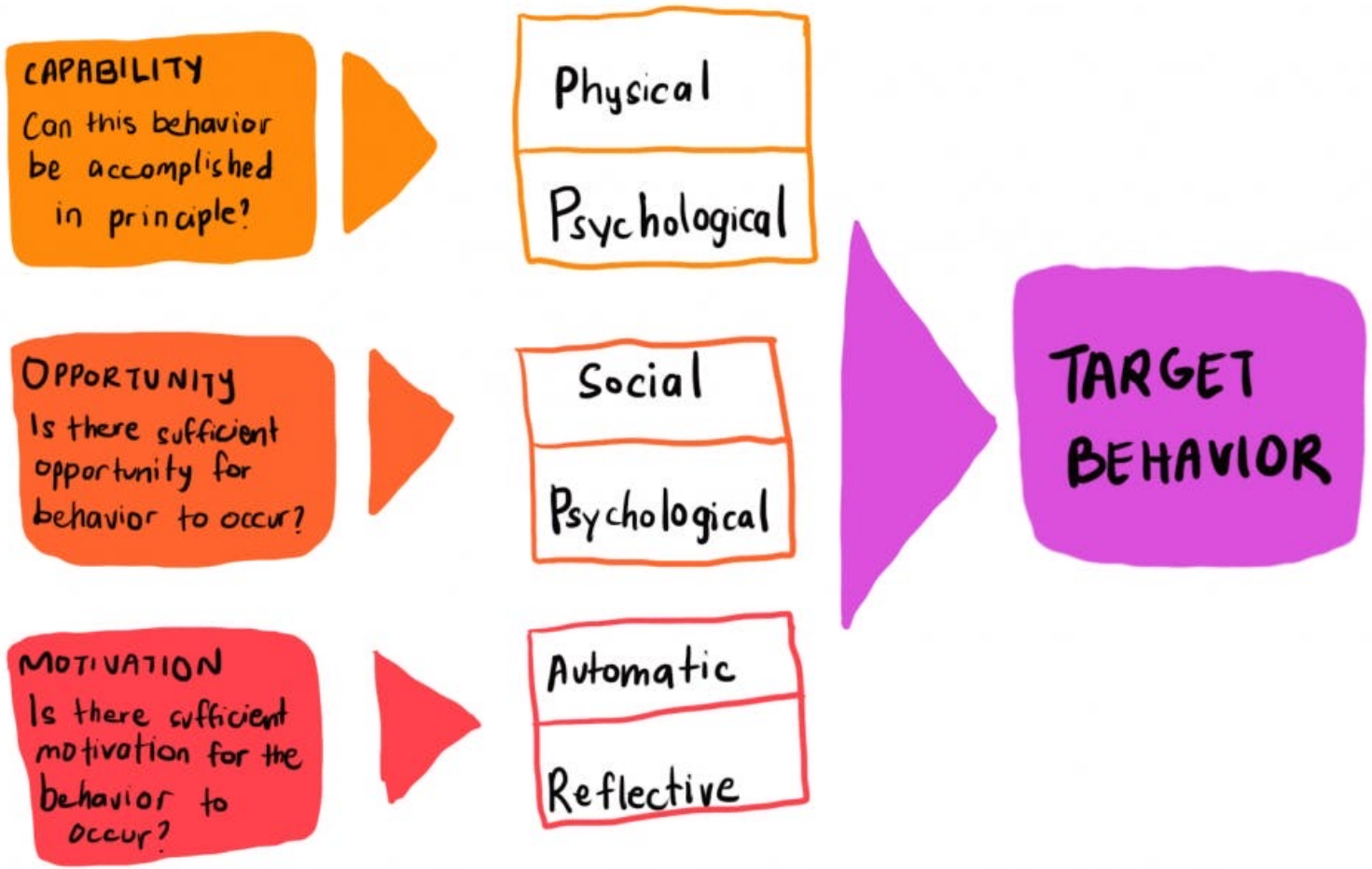


Credit: Robert West, Susan Michie
University College London

What behaviour(s)?

- Choose ones that are:
  - Impactful
  - Changeable
  - Understood
  - Sustainable
- Do not be side-tracked by ones that are:
  - Appealing to stakeholders
  - Unsupportable
  - Unachievable
  - Narrow in focus

Credit: Robert West, Susan Michie
University College London



https://thedecisionlab.com/reference-guide/organizational-behavior/the-com-b-model-for-behavior-change

What COM-B target(s)?

Do the people one is aiming to influence ..?

- Know about the behaviour, and understand why it is important for them and how to do it (C)
- Have the psychological and physical make-up needed for the behaviour (C)
- Have the time and financial and material resources to enact the behaviour (O)
- Have the social or material support required (O)
- See the behaviour as normal and commonplace (M)
- Have the willingness to prioritise the behaviour and/or can they be led to enact the behaviour without thinking (M)

Credit: Robert West, Susan Michie
University College London

World Health Organization | iris. Institutional Repository for Information Sharing

English

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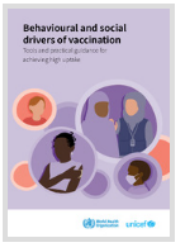
Behavioural and social drivers of vaccination: tools and practical guidance for achieving high uptake



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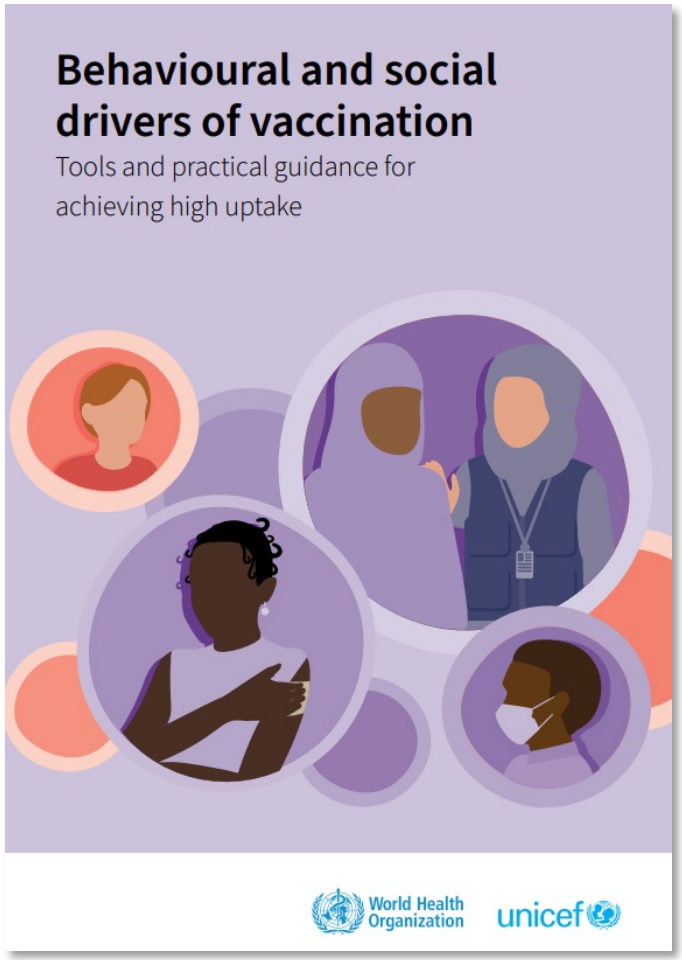


Behavioural and social drivers of vaccination: tools and practical guidance for achieving high uptake (who.int)

Summary of all topics measured:

Thinking and feeling	Motivation	Social processes	Practical issues
✪ Confidence in vaccine benefits	✪ Intention to get vaccinated	✪ Family norms	✪ Know where to get vaccination
● Confidence in vaccine safety	● Vaccine confidence – brand	● Peer norms	✪ Affordability
○ Perceived risk – self	● Willingness to recommend vaccine to others	● Religious leader norms	● Received recall
○ Confidence in health workers		● Community leader norms	● Ease of access
		● Health worker recommendation	● Reasons for low ease of access
		○ Workplace norms	● Service satisfaction
			● Service quality
			○ On-site vaccination

Demographics
Age
Gender
Occupation
*Health worker role
Risk

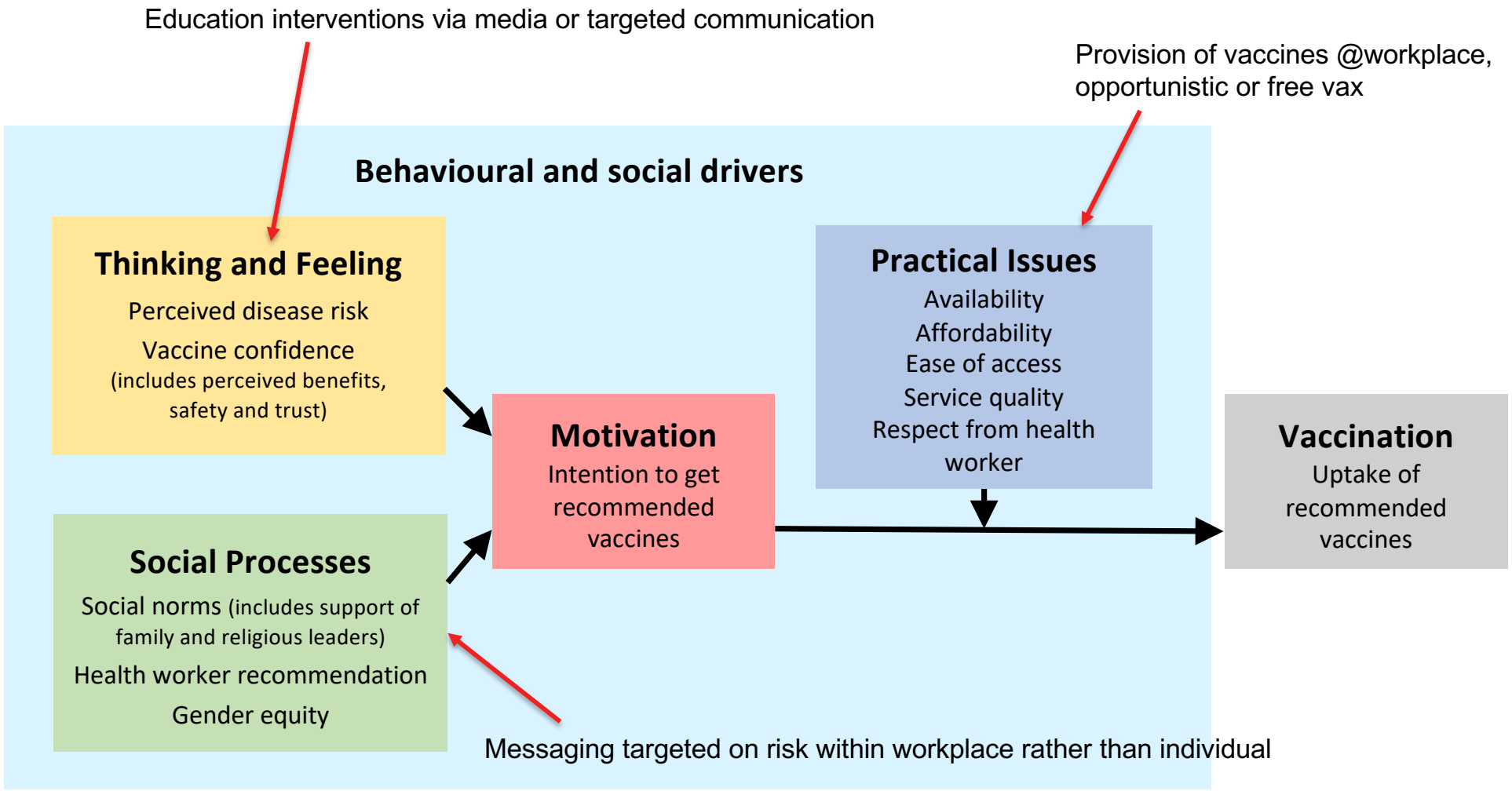
● Main survey question.
✪ Priority question in main survey.
○ Optional question.

Moving from data to action:

Promising interventions by BeSD domain to guide planning

Domain where problem is identified	Interventions shown to increase vaccination
Thoughts and feelings and Motivation	Campaigns to inform or educate the public about vaccination Dialogue-based interventions, including one-to-one counseling to encourage vaccination
Social processes	Community engagement Positive social norm messages Vaccine champions and advocates Recommendations to vaccine from health workers
Practical issues	Reduced out-of-pocket costs Service quality improvements Reminder for next dose /recall for missed dose Onsite vaccination at home, work and school Default appointments Incentives School and work requirements (mandates)

NB: Multi-component interventions more effective than single – and M&E always needed



Perroud, Janamarie M et al, "Adult Vaccination Uptake Strategies in Low- and Middle-Income Countries: A Systematic Review" (2022) 40(36) *Vaccine* 5313

The Behavioural and Social Drivers (BeSD) Framework. Source: The BeSD working group. Based on Brewer et al. Psychol Sci Public Interest. (2017)

EASY - If a decision requires minimal effort, it is more likely to be the one that is chosen.	This is most relevant to the COM-B Targets: Capability and Opportunity
• **Harness the power of defaults – making the desired action the default option makes it more likely to be selected**	Increase opportunity through environmental restructuring so that the desired behaviour does not require conscious effort
• **Reduce the hassle factor of taking up a service**	Increase opportunity through environmental restructuring so that the desired behaviour is quick and does not require physical, mental or material resources
• **Simplify messages – making messages clear and concise can increase response rates and engagement**	Improve education, training and persuasion by making communication more comprehensible

Credit: Robert West, Susan Michie
University College London

ATTRACTIVE – If something is attractive, we will be drawn to it.	**This is most relevant to the COM-B Target: Motivation**
• **Use bold and striking colours and professional imagery**	This does not fit very well under the 'Attractive' heading. It suggests using imagery to increase salience that may apply to any Intervention Function
• **If a choice has a financial reward or other incentives, we'll be drawn to that – and if it captures our attention we'll be more likely to engage**	Use incentivisation and improve its effect by increasing their salience

Credit: Robert West, Susan Michie
University College London

SOCIAL – We are social beings – we care about what our peers are doing, and what they think of us.	This is most relevant to the COM-B Targets: Social Opportunity and Motivation
• **Show that most people perform the desired behaviour – use social proof to highlight and reinforce participation**	This advises on the use of social models to increase the effectiveness of any Intervention Function
• **Use the power of networks – peer relationships are very important to us, both in person and online**	This advises on the use of peer relationships to increase the effectiveness of any Intervention Function
• **Encourage people to make a commitment to others – commitment devices voluntarily 'lock ourselves' into doing something in advance**	Use commitment as a form of persuasion and coercion.

Credit: Robert West, Susan Michie
University College London

TIMELY – The time that you choose to prompt or 'nudge' someone towards a desired behaviour is vitally important.	This is a feature of a range of interventions that may influence effectiveness
• Prompt people when they're most likely to be receptive – behaviour is easier to change when habits are already disrupted	This is advice on when to deliver a range of interventions
• Consider the immediate costs and benefits – we're more influenced by costs and benefits that take effect immediately	This is advice on how to improve the effect of incentivisation and coercion
• Help people plan their response to events – identify the barriers to action and develop a plan to address them	This not appear to relate to the overall heading of Timeliness but is a way of enacting the BCW Intervention Function, Enablement

Credit: Robert West, Susan Michie
University College London

Strategies that can increase vaccination coverage - from systematic reviews

Reducing out-of-pocket expenses
Vaccination requirements

Community engagement
Multiple combined interventions

On-site vaccination (work, school, childcare)
Standing orders
Provider support, assessment, feedback & reminders
Provider recommendation
Home visiting

Positive social norm messages
Behaviour change counselling

Reminder/recall systems
Default appointments
Incentives
Planning prompts
Education when used in combination

Sources
1. Wiley K, Leask J. The drivers of COVID-19 vaccine uptake and strategies to increase vaccination rates. *The Global Health Security Network*, 2022.
2. Universally recommended vaccinations: community-based interventions implemented in combination www.thecommunityguide.org/vaccines/universally/communityinterventions.html
3. Brewer NT, Chapman GB, Rothman AJ, Leask J, and Kempe A (2017). Increasing vaccination: Putting psychological science into action. *Psychological Science for the Public Interest*. 18(3): 149-207

Resources

www.unlockingbehaviourchange.com

Unlocking Behaviour Change
Resources for behaviour change

www.ucl.ac.uk/behaviour-change

UCL Centre for Behaviour Change

http://www.behaviourchangewheel.com

Review

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The use of behaviour change theory for infection prevention and control practices in healthcare settings: A scoping review

Carolynn Greene, BSc, MSc and Jennie Wilson, PhD

Abstract

Background: Infection prevention and control (IPC) practices performed by healthcare workers are key to the prevention and management of infections. Compliance with IPC practices is often low, they are therefore commonly the focus of improvement interventions. Designing interventions that are based on behaviour change theories may help to improve compliance to practice. The aim of this review is to synthesise the evidence on the application of behaviour change theories to interventions to improve IPC practice in healthcare settings.

Methods: A scoping review was conducted following the Joanna Briggs Institute methodological framework. The theories of focus were the Theoretical Domains Framework (TDF), Capability, Opportunity, Motivation, Behaviour (COM-B) and Behaviour Change Wheel (BCW). Studies which applied these theories to any IPC practice were included.

Results: Eleven studies were identified which met the inclusion criteria. The IPC behaviours investigated were hand hygiene (7), antimicrobial stewardship (3), and MRSA screening (1). Nine studies explored barriers and facilitators to existing IPC practice; three used their findings to design a behaviour change intervention or tool. Domains of 'beliefs about consequences', 'environmental context/resources', and 'social/professional role and identity' were identified as key across all three IPC behaviours.

Discussion: This review has demonstrated the use of behavioural theories to understand determinants of behaviour related to IPC practice. Currently, there are few published examples of interventions to improve IPC practice that have been underpinned by behavioural theory. Practitioners in IPC should consider the use of these methods to enhance the efficacy of strategies to change healthcare worker behaviour.

Keywords

behaviour change theory, infection prevention, scoping review

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