

SPI-B: Possible impact of the COVID-19 vaccination programme on adherence to rules and guidance about personal protective behaviours aimed at preventing spread of the virus

Executive summary

The Question

SPI-B was asked to provide an assessment of the possible effect of the COVID-19 vaccine programme on adherence to rules and guidance aimed at preventing spread of the virus and how any adverse impacts may be mitigated.

Main points

1. There is a lack of evidence relating to possible changes of behaviour due to vaccine rollout. Indirect evidence from surveys conducted during the current pandemic as well as from previous vaccination campaigns suggest that, in the absence of any mitigation policies, some of those who have been vaccinated will show a reduction in personal protective behaviours (*Medium confidence*). These behaviours are those relating to hand and surface hygiene, use of tissues and face coverings, physical distancing and ventilating rooms (1). (These are also referred to in medical literature using the imprecise term ‘non-pharmaceutical interventions’, NPIs).
2. In the absence of relevant evidence on the impact of the vaccine roll-out on protective behaviours of those vaccinated and those not vaccinated, the nature and scale of any impact is unknown.
3. Evidence shows there are different levels of adherence to rules and guidance by different sectors of society (e.g. 2), and that strategies aimed at influencing behaviour are more effective when co-produced and targeted (*Medium confidence*).
4. Given the very large cost to health, wellbeing and the economy of a reduction in adherence, we recommend preparing for, and taking action to mitigate any decline in adherence related to vaccine roll-out. This should include:
 - a. A culturally tailored **communication strategy** targeted and stratified by different sectors in society to ensure that people fully understand why it is vital to continue to adhere to protective behaviours, whether or not they have been vaccinated. Use both vaccination appointments as opportunities to communicate the importance of continuing protective behaviours. Ensure that people realise that vaccination, however effective, leaves some risk, and ensure that communications promoting vaccination do not unintentionally undermine communications promoting adherence to protective behaviours.
 - b. Add monitoring of vaccine status and vaccine-related beliefs and behaviours to existing **monitoring** of adherence to Covid-19 rules and guidance.
 - c. Develop a system of rapid alerts to allow **timely intervention** if adherence starts to fall.

Background

The roll-out of the UK COVID-19 vaccination programme (3) raises the question of whether it might change public adherence to rules and guidance aimed at preventing spread of the virus. While concerns over the vaccination programme have mainly focused on the logistics and funding of vaccine delivery (4), it is important that consideration be given to potential unintended consequences.

One of the unintended consequences of vaccination is the risk of reducing population adherence to other protective behaviours such as hand-cleansing, mask wearing, maintaining physical distance, limiting interaction with large groups and adhering to quarantine. This concern has some grounding in the research literature on prior vaccination programmes. Adherence might decline if people feel

less of a need for protection, or the rules and guidance seem less salient to them as attention focuses more on the vaccine. These factors might vary across different sectors of society.

Modelling suggests that, depending on real-world effectiveness of the vaccine, reduced adherence could more than offset the benefits of vaccination by increasing infection rates (5) particularly in the early months, before there is a high degree of coverage (6).

Aims

This report sets out issues for consideration in addressing questions of:

1. the degree to which the roll-out of the vaccination programme might affect adherence to COVID-19 rules and guidance;
2. how possible negative effects could be mitigated;
3. how far the answers to these questions vary across different sectors of society;
4. what evidence is required to monitor negative effects and understand them with a view to informing interventions.

Findings and implications

1. *Evidence from previous vaccine rollouts in the USA (Lyme disease, influenza) suggests it is possible that there will be reduction in adherence resulting from vaccine roll-out*

A longitudinal evaluation of behaviour following Lyme disease vaccination in the USA found that those vaccinated were subsequently less likely to adhere to two of five preventive behaviours: wearing light coloured clothing and using tick repellent (7).

A longitudinal evaluation of behaviour following influenza vaccination in the USA found that those vaccinated interacted with more people, in larger groups, during the two days following receipt of the vaccine than beforehand (8).

In contrast, roll-out of the human papillomavirus (HPV) vaccine did not appear to result in an increase in risky sexual behaviour in a systematic review of international evidence (9); however, sexual behaviours have different motivations from COVID-19 protective behaviours and the context is different.

2. *Polling on current intentions and beliefs in the UK suggests a significant minority intend to reduce their adherence once they believe they have acquired some immunity*

A national survey carried out in early December 2020 (10) found that 50% said that after receiving the vaccine they would still follow whatever coronavirus rules or restrictions were in place as strictly as they were before getting a vaccine (men 45% and women 53%). However, **29% said that they would adhere less strictly than before, with 18-24 year-olds most likely to say this**. Worryingly, **11% said that they would 'probably no longer follow the rules'**. There was little variation by occupational social grade.

A national poll the day after UK vaccine roll-out had begun (11) found that most respondents (66%) believed that people should still be subject to restrictions (stay at home, wearing masks) after they had received the COVID-19 vaccine. However, **22% said they believed that those who had been vaccinated 'should not be subject to any more coronavirus restrictions', a view more likely to be held by younger than older people**; 12% said they did not know.

Two online simulation studies and an online survey found that participants thought they would have lower intention to engage in a range of COVID-protective behaviours if they had been found to have antibodies to SARS-CoV2 [10, 12, 13].

Although there is no direct evidence, it is reasonable to expect that if employers, businesses, politicians or others start encouraging people to resume normal activities because of a growing rate of people who have been vaccinated (e.g. bars including “all our staff are vaccinated” as part of their COVID messaging), this could have a negative impact on adherence to other protective behaviours. Although we do not have any direct empirical evidence, if reduction in adherence in some groups becomes normative, this may further undermine efforts to promote adherence (14).

3. *Communication strategies should mitigate the risk of reducing adherence by communicating ongoing risk and the need to protect others*

A positive association has been found between perceived risk and protective behaviours (15) and between perceived susceptibility to pandemic disease and protective behaviours (16). Levels of perceived risk and concern in the UK remain relatively high (17, 18, 19) but this might decrease following a vaccination programme. Accurately communicating the continuing level of risk could be an important aspect of mitigation.

People adhere to COVID-19 protective behaviours in the interests of others (as well as themselves), and in the past have been willing to get vaccinated for others (e.g. during the H1N1 pandemic (20)). **One might therefore expect that they will be willing to continue to adhere to rules and guidance once a vaccine is available if they are made aware that this is still necessary to protect others.**

Social pressures, including both family and community pressures, have been found to be strong motivators for people to adopt or reject recommended infection control behaviours (15). Normative pressures beyond these social networks (e.g. from employers, mass media and the government) have been found to influence adherence to protective behaviours during COVID-19 (21).

Communication strategies face a tension between, on the one hand, aiming to promote vaccination uptake by emphasising reduced Covid risk whilst, on the other, emphasising that vaccination reduces but does not remove risk so that people should continue with protective behaviours (12). It is important to communicate that **continuing with protective behaviours irrespective of vaccination is important for improving population health now and in the future.**

Communication strategies should take into account the cultural and behavioural aspects of minoritised groups, and ensure consistent and agreed strategies at national and local level (22). Local communities, leaders, networks and faith groups should be involved in implementing vaccination programmes and explaining uncertainties (22). Principles of effective communication and effective strategies for increasing adherence are set out in SPI-B reports (23; 24 respectively). This should particularly focus on the effectiveness of and need to continue with other protective behaviours while the vaccination programme is being rolled out and at least until population-wide immunity is achieved (25). The uncertainty about protection from infection or transmission and length of protection, despite vaccination protecting from serious COVID-19, should be stressed.

In accordance with more general guidance on effective communication, the messaging should be:

- **transparent about uncertainty** where present in order to earn trust (26,27);
- **personalised**, so gathering evidence on adherence by sex, age, ethnicity and deprivation will help targeted messaging (28);

- **comprehensible** by those with low levels of literacy and numeracy, including visual techniques;
 - communicated by **multiple sources**, across **multiple media**, in **multiple languages**
 - **co-created** with the communities, and involve ‘community champions’, where adherence is most likely to be an issue as a result of perceiving risk to be lower in light of the vaccination programme (23,24);
 - **communicated by trusted sources** who are believed to have knowledge and are distanced from distrusted political figures (29, 30). Such people include local medical professionals, local public health officers, community champions, community and faith leaders, employers, schools/FE/universities;
 - **mobilise communities at a local level**. Communities with higher levels of social cohesion are likely to respond to implementation efforts more readily, suggesting a need not only to focus on individuals but also communities (20, 31). Social networks and everyday experiences of illness and the virus influence behaviour and vaccine uptake and vary from context to context (32).
4. *Monitoring and research is needed to identify changes in knowledge, motivation and behaviours relating to vaccine rollout*

Given the high degree of uncertainty about how vaccine roll-out will affect adherence to rules and guidance to minimise COVID transmission, it will be important to monitor the public’s changing perceptions of risk and protective behaviours (11) and their observable behaviours where possible. This is as much the case for those who have not been vaccinated as for those who have. This feedback will be essential for understanding public knowledge and motivation and improving the impact of communications.

Potentially important survey topics are:

- Vaccination status: whether people have been vaccinated or expect to be vaccinated in the near future. This should be added to existing surveys evaluating adherence.
- Knowledge about
 - a. what the vaccine is preventing (serious disease, infection, transmission...);
 - b. which groups are protected;
 - c. to what extent;
 - d. for how long.
- Understanding that
 - a. the initial phase of vaccine roll-out will only partially protect vulnerable groups;
 - b. full protection for both vulnerable people and others will not be achieved until we reach population-wide immunity.
- Changing ideas about whether they still need to adhere to other protective behaviours.
- Conflicting motivations about desire to return to normal and to protect themselves and others.

Monitoring should be stratified, and communications targeted, to ensure equity of impact across population groups. There is strong evidence that adherence to COVID-19 control rules and guidance differs across different groups (e.g. 2) and it is reasonable to expect that the impact of vaccine roll-out may differentially affect adherence in these groups. No information on the impact of vaccine roll-out on adherence is available at present and so it will be important to analyse the results of the

monitoring according to age, socio-economic, religious and ethnic groups to assess this and to target communication strategies accordingly.

Methods

A rapid literature review was undertaken to assess the impact of previous vaccination campaigns on infection-protective behaviours. This was supplemented by reviews of UK survey data, and evidence known to members of the SPI-B sub-group working on the report.

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