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# EVIDENCE-BASED INTERVENTION DESIGN FOR BEHAVIOUR CHANGE DURING A HEALTH EMERGENCY

## A toolkit based upon the COM-B model and Behaviour Change Wheel

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**LONDON METROPOLITAN UNIVERSITY**

## UNICEF Europe and Central Asia

UNICEF works with and for disadvantaged children and adolescents across 22 countries and territories in Europe and Central Asia where we have country programmes. We also have programmes to respond to the needs of refugee and migrant women and children in the Czech Republic, Greece, Hungary, Italy, Poland and Slovakia, as well as engagement with institutions across many more countries to uphold the rights of children. In line with our mandate, shaped by the Convention on the Rights of the Child (CRC) and the Sustainable Development Goals (SDGs), we work to ensure that no child is left out of economic and social progress.

# Background

A health emergency may occur without warning, placing public policymakers and practitioners under immense pressure to make important decisions to protect the populations in their care.

Non-pharmaceutical interventions (NPIs), such as social distancing, mask wearing and self-isolating, are critical in tackling the transmission of an infectious disease during a health emergency. Most NPIs can have a negative impact on the general well-being of people, the functioning of society, and the economy. The NPIs covered in this quick guide are those considered to have a critical role in preventing transmission of infectious disease but which have the least impact on the functioning of society and the economy. As well as NPIs, uptake of an effective vaccine can serve to tackle the transmission of infectious disease and protect against infectious disease, if caught.

This toolkit aims to support local and national decision-makers by providing a framework for taking evidence-based decisions to support people to receive an effective vaccine and adhere to NPI measures at a population level.

## Changing behaviour

Behaviour change is central to encouraging vaccine uptake and adherence to NPIs. Behaviour change is complex. Behaviour can be driven by past events, thoughts and emotions, sometimes in opposition to our intentions and plans. We are creatures of habit.

To change a behaviour, first an understanding of the behaviour is required, to identify influencing factors so that intervention strategies can be developed accordingly.

A systematic approach to the development of intervention strategies is required – with all available options considered, based on evidence of what has worked in similar situations, giving the intervention strategy the best chance of success. Theoretically grounded intervention strategies are more likely to result in successful behaviour change (NICE 2014; Craig et al. 2008).

## Taking a theoretical approach

Behaviour comes about from an interaction between one's 'capability' to perform a behaviour and the 'opportunity' and 'motivation' to carry out that behaviour. A new behaviour or behavioural change requires a change in one or more of these components. This theory is known as the COM-B model (capability, opportunity and motivation = behaviour) (Michie et al. 2011).

**Table 1: Components of the COM-B model**

| | Description |
|---|---|
| Capability | Physical capability: Physical skill, strength or stamina<br><br>Psychological capability: Knowledge or psychological skills, strength or stamina to engage in the necessary mental processes |
| Opportunity | Physical opportunity: Opportunity afforded by the environment involving time, resources, locations, cues and physical 'affordance'<br><br>Social opportunity: Opportunity afforded by interpersonal influences, social cues and cultural norms |
| Motivation | Reflective motivation: Reflective processes involving plans and evaluations<br><br>Automatic motivation: Automatic processes involving emotional reactions, desires, impulses, inhibitions, drive states and reflex responses |

People need the capability, opportunity and motivation to engage in and sustain a desired behaviour. Intervention strategies should make behaviours normal, easy, attractive and routine (SAGE 2021). The COM-B model sits at the centre of an intervention development framework called the Behaviour Change Wheel, a synthesis of 19 behaviour change frameworks (Michie et al. 2011).

The Behaviour Change Wheel is an actionable framework for developing behaviour change interventions that has been used by national governments (Public Health England 2020), including to prevent transmission of SARS-CoV-2 (West et al. 2020). Use of the COM-B model is advocated by the European Centre for Disease Prevention and Control (ECDC), with its systematic application optimizing strategies to promote NPIs (ECDC 2020). People need to understand what to do, how to do it and why it is important (capability), in an environment that supports the behaviour (opportunity). People must be motivated to perform a behaviour (motivation) with it built into their habits and routines (SAGE 2021).

The Behaviour Change Wheel guide to designing interventions (Public Health England 2020) provides an evidence-based, stepped approach to changing behaviours. It encourages intervention designers to consider a full range of options, choosing only those that

are most promising through a systematic evaluation. Public health decisions often have to be made rapidly, sometimes with limited information. The Behaviour Change Wheel can be applied even if limited information is available, helping decision-makers to consider all intervention approaches and implementation strategies, as well as identifying where additional information may be needed (Craig et al. 2008).

The Behaviour Change Wheel follows four steps towards intervention design; these steps can be used to develop new intervention strategies or to evaluate and adapt existing intervention approaches:

1. **Understanding the behaviour:** The first step in using the Behaviour Change Wheel requires defining and specifying the target behaviour, understanding what needs to change and creating a behavioural diagnosis using the COM-B model.

2. **Intervention strategy selection:** The next step is to consider nine potential intervention functions that can bring about change in an individual's capability, opportunity and motivation, selected based upon an evaluation of their acceptability, practicability, effectiveness, affordability, side effects (positive and negative) and equity.

| Intervention function | Definition | Can influence... |
|---|---|---|
| Education | Increasing knowledge or understanding | Capability (physical) and motivation (reflective) |
| Persuasion | Using communication to induce positive or negative feelings or stimulate action | Motivation |
| Incentivization | Creating the expectation of a reward | Motivation |
| Coercion | Creating the expectation of a punishment or cost | Motivation |
| Training | Imparting skills | Capability, opportunity (physical) and motivation (automatic) |
| Environmental restructuring | Changing the physical or social context | Opportunity and motivation (automatic) |
| Modelling | Providing an example for people to aspire to | Opportunity (social) and motivation (automatic) |
| Restrictions | Implementing rules and regulations to restrict engagement in a target behaviour | Opportunity |
| Enablement | Reducing barriers and increasing means beyond education, training and environmental restructuring | Capability, opportunity and motivation (automatic) |

It is plausible that all intervention functions will be necessary in some form or other to promote NPI-related behaviours. A multifaceted approach, across stakeholders and levels of influence, is likely to stand the best chance of successful sustained behaviour change.

3.  **Implementation strategy selection:** The next step in the design of an intervention strategy to influence NPI-related behaviours is to consider the policy categories to support delivery of the identified intervention functions. The policy categories should be evaluated for their acceptability, practicability, effectiveness, affordability, side effects (positive and negative) and equity.

**Table 3: Implementation strategies in the Behaviour Change Wheel**

| Implementation strategy | Definition | Can influence... |
|---|---|---|
| Environmental and social planning | Controlling the physical and social environment | Environmental restructuring |
| Communications and marketing | Using print, electronic, telephonic or broadcast media | Education, persuasion, incentivization, coercion and modelling |
| Legislation | Using laws | Education, persuasion, incentivization, coercion, training, restrictions, environmental restructuring and enablement |
| Service provision | Delivering a service | Education, persuasion, incentivization, coercion, training, modelling and enablement |
| Regulation | Using rules and principles | Education, persuasion, incentivization, coercion, training, restrictions, environmental restructuring and enablement |
| Fiscal measures | Using a tax system to reduce or increase costs | Incentivization, coercion, training, environmental restructuring and enablement |
| Guidelines | Recommending or mandating practice | Education, persuasion, incentivization, coercion, training, restrictions, environmental restructuring and enablement |

4.  **Delivering the intervention strategy:** The final step in the design and development of an intervention strategy is to consider the specific behaviour change techniques to use, and the mode and schedule of delivery. The Behaviour Change Wheel identifies 93 possible behaviour change techniques (Michie et al. 2014; 2013). A full review of all these techniques is out of the scope of this quick guide; however, a selection of widely used techniques for each intervention function is included as an appendix for intervention designers to consider (Michie et al. 2014). As in the previous steps, intervention designers are encouraged to consider the acceptability, practicability, effectiveness, affordability, side effects (positive and negative) and equity of potential behaviour change techniques.

## Using this toolkit

This toolkit aims to provide decision-makers with a broad understanding of the factors which may influence the behaviours of vaccine hesitancy, social distancing, self-isolation, mask wearing and handwashing, with case study examples of what has worked to influence these behaviours.

To support this quick guide, a rapid review of the evidence has been undertaken to understand the behaviours of social distancing, self-isolation, mask wearing, handwashing and vaccine hesitancy. Having a broad understanding of behaviour is the foundation upon which intervention strategy selection and implementation should be based. However, behaviour is context-specific. What works to influence behaviour in one area may not work in another. Decision-makers should consider people's

understanding of new phenomena and the associated risks; these are likely to differ between social groups and communities. People will likely use previous experiences as an anchor upon which they base current perceptions; this should also be considered (NICE 2014). Certain groups, such as minority and socioeconomically deprived groups, may face additional behavioural barriers. Care is required when developing approaches to overcome behavioural barriers to avoid stigmatizing the groups concerned; this is best achieved by creating supportive environments with complementary, targeted, co-produced interventions.

Those involved in the design and development of intervention strategies to influence behaviours related to NPIs should ask the following questions:

1. Are the capability, opportunity and motivational factors outlined in this quick guide applicable to this population?

2. Are there additional capability, opportunity and motivational factors that need to be considered when designing intervention approaches to influence behaviour?

3. Is more information required on the specific population that I am trying to influence and, if so, how can I collect and analyse it?

Those involved in the design and development of intervention strategies to influence behaviours related to NPIs should then consider the broad range of intervention functions, selecting the appropriate implementation strategies, discussing and assessing the acceptability, practicability, effectiveness, affordability, side effects (positive and negative) and equity of each. Finally, consideration should be given to the mode and schedule of delivery and the behaviour change techniques outlined in the appendix.

Engagement with all the stakeholders who can influence intervention delivery and whom the intervention is trying to influence is crucial to success. Sustained behaviour change requires a coordinated, multifaceted approach, across stakeholder groups and organizations (NICE 2014).

Monitoring and evaluating the resulting intervention strategies are required. The mechanisms to do this will need to be decided as part of the intervention development process based on the resources available and the aims of the intervention strategy. Intervention designers need to consider not just the assessment of outcomes but also develop an understanding of the process of implementation and delivery.

Key questions for intervention designers to consider when developing and evaluating an intervention strategy are as follows (ECDC 2020):

1. Did the solution work?

2. Can the intervention strategy be repeated?

3. Does the intervention strategy need to be refined?

4. Can the intervention strategy be scaled up?

5. Can the intervention strategy be sustained?

The behaviours of vaccine hesitancy, social distancing and mask wearing are now covered in turn; the evidence supporting the identified COM-B components and demographic factors for each is covered in the companion papers to this quick guide. Decision-makers should review this information, giving consideration to their own populations.

## Vaccine hesitancy

The capability, opportunity and motivational factors that may influence vaccine hesitancy in response to SARS-CoV-2 transmission as identified in the REA are presented in Table 4.

Table 4: Implementation strategies in the Behaviour Change Wheel

| COM-B component | Why do people delay or refuse receiving the vaccine? |
|---|---|
| Capability (psychological) | Lack of knowledge or belief in conspiracy theories [73% of studies, 8 out of 11] |
| | Users of social media for COVID-19 information [83% of studies, 5 out of 6] |
| Opportunity (social) | Right-wing or conservative voters [70% of studies, 7 out of 10] |

| Motivation (reflective) | Perception that the vaccine is not safe or causes side effects [100% of studies, 16 out of 16] |
| --- | --- |
| | Perception that the vaccine is not effective [80% of studies, 4 out of 5] |
| | Low perceived vulnerability if catching COVID-19 [79% of studies, 11 out of 14] |
| | Low perceived susceptibility to catching COVID-19 [54% of studies, 7 out of 13] |
| | Low trust in healthcare professionals [100% of studies, 6 out of 6] |
| | Low trust in government [83% of studies, 5 out of 6] |

## Who delays or refuses receiving the vaccine?

- Younger people are more likely to be vaccine hesitant [55 per cent of studies, 26 out of 47].

- Females are more likely than males to be vaccine hesitant [69 per cent of studies, 31 out of 45].

- Those with lower income are more likely to be vaccine hesitant: as income increases, vaccine hesitancy decreases [57 per cent of studies, 12 out of 21]

- Members of Black ethnic groups are most likely to be vaccine hesitant [65 per cent of studies, 11 out of 17].

- Unmarried people are more likely to be vaccine hesitant [63 per cent of studies, 5 out of 8].

The evidence in support of these findings can be found in the following companion paper:

Predictors of COVID-19 Vaccine Acceptance, Delay and Refusal: Who accepts, delays or refuses COVID-19 vaccines, why and in what context? A Rapid Evidence Assessment, London Metropolitan University Performance with Purpose Research Centre, UNICEF Innocenti – Global Office of Research and Foresight, Florence, 2023.

## Influencing vaccine hesitancy

A 2022 systematic review conducted by Singh and colleagues (2022) investigated strategies to overcome vaccine hesitancy. Singh and colleagues concluded that a multidimensional approach involving community members, families and individuals is required to address this challenging issue. The review was not specific to COVID-19, but offers some useful suggestions; community-based interventions, monetary incentives and technology-based health literacy demonstrated significant improvement in the utilization of immunization services. Some of these approaches can be seen in an innovative approach used in the Southwest of England to improve uptake of the COVID-19 vaccine.

## Case study: Innovative approach to vaccine hesitancy in the Southwest of England (NHS England, n.d.)

An integrated care scheme in the Southwest of England encouraged people from a range of communities who were vaccine hesitant to receive a COVID-19 vaccination. Collaborative working was at the heart of the programme and contributed to its success. Multiple stakeholders with an understanding about the local communities came together to enable messages to be tailored at community level; a diverse range of approaches was used.

The programme included translated materials and films shared on preferred social media channels, a film presented by and for people with a learning disability explaining the vaccination process, immunization services embedded within mental health clinics, virtual community meetings with faith groups, visits to authorized Gypsy, Roma and Traveller sites, a pop-up vaccine clinic in the local mosque, and a vaccine bus targeting large blue-collar workplaces and isolated rural areas.

### Intervention functions used in this example

- Education

- Modelling

- Enablement

- Environmental restructuring

### Implementation strategies used in this example

- Communications and marketing

- Service provision

# Social distancing

The capability, opportunity and motivational factors that may influence social distancing in response to SARS-CoV-2 transmission as identified in the REA are presented in Table 5.

**Table 5: The capability, opportunity and motivational factors that may influence social distancing adherence**

| COM-B component | Why do people delay or refuse receiving the vaccine? |
| --- | --- |
| Capability (psychological) | Lack of knowledge or belief in conspiracy theories [80% of studies, 4 out of 5] |
| Opportunity (social) | Right-wing or conservative voters [80% of studies, 4 out of 5] |
| Motivation (reflective) | Low perceived control over social distancing [100% of studies, 5 out of 5] |

## Who does not adhere to social distancing measures?

- Younger age groups are more likely to be non-adherent: as age increases, adherence to social distancing increases [59 per cent of studies, 13 out of 22].

- Essential workers are more likely to not adhere to social distancing measures [75 per cent of studies, 3 out of 4].

The evidence in support of these findings can be found in the following companion paper:

Predictors of Social Distancing to Prevent the Community Spread of SARS-CoV-2: Who does not adhere to social distancing measures, why and in what context? A Rapid Evidence Assessment, London Metropolitan University Performance with Purpose Research Centre, UNICEF Innocenti – Global Office of Research and Foresight, Florence, 2023.

## Influencing the behaviour of social distancing

A 2021 systematic review from Sadjadi, Mörschel and Petticrew (2021) on how to overcome the barriers to the implementation of social distancing measures highlights the importance of good communication and the need for wide-ranging support from authorities to increase acceptability and adherence. This review (Sadjadi et al. 2021) further highlights the importance of using appropriate legislation and community involvement. A group of behavioural and social scientists advising the UK Government on COVID-19 suggested the following options for improving adherence to social distancing (Michie et al. 2020).

## Options to increase general social distancing

- Provide clear and precise guidance

- Use media to increase the sense of personal threat, and the responsibility to others, and positive messaging around action

- Messages tailored to specific groups

- Promote social approval of social distancing and disapproval of non-compliance

- Enact legislation

- Develop and mobilize community infrastructure

- Provide resources to mitigate effects of measures on equity.

**Intervention functions**

- Education

- Persuasion

- Incentivization

- Coercion

- Environmental restructuring

**Implementation strategies**

- Communications and marketing

- Legislation

- Regulation

- Fiscal measures

- Guidelines

- Environmental/social planning

## Case study: Modelling in Colombia

Communication with communities is vitally important in any successful COVID-19 response programme. UNICEF workers in Colombia used a variety of communication and delivery channels depending on the local context. Initially, COVID-19 cases were primarily in urban areas in Colombia, so UNICEF focused on digital media. As COVID-19 cases spread to more rural areas, community radio stations were used, as well as speaking with indigenous community leaders to disseminate information on preventative measures, using co-created context-specific messages.

Adaptation of the messaging for the local context and population, such as for indigenous communities and migrant populations, was important. For example, iconic and local animals from different territories were used as a point of reference to understand the concept of physical distancing. Saying "stay two chigüiros apart" helped people to visualize what a distance of 2 metres looks like.

At the beginning of the pandemic, many communities were fearful. People were afraid of the virus and did not want staff from UNICEF and its partners to come to their communities. The approach was adapted, using a car and a loudspeaker to communicate COVID-19 messages, travelling through the settlements, accompanied by a fun and interactive drama group. When community visits did happen, initially personal protective equipment such as HAZMAT suits were worn – raising the question within the communities as to why so much protection was being worn by visitors when they only had access to masks. Respecting the same measures being asked of communities, the approach was changed to wearing masks only and maintaining a physical distance of 2 metres, which proved successful.

**Intervention functions used in this example**

• Education

• Modelling

**Implementation strategies used in this example**

• Communications and marketing

## Mask wearing

The capability, opportunity and motivational factors that may influence mask wearing in response to SARS-CoV-2 transmission as identified in the REA are presented in Table 6.

**Table 6: The capability, opportunity and motivational factors that may influence mask wearing adherence**

| COM-B component | Why do people not adhere to mask wearing measures? |
|---|---|
| Opportunity (social) | Low perceived social normative pressure to wear a mask [86% of studies, 6 out of 7] <br><br> Right-wing or conservative voters [100% of studies, 5 out of 5] |
| Motivation (reflective) | Low perceived mask wearing effectiveness [60% of studies, 3 out of 5] <br><br> Low perceived susceptibility to catching COVID-19 [80% of studies, 4 out of 5] |

## Who does not adhere to mask wearing measures?

• Males are more likely to not adhere to mask wearing measures than females [55 per cent of studies, 6 out of 11].

• Those who are less educated are more likely to not adhere to mask wearing measures [57 per cent of studies, 4 out of 7].

• Members of Black ethnic groups are most likely to wear a mask [60 per cent of studies, 3 out of 5].

The evidence in support of these findings can be found in the following companion paper:

Predictors of Mask Wearing to Prevent the Community Spread of SARS-CoV-2: Who does not adhere to mask wearing measures, why and in what context? A Rapid Evidence Assessment, London Metropolitan University Performance with Purpose Research Centre, UNICEF Innocenti – Global Office of Research and Foresight, Florence, 2023.

## Influencing the behaviour of mask wearing

Researchers from the University of Oxford argue that the use of face coverings needs to be grounded in social and cultural realities of communities. In doing so, those less likely to wear a face covering could select a covering with a design that is meaningful to them. The case study that follows highlights the effectiveness of mandated orders in implementing face mask use. This may not be politically acceptable in some areas and therefore, framing use as a sociocultural accessory, rather than relying solely on the use of medically focused public health messaging, could be impactful (BMJ Newsroom 2020).

## Case study: Minnesota, USA – mask wearing policy

On 25 July 2020, an Emergency Executive Order was implemented requiring Minnesotans to wear a face covering in certain settings. The Executive Order required all adults to wear a mask, with limited exceptions. A wide array of masks were permitted for use. Mask use was required in all indoor public spaces and indoor businesses. Workers were also required to wear masks outdoors when social distancing could not be maintained.

Temporary exemptions to mask wearing were allowed for people actively engaging in activities where mask wearing would be impractical, such as eating, drinking, exercising, showering, swimming or receiving a medical examination. Guidance was provided on the use of face masks, outlining that the mask must cover the mouth and nose completely, should not be overly tight or restrictive and should feel comfortable to wear. Fines of up to $100 were introduced for violations of the policy.

Localities and businesses were expressly permitted to enact more protective measures. Businesses were made responsible for ensuring staff and customers wore masks. Businesses were also required to post clear signage, visible to all. Licence suspensions and termination, plus fines of up to $25,000, were imposed. Minnesota also published a plain language frequently asked questions document explaining the mask mandate and made it available in several local languages, including English, Spanish, Somali and Hmong.

**Intervention functions used in this example**

- Education

- Coercion

- Enablement

- Restrictions

- Environmental restructuring

**Implementation strategies used in this example**

- Communications and marketing

- Legislation

- Regulation

- Fiscal measures

- Guidelines

## Summary

Behaviour change is fluid. Understanding behaviours is not a one-time task. It should be repeated regularly. Successful behaviour change approaches will require multiple layers of intervention using a combination of physical, social and psychological approaches. Behaviour change is context-specific. Decision-makers should work through the steps of the Behaviour Change Wheel as outlined, considering the behaviour that they are trying to influence; the capability, opportunity and motivation of their populations to enact the desired behaviour; and the intervention functions and implementation strategies that are within their gift. All stakeholders should be involved in the development of an intervention strategy. Ongoing monitoring and evaluation should continuously guide decision-making throughout the development and implementation process.

# References

BMJ Newsroom, 'Shifting public health messaging about face coverings could improve uptake', BMJ Newsroom website, 19 August 2020, <www.bmj.com/company/newsroom/shifting-public-health-messaging-about-face-coverings-could-improve-uptake/>, accessed 2 February 2023.

Craig, P., et al., 'Developing and evaluating complex interventions: The new Medical Research Council guidance', BMJ, 29 September 2008;337:a1655.

European Centre for Disease Prevention and Control (ECDC), 'Guidelines for the implementation of non-pharmaceutical interventions against COVID-19', ECDC website, 24 September 2020, <www.ecdc.europa.eu/en/publications-data/covid-19-guidelines-non-pharmaceutical-interventions>, accessed 2 February 2023.

Michie, S., Atkins, L., and West, R, *The Behaviour Change Wheel: A Guide To Designing Interventions*, Silverback Publishing, London, 2014, p. 332.

Michie S., et al., 'Reducing SARS-CoV-2 transmission in the UK: A behavioural science approach to identifying options for increasing adherence to social distancing and shielding vulnerable people', *British Journal of Health Psychology,* November 2020;25(4):945–56.

Michie, S., et al., 'The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions', *Annals of Behavioural Medicine*, Aug 2013;46(1):81–95.

Michie, S., et al., 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', Implementation Science, 23 April 2011;6(1):42.

National Institute for Health and Care Excellence (NICE), 'Behaviour change: Individual approaches', NICE website, 2 January 2014, <www.nice.org.uk/guidance/ph49>, accessed 2 February 2023.

NHS England, 'Innovative approach to vaccine hesitancy sees over 1000 homeless people vaccinated in Devon', NHS England website, <www.england.nhs.uk/integratedcare/resources/case-studies/innovative-approach-to-vaccine-hesitancy-sees-over-a-1000-homeless-people-vaccinated-in-devon/>, accessed 2 February 2023.

Public Health England, 'Behaviour change: Guides for national and local government and partners', GOV.UK, 13 February 2020, <https://www.gov.uk/government/publications/behaviour-change-guide-for-local-government-and-partners>, accessed 2 February 2023.

Sadjadi, M., et al., 'Social distancing measures: Barriers to their implementation and how they can be overcome – a systematic review', *European Journal of Public Health*, 1 December 2021;31(6):1248–58.

Scientific Advisory Group for Emergencies (SAGE), 'SPI-B: Sustaining behaviours to reduce SARS-CoV-2 transmission, 22 April 2021', GOV.UK, 30 April 2021, <www.gov.uk/government/publications/spi-b-sustaining-behaviours-to-reduce-sars-cov-2-transmission-30-april-2021/spi-b-sustaining-behaviours-to-reduce-sars-cov-2-transmission-22-april-2021>, accessed 2 February 2023.

Singh, P., et al., 'Strategies to overcome vaccine hesitancy: A systematic review', *Systematic Reviews*, 26 April 2022;11(1):78.

West, R., et al., 'Applying principles of behaviour change to reduce SARS-CoV-2 transmission', *Nature Human Behaviour*, May 2020;4(5):451–9.

# Appendix

**Table A1: Frequently used behaviour change techniques**

| Behaviour change technique | Definition | Frequently used in |
|---|---|---|
| Information about social and environmental consequences | Provide information about the social and environmental consequences of a behaviour | Education, persuasion |
| Information about health consequences | Provide information about the health consequences of a behaviour | Education, persuasion |
| Monitor and feedback on a behaviour | Monitor and provide information and feedback on performance of the desired behaviour | Education, persuasion, incentivization, coercion, training |
| Self-monitoring of the behaviour | Establish a method for the person to monitor and record their behaviour as part of a behaviour change strategy | Education, incentivization, coercion, training, enablement |
| Social support | Advise on, arrange or provide social support to support behaviour change | Enablement |
| Goal setting | Set or agree a goal defined in terms of behaviour or outcome to be achieved | Enablement |
| Reviewing goals | Review goals jointly with the person and consider modifying in light or achievement or not. This might include re-setting the same goal, a small change in that goal, or setting a new goal, or no change | Enablement |
| Adding objects to the environment | Add objects to the environment in order to facilitate performance of the behaviour | Environmental restructuring, enablement |
| Problem solving | Analyse, or prompt the person to analyse, the factors influencing the behaviour and create strategies to overcome barriers and increase facilitators | Enablement |
| Action planning | Prompt detailed planning of performance of a behaviour | Enablement |

| | | |
|---|---|---|
| Restructuring the physical environment | Change, or advise to change, the physical environment in order to facilitate the performance of the wanted behaviour or to create barriers to the unwanted behaviour | Environmental restructuring, enablement |
| Instructions on how to perform a behaviour | Advise on how to perform a behaviour (skills development) | Training |
| Demonstration of the behaviour | Provide an observable sample of the performance of the behaviour directly or indirectly e.g., via film, pictures or in person | Training, modelling |
| Prompts/cues | Introduce or define environmental or social stimulus with the purpose of prompting or cuing the behaviour | Education, environmental restructuring |
| Behavioural practice/rehearsal | Prompt practice or rehearsal of the performance of the behaviour one or more times in a context or at a time when the performance may not be necessary to increase skill and habit | Training |
| Credible source | Present verbal or visual confirmation from a credible source in favour or against the behaviour | Persuasion |

Source: Michie, S., Atkins, L., and West, R. 2014.

**Table A2: Other behaviour change techniques to consider in changing NPI-related behaviours**

| Behaviour change technique | Definition | Used in |
|---|---|---|
| Salience of consequences | Use methods to emphasize the consequences of performing the behaviour to make them more memorable | Persuasion, enablement |
| Anticipated regret | Raise awareness of possible future regret if a behaviour is not performed (or an unwanted behaviour is performed) | Coercion, enablement |
| Social comparison | Compare one's own behaviour to that of others | Persuasion, enablement |

| | | |
|---|---|---|
| Information about others' approval | Provide information about what other people think of the behaviour | Education, persuasion |
| Habit formation | Prompt repetition of the behaviour in the same context repeatedly so that the context elicits the behaviour | Training |
| Social reward/incentive (positive reinforcement) | Verbal or non-verbal reward for performing a desired behaviour | Enablement, persuasion, incentivization |
| Punishment/future punishment | Inform of punishment/future punishment as a consequence of not performing a desired behaviour | Coercion |
| Remove punishment | Arrange for the removal of an unpleasant consequence dependent on performance of desired behaviour | Incentivization |
| Identification of self as role model | Inform that one's own behaviour may be an example to others | Persuasion |
| Framing/reframing | Suggest the deliberate adoption of a new perspective regarding the desired behaviour to change cognitions and/or emotions regarding said behaviour | Persuasion, enablement |
| Vicarious consequences | Prompt observation of the consequences for others performing the desired behaviour | Enablement |

Source: Michie, S., Atkins, L., and West, R. 2014.

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