

# Understanding Vaccination Behaviours within Workplaces in Sandwell

Research Background /  
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## Disclaimer

The views in this report are the authors' own and do not necessarily reflect those of the Local Government Association.

# Table of Contents

A Research Background .....	4
B Extended Research Background.....	10
C Bibliography.....	15

# A Research Background

Our investigative approach entails asking participants their specific concerns around vaccination or, alternatively, their reasons to get vaccinated. We then present them with behaviourally-framed messages that are specific to their stated concerns if they are not vaccinated or that encourage them to become advocates for the COVID-19 vaccine if they are already vaccinated.

In this section we first touch on the topic of vaccine hesitancy through the perspective of misinformation that people hold around vaccine safety. This was identified as one of the key reasons for vaccine hesitancy and has informed the design of the solution presented in this study. Second, we show that information approaches have been successful in addressing vaccine hesitancy in the past. Third, we discuss the types of behavioural messaging techniques that have been effective in improving vaccination uptake. Fourth, we discuss evidence for the effectiveness of using community advocates to promote pro-vaccination beliefs and their efficacy in increasing vaccination uptake. Finally, we discuss some behavioural techniques that can be used to encourage participants to become vaccine advocates within their communities and social networks.

## A.1 Vaccine Misinformation as a Cause of Vaccine Hesitancy

Even before the Coronavirus (COVID-19) pandemic, public health organisations had been facing the challenges associated with anti-vaccination beliefs. The World Health Organisation (WHO) in 2019 listed 'vaccine hesitancy' as one of the top 10 major global threats.

Vaccine Hesitancy, as defined by the SAGE Working Group on Vaccine Hesitancy, refers to *'delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place, and vaccines. It is influenced by factors such as complacency, convenience and confidence.'* The Working Group also concludes that *'while communication is not a specific factor, like confidence, complacency and convenience, when it is poor or inadequate it can negatively influence vaccination uptake and contribute to vaccine hesitancy.'* Thus, developing communications that are effective in addressing hesitancy issues is a promising strategy to combat vaccine hesitancy and to improve vaccination uptake.

As noted by the SAGE Working Group, vaccine hesitancy is complex and context specific. However, misconceptions and concerns around vaccine safety remain key drivers of decreased vaccine uptake in most contexts (Larson et al., 2014). These concerns are driven by vaccine misinformation that is often propagated through social media, organised anti-vaccination groups, and celebrity media endorsements (Geoghegan et al., 2020). Despite a wealth of scientific research and evidence supporting the safety and efficacy of currently

recommended vaccines, counteracting false information and beliefs among vaccine-hesitant groups continues to be challenging public.

In 1998 one of the most common vaccine safety concerns emerged from a speculated link between the MMR (Measles, mumps, rubella) vaccine and autism spectrum disorders due to a misrepresentation of clinical and biological data in a paper (Geodert et al., 1998). Although the UK Department of Health and other health organisations immediately pointed out the lack of evidence for those claims (the article was later retracted), broad media coverage led to widespread concern around the safety of the MMR vaccine.

Other common misconceptions regarding vaccine safety include the belief that receiving multiple vaccines can weaken the immune system; receiving vaccines in the first 24 months of life impacts neurodevelopmental outcomes; the excipients used in vaccines are unsafe, vaccines can cause autoimmune diseases; and the notion that vaccines given during pregnancy are unsafe. Other common vaccine safety controversies are linked to vaccines causing life-threatening side effects (Geoghegan et al., 2020).

In addition to these common misconceptions, the Coronavirus vaccines are facing additional hurdles, especially given the lack of a long-term safety record (Cornwall, 2020). The rapid pace of the Coronavirus vaccine development is a cause of misinformation regarding its safety and efficacy among vaccine hesitant groups. Furthermore, the Coronavirus vaccines have been associated with several other misinformation controversies, which have been circulated through social media platforms. These include claims that the COVID-19 vaccines could kill millions of people; that they have been tested unethically in Africa and subjects from minority communities; associations with the 5G technology conspiracy theories; and conspiracy theories that claimed the vaccine as global population control measures (Evanega et al., 2020). Social media and the internet have led to the fractionation of information, which also plays a major role in facilitating the spread of misinformation, by skipping conventional 'gate-keeping' mechanisms, such as professional editors or validation from experts, among other things.

## **A.2 Importance of information interventions to tackle misinformation**

Individuals with strongly held scientific-sounding misinformation beliefs are strongly associated with decline in vaccination intent (Loomba et al., 2021). Therefore, tackling vaccine misinformation remains a key challenge to address in order to increase vaccine uptake in various contexts.

Studies have shown that providing recommendations that aim to correct myths and misinformation strongly influence decision making around vaccines (Geoghegan et al., 2020; Smith et al., 2017). However, the way misinformation is corrected or myths are debunked is very important. Lewandowsky et al. (2012) showed that correcting misinformation not always works and can backfire. Furthermore, they provide a range of recommendations to successfully tackle misinformation such as 1) pre-expose, or warn individuals upfront that misleading information is coming; 2) provide alternative explanations to the misinformation being corrected, 3) repeat and/or reinforce the correct information without reinforcing the

myth, 4) keep information simple and brief, 5) foster scepticism about information source, 6) frame evidence in worldview-affirming manner by endorsing values of targeted audience, and 7) affirm the identity/values of the target audience to increase receptivity to evidence.

Another study, a systematic review of strategies to tackle vaccine hesitancy, showed that educational interventions that aim primarily to inform or to educate about vaccination are effective in addressing vaccine hesitancy (Dubé et al., 2015). Brief written educational interventions (e.g., pamphlets) are also associated with a statistically significant uptake in vaccination rates. Evaluations of these interventions have shown that the effectiveness of promotional communications can positively change knowledge, attitudes, and behaviours regarding vaccination (Cairns et al., 2012).

Similar to the recommendation provided by Lewandowsky et al. (2012) to pre-emptively warn individuals that misleading information is coming, Bavel et al. (2020) identified that preparing people for misinformation and ensuring they have accurate information and counterarguments against false information before they encounter conspiracy theories, fake news, or other forms of misinformation, can help inoculate them against false information.

Another promising approach to combat misinformation is to provide tailored information. A study tested nontailored messages and tailored messages on mothers who did not intend to vaccinate their 11- to 14-year-old child against HPV. The results show that tailored messages addressing HPV concerns improve behavioural intent to have children vaccinated among mothers (Panozzo et al., 2020). A similar study that tested whether tailored information increased women's intentions to receive the HPV vaccine reported that participants in the tailored condition reported greater increases in intentions to vaccinate (Gerend et al. 2013).

### **A.3 Behavioural Messaging to Promote Vaccine Intentions**

We have established from the literature that vaccine misinformation is an important barrier to uptake. We have also demonstrated the importance of informational interventions in tackling misinformation in order to promote vaccination uptake. In this section, we list some behavioural messaging techniques that will make informational interventions more effective and increase the likelihood of them being more persuasive in combatting misinformation.

#### **A.3.1 Keep messages short and clear**

Shorter messages are more likely to be read in full. They are also more easily recalled and perceived as more credible (Godinho et al., 2016; Lawes-Wickwar et al., 2020). Adding more information, even if it is useful, may distract from the key message.

#### **A.3.2 Transparency**

Provide transparent and factual information about the vaccine's effectiveness and safety. Messages should convey that the vaccine is effective (both in terms of reducing the risk of infection and serious illness), safe, and has undergone the same rigorous testing as other vaccines. Messages should also be transparent about potential side effects. Balanced

communications that set out the costs and benefits of vaccination are more credible and trustworthy (Rubinstein et al., 2015; Godinho et al., 2016; Freeman et al., 2020).

### **A.3.3 Framing**

There is a wide spectrum of often contradictory research about the effectiveness of different framing techniques in messages that promote vaccination.

Some studies show that people are more likely to get vaccinated if they believe COVID-19 is a serious disease that they are at risk of contracting and if they view the vaccine as risk-reducing (Brewer et al., 2017; Godinho et al., 2016; Williams et al., 2020). Therefore, communicating the health consequences and risk of contracting the virus and framing the vaccine as a protection against these risks could be an effective strategy to address vaccine hesitancy.

Ferguson and Gallagher (2007) found that for participants at high perceived risk of the flu, a gain-framed message (e.g., the flu shot is effective in 80% of cases) was more effective than a loss-framed message (e.g., flu shot is ineffective in 20% of cases). In addition, a negatively framed goal message (e.g., if you don't get a flu shot, you fail to take advantage of an 80% chance of preventing flu) was more effective than a positively framed goal message (e.g., if you get a flu shot, you reduce your risk of the flu by 80%). Participants at low perceived risk showed no framing effects.

However, other studies show that positive messages about COVID-19 vaccines lead to more positive attitudes towards vaccines and such messages are more likely to be shared with others. They can also be an effective strategy to counteract the negative emotions usually employed by anti-vaccine communications (Chou et al., 2020; Petersen et al., 2020; Attay & Mercier, 2020).

### **A.3.4 Employ descriptive social norms**

Emphasise the number of people that have already been vaccinated. Further, it is beneficial to emphasise that intentions to get vaccinated are growing and that the majority of people approve vaccinations; in addition, make vaccination visible to others as much as possible. People are more likely to get vaccinated if they know that most other people have done so as well and that others approve of taking this action (Moehring et al., 2021; Palm et al., 2021; Bish et al., 2011; WHO, 2020; Bavel et al., 2020).

### **A.3.5 Incorporate prescriptive social norms**

Vaccine hesitancy can be the product of social influences such as one's beliefs about what others approve or disapprove of. Brunson (2013) reports results from an online survey asking parents in the US to self-report both their own vaccination decisions and the vaccination attitudes of members of their social networks. Parents who failed to meet the recommended vaccination schedule believed that a larger fraction of their social network recommended non-vaccinating; this was a better predictor of vaccination than were demographic characteristics. Therefore, reducing the gap between what one believes others do or approve of, and what others actually think and do, may be a powerful tool to encourage decisions such as vaccine uptake.

### **A.3.6 Prosocial norms**

The communication of social (rather than individual) benefits from vaccinations increases the vaccination intention, particularly when the risk associated with vaccination is low and vaccination comes with low effort (Betsch, Böhm, & Korn, 2013; Shim et al., 2012).

Messages that 1) emphasize benefits to the recipient, 2) focus on protecting others, 3) align with the recipient's moral values, 4) appeal to social consensus or scientific norms and/or 5) highlight the prospect of social group approval tend to be persuasive (Bavel et al., 2020). These norms of prosocial behaviour are more effective when coupled with the expectation of social approval and modelled by in-group members who are central in social networks. It also may be helpful to make people aware that they benefit from others' access to preventative measures.

### **A.3.7 Set goals and intention implementation prompts**

Prompting people to set goals makes it more likely that they will achieve them (Gollwitzer, 2011). Using public or private commitment increases the likelihood that people will go through with an action. In one study, employees who received a postcard about available workplace flu shots were more likely to vaccinate if they were prompted to write down when they planned to come for the vaccination (Milkman et al., 2011).

### **A.3.8 Apply Positive Reinforcement**

Provide positive messages about the vaccine, linked with the hope it provides. Praise those that get vaccinated. Positive messages about COVID-19 vaccines lead to more positive attitudes towards vaccines and such messages more likely to be shared with others. They can also be an effective strategy to counteract the negative emotions usually employed by anti-vaccine communications (Chou et al., 2020; Petersen et al., 2020, Attay & Mercier, 2020).

### **A.3.9 Build on past COVID-19 behaviours**

Building on past experiences or efforts related to COVID-19 gives people confidence in getting vaccinated. It also frames vaccination as an action that is consistent with their past behaviours (Williams et al., 2020).

### **A.3.10 Identity leaderships and authorities**

Identity leadership can enhance self-efficacy. Leaders and authorities who treat people with respect, and who communicate that they trust people to do as they are told, tend to be more successful in eliciting cooperation (Tyler, 2011). Building a strong sense of shared social identity can help coordinate efforts to manage threats and foster in-group commitment and adherence to norms (Ellemers et al., 2002).

In relation to building a shared sense of identity, Bavel et al. (2020) propose that this could be achieved by addressing the public in collective terms and by urging 'us' to act for the common good. It also proposes that identifying sources (for example, religious or community leaders) that are credible to different audiences to share public health messages can be effective, and that leaders and the media might try to promote cooperative behaviour by emphasizing that cooperating is the right thing to do and that other people are already cooperating. These leaders also should highlight that bipartisan support for COVID-related measures, where they exist, have reduced polarization and led to less-biased reasoning.



## **A.4 Vaccine advocates to increase vaccination uptake**

Vaccine advocacy is expected to support the acceptance and uptake of COVID-19 vaccines among communities and individuals, as well as the promotion of vaccine safety.

People's behaviour is influenced by others (Cialdini and Goldstein, 2004). Making one's behaviour visible to others can encourage both the signal sender and those who receive the signal to adopt the desired conduct (Rogers et al., 2016). When an individual can be recognized as receiving a vaccination either physically (e.g., wearing a pin) or online (e.g., Instagram post) in their social group it would send a signal to those in their social network that vaccination is the norm.

A study about the influence of social norms on flu vaccination among African American and White Adults found that individuals who reported that a majority of people around them want them to be vaccinated were significantly more likely to be vaccinated suggesting subjective norms are influential for both White and African American adults in the U.S. These results suggests that health promotion efforts may benefit from focusing on subjective norms and encouraging friends and family members to talk about the benefits of influenza vaccination (Quinn et al., 2017).

Another study that examined the relative effectiveness of prestige-based incentives (vaccination of an expert scientist, president, politician, celebrity, or religious leader), conformist incentives (vaccination of friends and family) and risk-based incentives (witnessing death or illness of a person from the disease) for increasing participants' chances of getting vaccinated with respect to their COVID-19 vaccine intention, suggested that positive vaccination messages delivered by expert scientists, vaccination of friends and family and witnessing the risk of disease can be effective at increasing vaccine uptake (Salali & Uysal, 2021). This is supported by other studies that suggest that reporting the prevalence of those already or willing to be vaccinated may be sufficient to induce a cascade of others to abandon their vaccination hesitancy (Schmelz & Bowles, 2021).

An alternative approach to leverage social influences is to employ community advocates. A study conducted in the state of Washington showed that a community advocacy programme that engaged parent volunteers to be immunisation advocates among other parents successfully reduced vaccine hesitancy (Schoeppe et al., 2017).

A similar study that tested the effectiveness of engaging community members as health advocates showed significant increases in knowledge and confidence about cervical cancer and HPV vaccination (Chhabra et al., 2018).

## **A.5 Behavioural Techniques to Encourage Vaccine Advocacy**

After carefully considering vaccine advocacy as an effective strategy to tackle vaccine hesitancy, we explored different behavioural techniques that would help us to give form to intervention ideas.

### **A.5.1 Leverage social networks**

Create social networks to support and encourage people to become vaccine advocates in their communities. Social networks can amplify the impact of an intervention. Getting people that are well connected to encourage others to vaccinate can be an effective approach (Bavel et al., 2020). For example, The London Borough of Havering is planning on launching a volunteer ambassador programme. The goal of the programme will be to provide peer-support on how to book a vaccine and address any related concerns people might have. The council is also encouraging residents that have already received their vaccine to encourage their peers to do the same.

### **A.5.2 Pro-social Benefits**

Emphasise the collective, societal importance of getting vaccinated in achieving herd immunity and protecting vulnerable people. Appeal to the common good and elicit empathy towards those that are vulnerable. Highlighting the social benefits of vaccination is an important motivation for getting a vaccine (Betsch et al., 2017). Combining informational content about herd immunity with emotional content about protecting those that are vulnerable can be particularly effective (Pfafftheicher et al., 2020).

### **A.5.3 Role Models**

Promote vaccination by using people that got vaccinated as role models. Choose people that are relatable to your target audience. People are more likely to vaccinate if others, who are similar to them, have done so (Bish et al., 2011; Cialdini & Trost, 1998).

Implementation Intentions and Planning

Encouraging people to make plans (specifying the when, where, and how of an action) makes it more likely that they will follow through with it (Milkman et al., 2011).

## **A.6 Background Research Conclusion**

Given the potential of vaccine hesitancy to undermine vaccination coverage, local governments must take steps to understand the extent and nature of hesitancy and to start promoting approved COVID-19 vaccines. This project endeavours to contribute to tackling vaccine hesitancy. It is the first study that combines a behavioural insights approach that focuses on the personalisation of information in a workplace setting. This study targets workplaces as a potential location to deliver effective interventions aimed at encouraging a behavioural change in relation to COVID-19 vaccines.

## **B Extended Research Background**

In this section we provide further information about the barriers to COVID-19 vaccine up-take and discuss how a behavioural science approach might be effective to increase vaccine acceptance.

## **B.1 Understanding the barriers to COVID-19 vaccine take up**

In this section we describe previous research regarding drivers and barriers to vaccination and/or vaccination intentions, as well as previous studies that analysed socio-demographic distributions around vaccine hesitancy.

A study examined the public's perceived barriers and facilitators around COVID-19 vaccination in the UK (Williams et al., 2020). There is 86% acceptance among the high-risk population. Facilitators of vaccination included feeling at risk of contracting the virus and seeing the vaccine as a protection/risk-reducing; perceiving the virus as serious; being aware of the health consequences to others. The barriers to vaccination included concerns over vaccine safety and concerns that the development and/or testing of the vaccine is rushed. Recommended interventions include improving knowledge of susceptibility and severity of the virus and the effectiveness of vaccination; the use descriptive and injunctive norms in communications; and building upon the public's prior compliance with the lockdown and preventive behaviours with vaccination compliance (Williams et al., 2020).

Another study sought to understand willingness to get vaccinated among a representative sample of UK residents (Freeman et al., 2020). 71.7% of the population responded in a consistently positive way towards taking a COVID-19 vaccine, 16.6% were very unsure or ambivalent about taking a COVID-19 vaccine, and 11.7% were strongly hesitant in the UK.

This study found vaccine hesitancy to be spread evenly in the population, outlined the main drivers of vaccine take up, and summarised the following: 1) socio-demographics do not explain vaccine hesitancy to any helpful degree; 2) fused with acceptance of a vaccine are beliefs about the collective importance: that a vaccine will save lives, help the community, and that it will be dangerous if many people do not get vaccinated. emphasising collective – rather than personal – responsibility may lead to greater change in individuals' behaviour; 3) the modelling indicated a key higher-order factor of excessive mistrust that was associated with vaccine hesitancy; 4) public health communication may need to be carefully attuned to the different kinds of collective identities and benefits in order to resonate with pro-social motives; and 5) the survey findings also indicate that materials may benefit from highlighting the many positive contributions that NHS staff make. There is an urgent need to counter misinformation, ideally by 'prebunking' or inoculation and provide strong presentation of accurate information.

A similar study investigated the factors associated with intention to be vaccinated against COVID-19 in the UK (Sherman et al., 2020). 64% of participants reported being very likely to be vaccinated against COVID-19, 27% were unsure, and 9% reported being very unlikely to be vaccinated. Intention to be vaccinated was associated with more positive general COVID-19 vaccination beliefs and attitudes, weaker beliefs that the vaccination would cause side effects or be unsafe, greater perceived information sufficiency to make an informed decision about COVID-19 vaccination, greater perceived risk of COVID-19 to others (but not risk to oneself), older age, and having been vaccinated for influenza last winter (2019-20) (Sherman et al., 2020).

Another study showed that among the sample group, 69% of individuals were vaccine acceptant, 25% vaccine hesitant, and 6% were vaccine resistant in the UK (Murphy et al.,

2020). Individuals in the vaccine hesitant group were more likely to be female and younger than 65. On the other hand, those in the vaccine resistant were more likely to be in younger age brackets, reside in suburbs, and are in the three lowest income brackets. The vaccine hesitant and resistant groups had lower levels of trust in healthcare professionals, scientists, and the state, higher levels of paranoia, religious beliefs, lower levels of altruism, etc. The report indicated lower levels of trust in information in newspapers, television, doctors, healthcare professionals, government agencies. The subgroups to consider are women, younger adults, ethnic minorities, those with existing health conditions, and pregnant women. Health messaging might be more effective if delivered via individuals in alternative positions of authority and expertise than government, scientists, and medical professionals and via other communication channels (Murphy et al., 2020).

A similar study showed that individuals who were older (vs. younger); from white ethnic groups (vs. BAME groups); married or cohabiting (vs. single, widowed, divorced); unemployed (vs. in full or part-time employment); educated to degree level or above (vs. below degree level); a non-smoker or an ex-smoker (vs. a current smoker, for both comparisons) and; had not had COVID-19 (vs. has or has had COVID-19) were significantly more likely to be willing to have a COVID-19 vaccine. The largest difference in willingness was for ethnicity; individuals from white ethnic background were more likely to be willing to receive a COVID-19 vaccine compared with those from BAME groups (79.9% vs. 55.9%, respectively) (Thorneloe et al., 2020).

Another study showed that vaccine hesitancy profiles among non-key workers are middle-aged adults (25-54), on low-to-average incomes who do not know any individuals diagnosed with COVID-19. Within the key-worker group, vaccine hesitancy was associated with being female and perceiving oneself as having relatively low risk of infection. Communicating that being unvaccinated leads to increased risk of infection status and highlighting individuals' social responsibility to act in a way that protects the vulnerable might be effective (Butter et al., 2020).

Bish et al. (2011) conducted a systematic review of the psychological and demographic factors associated with vaccine take up for an influenza pandemic. People who perceived vaccines as an effective coping strategy towards the virus, were influenced by the social pressure of getting vaccinated and received and/or consumed information from official health sources were more likely to get vaccinated. Past vaccination behaviour also was an important predictor of vaccination. Demographic factors associated with higher intentions and uptake of vaccination were older age, male gender, being from an ethnic minority and, for health professionals, being a doctor. Potential interventions to improve uptake of vaccination include highlighting the risk posed by pandemic influenza while offering tactics to ameliorate this risk, i.e. vaccination; reducing the omission bias (i.e., a perception that harm caused by action is worse than harm caused by inaction); increasing seasonal influenza vaccination in advance of a future pandemic may be an effective strategy (Bish et al., 2011).

Paul et al. (2020) highlights the main concerns around COVID-19 vaccine hesitancy and shows that distrustful attitudes towards vaccination were higher amongst individuals from ethnic minority backgrounds, with lower levels of education, lower annual income, poor knowledge of COVID-19, and poor compliance with government COVID-19 guidelines. Amongst vaccine attitudes, intermediate to high levels of vaccine benefit mistrust and

concerns about future unforeseen side effects were the most important determinants of both uncertainty and unwillingness to vaccinate against COVID-19 (Paul et al., 2020).

However, many people are concerned about government policies for perfectly legitimate reasons, and not because they are misinformed or believe in conspiracy theories. Some people may be concerned about vaccines because of the role played by western government agencies in the Global South. A general mistrust in governmental initiatives is also rooted in racialized history (Jamison et al., 2019).

Khan et al. (2021) noted that describing immigrant groups and ethnic minorities as more vaccine hesitant places emphasis on minority groups becoming less hesitant rather than public health systems become more accessible and trustworthy. The lack of accessibility to public health services and a mistrust towards health authorities found in ethnic groups is often a major contributing factor to their lower vaccine uptake. Thus, failure to address these concerns undermines the barriers to vaccine access for these populations.

As explained in *The COVID-19 Vaccine Communication Handbook. A practical guide for improving vaccine communication and fighting misinformation*, policy makers should strive to understand and effectively respond to the unique needs of communities with lower vaccine uptake and aim to reduce discriminatory practices which contribute to mistrust towards the government and public services, rather than simply labelling them as 'hesitant.'

## **B.2 A Behavioural Science Approach to Encourage Vaccine Take up**

The pandemic has involved large-scale behaviour change; therefore, insights from behavioural sciences appeared as a promising approach to align human behaviour with the recommendations of governments, epidemiologists, and public health experts. In the following section we summarise some of the most useful strategies from behavioural sciences to increase vaccine take up.

### **B.2.1 Making behavioural change salient**

We may leverage the impact of any behaviour change effort by targeting well-connected individuals and making their behaviour change visible and salient to others. To effectively counter fake news about COVID-19 around the world, governments and social media companies must rigorously develop and test interventions. This includes identifying treatments that effectively reduce belief in misinformation while not undermining belief in accurate information. Local voices can amplify these messages and help build the trust that is needed to spur behavioural change (Bavel et al., 2020).

### **B.2.2 Coordinated efforts to combat the spread of the virus**

Coordinated efforts across individuals, communities, and governments to fight the spread of disease can send strong signals of cooperation and shared values, which could facilitate reorganization of previously considered out-groups and in-groups into a single community

with a common destiny. This 'superordinate categorization' is most effective when everyone is of equal status (Dovidio et al., 2007).

Bavel et al. (2020) highlight that there is a need for more targeted public health information within marginalized communities and for partnerships between public health authorities and trusted organizations that are internal to these communities.

### **B.2.3 Incentives**

Several studies have assessed the use of incentives as an approach to promote health behaviours with varied results. In a study with college students, results showed that they were more likely to get a flu shot when offered a US\$20 reward (19% vs. 9%; Bronchetti et al., 2015). A study by Moran et al. (1996) showed that a US\$50 gift certificate for groceries offered for vaccination increased vaccine uptake from 20% in the baseline to 29%. However, it also points to potential motivational crowding-out effects, that is, the phenomenon that voluntary behaviour may decrease when it is rewarded (see also Gneezy & Rustichini, 2000).

Another study that reviews evidence regarding interventions to improve vaccination coverage, concludes that available studies provide insufficient evidence to assess the effectiveness of client or family incentives for improving vaccination coverage, and points out at reducing out-of-pocket costs for vaccinations as an evidence-based strategy to improving vaccination coverage (Briss et al., 2000).

In addition, a recent study by Chang et al. (2021) provides evidence that financial incentives and other behavioural nudges do not meaningfully increase COVID-19 vaccination rates amongst the vaccine hesitant, and provides some suggestive evidence on the potential for financial incentives and messaging to backfire.

### **B.2.4 Changing defaults (default effect).**

People who are pre-scheduled for a flu shot appointment (which they can cancel if they do not want it) are more likely to get vaccinated than those who are not prescheduled but who can make an appointment if they want one (Chapman et al., 2010).

Mandatory or compulsory vaccination that acts as a type of opt-out default are met with high compliance rates (Pitts et al., 2014; Rakita et al., 2010). The easier opting-out processes, the lower vaccination rates.

### **B.2.5 Remove Practical Barriers**

Address practical or logistical barriers that can get in the way of vaccination. Do people know where vaccine centres are located and how to reach them? Can they take time off work and get vaccinated? Reducing barriers and making it easy to get vaccinated increases vaccine uptake (WHO, 2020; Brewer et al., 2017).

### B.2.6 Help people plan for their vaccination

Making plans helps people commit to their intentions and can encourage vaccine uptake (Milkman et al., 2011; Brewer et al., 2017). For example, during the first lockdown, Norfolk council designed a communication aimed at helping people use public transportation safely. Similarly, the London Borough of Hackney designed a communication that prompts people to plan their vaccination.

### B.2.7 Reminders

Reminders are particularly effective if 1) they come from a trusted source, 2) people can choose their preferred channel of communication, and if 3) they provide information on how to take action. Reminders are an effective way to help people act upon their vaccination intentions (Briss et al., 2020; Brewer et al., 2017). The top performing message in Milkman et al. (2021) stated, “reminder that a flu shot is waiting for you at Walmart.” The underlying theory behind this intervention emphasising that a vaccine has been “reserved” for the patient is the concept of mental accounting. The second highest performing message in Milkman et al.’s (2021) study increased uptake by 1.7% by aiming to promote feelings to protect others with a message including ‘If you get it, you’ll help protect family and friends from the flu and possible hospitalization.’ The third highest performing message was identical to the top performing message of a ‘flu shot waiting for you’ and had an additional message of ‘will you encourage 1 person to vaccinate?’ This message increased uptake by 1.7%.

There is large support for the effectiveness of reminders on vaccine uptake (for meta-analysis/review, see Briss et al., 2000; Groom et al., 2015; Szilagyi et al., 2000).

### B.2.8 Pre-bunking

The pre-bunking approach can be achieved by explaining misleading or manipulative argumentation strategies to people, a technique known as ‘inoculation’ or ‘prebunking’ that makes people resilient to subsequent manipulation attempts. The process of inoculation includes a warning that people may be misled, followed by a pre-emptive refutation of the misleading argument. Inoculation thus follows the biomedical analogy: by exposing people to a weakened dose of the techniques used in misinformation and pre-emptively refuting them, ‘cognitive antibodies’ can be stimulated (van der Linden et al. 2020).

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