

Communicating About Vaccination in The United Kingdom

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Introduction

On 8 December 2020, 91-year-old Margaret Keenan from Coventry, England, became the first person in the world to receive a coronavirus (COVID-19) vaccine.¹ Since Keenan's vaccination, and as of 10 August 2022, 93.4 per cent of the UK population aged 12 and above had received a first dose of a coronavirus vaccine, 87.9 per cent had received a second dose and 69.1 per cent had received a booster or third dose.² Meanwhile, a study conducted by the UK Office of National Statistics found a corresponding decrease in *vaccine hesitancy*³ since January 2021 with regard to coronavirus vaccination.⁴ However, just six months before the coronavirus pandemic hit the UK, the country had lost its measles-free status. Measles cases tripled from 2017 to 2018 and the percentage of children aged five who have had both doses of the measles vaccine hit a ten-year low as of February 2022.^{5,6} Various studies have identified a complex mixture of attitudes and beliefs, concerns about safety and health risks, socioeconomic factors and access to health care as key determinants to the decrease in measles vaccination that has accompanied the increase in measles cases.⁷

The contrasting examples of coronavirus and measles vaccinations highlight the complexity of UK society's relationship with vaccination. Existing literature on the UK public's thinking about vaccination points to a wide variety of beliefs and assumptions that inform decision-making on childhood and adult vaccination. Beliefs about the side effects of vaccines, science, individual freedoms, community and parenting shape people's decisions to get themselves or their children vaccinated and may indirectly inform the UK government's approach to vaccination.⁸ The UK currently lacks a consistent vaccination policy and, therefore, the burden of vaccination ultimately lands on individuals, which creates significant discrepancies in how vaccination is accessed and taken up. Personal confidence or hesitance about vaccination is only one in a series of factors and barriers that shape vaccination. An approach that accounts for the complexity of people's thoughts and feelings along with the practical factors that drive uptake is necessary to fully address disparate vaccination coverage in the UK.⁹

This strategic brief represents the culmination of a research project, commissioned by the Wellcome Trust and conducted by the FrameWorks Institute, to explore how people understand vaccination in the United Kingdom with the goal of improving access and uptake. In the pages that follow, we present original research that examines the deep assumptions and beliefs that guide public thinking about vaccination, alongside what experts and advocates in the field want to communicate and how they frame the issue. As our findings illustrate, people in the UK can hold multiple understandings of vaccines, often simultaneously and sometimes in contradiction. For example, the public's belief in universal access to health care can serve to promote access to public health services, such as vaccination, but it can also lead to individualistic and racialised assumptions as to why some people do not get vaccinated. This research is intended to help bridge gaps like those between expert thinking, public thinking, and policies around vaccination.

Initial recommendations are offered in this report to address obstacles and leverage openings that might build public understanding and support for policy changes to increase vaccination access and uptake in the UK. We make these preliminary recommendations, however, with the recognition that this is exploratory research and that further research is needed to identify more specific framing strategies that work.

Methodology

This report represents the initial stages of Strategic Frame Analysis®. This approach to communications research and practice begins by investigating deep patterns of public thinking – or cultural models – on a social issue and then documents the frames in use by organisations working in the field and the media. Identifying the cultural models that underpin public thinking allows us to highlight important aspects of public thinking that might create a collective sense of benefit and responsibility, rather than attempting to shift individual behaviours and decisions. Comparing cultural models with the ideas the field wants to communicate reveals the framing challenges on an issue. Ultimately, the goal is to find ways to spark more productive conversations on an important issue to create the public will that is needed for policy change.

What are cultural models?

Cultural models are deep, assumed patterns of thinking that shape how we understand the world and how we make decisions.¹⁰ The models that we hold can normalise or problematise aspects of the existing social order. For example, a mindset rooted in individualism makes public policies that support the community good seem unnecessary and misguided. Individualism focuses our attention on measures that help individual people make better decisions (e.g., health education) and takes our attention off the ways that broader structures and systems affect our lives (e.g., the ways that housing affordability, toxins in our water or access to quality food affect our health).

Cultural models are highly durable. They emerge from and are tied to cultural and social practices and institutions with deep historical roots. At the same time, in moments of social upheaval, models can be pushed into flux and become destabilised, leading to changes in thinking. It's also important to acknowledge that we all have multiple models that we can use to think about a given issue. For example, people can think individualistically, but they also have access to models that, when active, bring into view social systems and the ways that environments shape outcomes alongside individual choices.

How does cultural models research differ from public opinion research?

Public opinion research examines the explicit attitudes and preferences that people hold on specific issues. Cultural models research explores the deeper, underlying ways of thinking that shape and explain these patterns in public opinion. Whereas public opinion research examines what people think, cultural models research examines how people think. For example, public opinion research might demonstrate that people support health education programmes more than they support policies that support access to healthy housing. Cultural models research explains why this is, revealing the role that the mindset of individualism plays in driving these opinions and preferences about health.

What is framing?

An examination of the deep assumptions and patterns of thinking through cultural models provides a foundation for how to frame an issue more effectively. Framing is making deliberate choices about what we say and how we say it. It's what we emphasise, how we explain an issue and what we leave unsaid. These choices change how people think, feel and act. The way in which a communication is framed shapes how we interpret and respond to that information. When new frames enter public discourse, they can shift how people make sense of an issue – how they understand it, how they decide who is responsible for addressing problems and what kinds of solutions they support. Frames are thus a critical part of social change. By shifting how the public thinks about an issue, they change the context for collective decision-making and can make new types of action possible.

What are we trying to communicate?

To develop effective research that will help address the challenges of communicating about vaccination in the United Kingdom, it is necessary to identify a set of key ideas to get across. To do this, FrameWorks researchers conducted a series of eight (8) interviews and a feedback session with researchers and advocates in the field and reviewed relevant literature on the issue. Each section of this report contains core ideas from the field that emerged from this process and have guided the analysis of what needs to be effectively communicated. Additionally, researchers conducted a field frame analysis that mapped the ways in which organisations concerned with vaccination in the UK communicate publicly about vaccines and vaccination.¹

A mixed methods approach to understanding public thinking

To explore the public's thinking about vaccination in the United Kingdom, researchers at FrameWorks conducted 25 one-on-one, two-hour-long, in-depth, semi-structured interviews with members of the UK public from 5 May to 18 May 2021. These interviews were then analysed to identify the deep, implicit ways of thinking that the public uses to think about vaccines and vaccination. Following the analysis of the interviews, researchers then designed and fielded a descriptive survey of 1,907 participants across the entire UK during December 2021 and January 2022, matched to national demographics, to measure the

¹ See the companion report to this report entitled *How are advocates talking about vaccination? An analysis of field communications that emerged from the analysis of the framing of vaccination in the field.*

strength and salience of the cultural models of thinking about vaccination that had been identified in the interview analysis.

The descriptive survey adds to the analysis of cultural models by gathering a much larger sample and quantitatively testing the findings from those qualitative interviews. By increasing scale, quantitative findings that align with the qualitative research strengthen our confidence in the analysis of cultural models. The survey also helps us to get a sense of whether and how certain cultural models for thinking about vaccination are related to each other, as well as how strongly they are related to each other. The fact that people use one model over another suggests that they are likely to more consistently and frequently draw upon that cultural model. It does not mean, however, that they reject or never draw from competing models. Because people hold multiple models simultaneously, the relative strength of a model simply means that a given model is more likely to shape thinking more consistently, but not exclusively. Having a sense of the strength and salience of cultural models for vaccination helps us to understand the relative level of importance and impact of a given model on thinking.¹¹ In this way, the descriptive survey can help delineate how strongly cultural models are related to attitudes about vaccines.

Pandemic context

It is important to note that, while this research project is focused on vaccinations broadly and was conceived prior to the onset of the COVID-19 pandemic, every stage of the research itself was conducted entirely during the pandemic. In this regard it has been important to account for that context in both the gathering of data and analysis of that data. Throughout the interviews, when participants focused primarily or solely on the coronavirus vaccine, researchers would probe to expand the conversation to include other vaccines and other experiences with vaccination beyond the coronavirus. This approach allowed researchers to identify and examine cultural models of vaccines and vaccination in public thinking beyond the coronavirus vaccine, while also including it. The question of vaccination access and uptake in the UK that this research intends to address is, after all, not exclusive to the current moment, but is evergreen.

Research Insights

In the sections that follow, we will explore the deep assumptions and patterns that members of the UK public hold about vaccination, alongside the core ideas that the field wants the public to understand about vaccination. By taking this approach, we can identify the implications of this public thinking for communications by researchers, advocates and public health professionals. From this, we can make some preliminary recommendations for how to best approach the challenges and leverage the opportunities presented by these cultural models that guide public thinking. As mentioned previously, all preliminary recommendations come with the caveat that specific framing strategies would need to be tested to make more definitive recommendations.

Insights from this research are divided into four sections. The first section discusses the various cultural models that people can use to understand vaccines themselves, what they are and what they do. The second section explores how people understand the benefit and importance of vaccination in relation to health and illness prevention. The third section delves into the assumptions and beliefs about why people get vaccinated, or not, including models that influence questions around access and uptake. Finally, the fourth section explores thinking about solutions to increase vaccination in the UK.

Thinking about vaccines

Core ideas from the field regarding vaccines

Experts in the field of vaccination and public health rely heavily on a scientific understanding of what vaccines are and how they work. Safety concerns about long-term side effects that are often the focus of public discourse are not supported by science and are vastly outweighed by the benefits. Experts emphasise that vaccines are the most rigorously monitored part of regular medical care and are held to the highest safety standard of any medical intervention. Most significant side effects that come with vaccines, experts explain, are short-term, such as redness and soreness or possibly a brief fever, and have no long-term consequences. The long-term side effects that people become worried about – such as children developing autism because of the measles, mumps and rubella (MMR) vaccine; contracting influenza from the influenza vaccine; or increasing risk of an autoimmune disease from the human papillomavirus (HPV) vaccine – are not true.¹²

How the public thinks about vaccines

There are three primary cultural models that the UK public uses to think about vaccines. These models of thinking are fundamental to how people understand the benefits and the risks of vaccination. A closer examination of these cultural models provides foundational insights into how the assumptions that people have about vaccines is connected to beliefs about illness prevention, health outcomes and, thus, the importance of vaccination.

The public sometimes imagines vaccines as implements of war that protect the body

In this cultural model, a vaccine is positioned as something that protects the human body against an attacking disease, and the most common way people access that image is through war metaphors. The war metaphors most commonly take one of the following forms in discourse:

- **Shield/Armour:** When imagined as a shield or armour, the vaccine becomes a defence tool that 'blocks' a virus, sometimes from entering the body altogether. While it reinforces the idea that vaccines protect the body, this metaphor implies nearly impenetrable defences. This can lead to assumptions that if a person becomes ill despite being vaccinated, then the vaccine must not be effective. This thinking can obscure the benefit of mitigating disease severity and can raise doubts about a vaccine if boosters are needed.
- **Weapon/Soldier:** When imagined as a weapon or soldier, the vaccine directly fights against or counterattacks a virus that invades the body. While this metaphor does reinforce the protective benefits of vaccines, it also imagines the vaccine to be active in the body, waiting to defend it against a virus attack. When imagined as staying in the body indefinitely, this model of vaccines can activate fears that vaccines can cause long-term harm or alter a body's biological make-up the longer they remain in the body.

The public sometimes understands vaccines as a form of medication

The UK public generally knows more about prescription drugs and over-the-counter medications than they do about vaccines, and they often use medications as a model for vaccines. This leads to three patterns of thinking:

- **Thinking of vaccines as a reactive 'treatment':** Most medicines that the public is familiar with target specific symptoms, such as taking pain relievers to alleviate a headache, which is grounded in the assumption that taking medication is a sign that there is a health problem to be solved. Therefore, if a person is not yet ill, they may see less reason to get vaccinated, or seek a vaccine after they are ill.
- **Thinking of vaccination as optional:** Understanding vaccines as a type of medication can lead to reasoning that if there isn't already a health concern, a vaccine may not be necessary. Even when imagined as a more proactive measure that boosts the immune system generally, like vitamins or nutritional supplements, this leads to reasoning that if one's immune systems is already 'strong', then vaccines aren't needed.

- **Thinking of dangerous side effects:** Whether on labels, in advertising, or from a doctor or pharmacist, public interaction with medications, especially prescription medications, is full of warnings about side effects, drug interactions and overdosing. Translated to vaccines, this activates concerns about the harm of long-term side effects, allergic reactions, mixing vaccines and taking too many vaccines at once.

The public sometimes understands vaccines as training the immune system

There is also a model that the UK public uses in which a vaccine instructs, prepares or trains the immune system to respond to a specific virus, which is closer to the scientific understanding of how vaccines work. This cultural model brings some important assumptions to the foreground:

- **The immune system is what responds to a virus:** This model allows for the understanding that it is the trained-up immune system, not the vaccine, that engages with a virus as part of a biological response to keep the body healthy.
- **Vaccines do not remain in the body:** Because the vaccine prepares the body for encounters with a virus, and does not engage with the virus itself, it therefore does not stay in the body beyond the period of preparation.
- **Vaccines are partners for the immune system:** The body is understood to need vaccines, not as a remedy, but as a 'partner' that helps it to prepare itself for viruses so that it can continue to keep itself healthy. In this way, this model imagines the human body's natural ability to prevent illness as part of the vaccination process, rather than in opposition to it.

How cultural models of vaccines shape thinking

The three cultural models described above have different effects on people's understandings and attitudes. Some cultural models of vaccines foreground thinking of the benefits and safety of vaccination, while others tend to foreground thinking about risks and harm. In this respect, it is important to examine the relative effect on attitudes of using these cultural models of vaccines as instructors or trainers, vaccines as medication and vaccines as implements of war.

The cultural model that generated the most productive thinking was of vaccines as instructors or trainers for the immune system. In interviews, participants who used this model demonstrated some working knowledge of the science behind vaccines, using terminology like *antibodies* and *proteins*, and had less concern about the risks of taking vaccines. The survey data also indicate that understanding vaccines as instructors or trainers is associated with a host of productive outcomes.

Survey spotlight: vaccines as instructors or trainers

The more strongly participants endorsed the notion that vaccines are like instructors or trainers that prepare the immune system to respond to specific viruses, the more likely they were to:

- see the benefits of vaccination ($r = .58$).²³
- trust doctor and nurse recommendations ($p < .001$).⁴
- agree that people have a responsibility to each other to get vaccinated ($r = .53$).
- be fully vaccinated against COVID-19 ($p's \leq .002$).⁵
- support vaccine access policies ($r = .53$) and vaccine mandate policies ($r = .52$).

The effect of a cultural model that views vaccines as being at war is less straightforward than using a cultural model of vaccines as instructors or trainers. On the one hand, it can effectively reinforce the protective benefits of vaccines in that it produces images of vaccines protecting the body, e.g., shields, armour, soldiers, etc. This aspect of this model came through in the surveys, where participants responded to a series of statements that framed the vaccine as the actor that was 'attacking' viruses or 'keeping' incoming viruses from entering the body. The survey data indicate some positive correlations when people associate with this model. However, they are not as strong as when they associate with the model of vaccines as instructors or trainers, and this model also produces more unproductive and negating effects.

2 Effect size of correlations are interpreted using Cohen's (1992) heuristic: $r = .10$, $r = .30$ and $r = .50$ indicate small, moderate and large effect sizes, respectively. See: Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.

3 r indicates a Pearson product-moment correlation coefficient, indicating both the strength and direction of a linear relationship between two variables.

4 Statistical significance has been set at $p < .05$. All correlations discussed in this brief are significant at $p < .05$.

5 Status of COVID-19 vaccination was the only vaccination asked of participants in the survey to achieve some measurement of correlation between the cultural models and vaccine uptake. Due to the recent rollout, COVID-19 vaccination status was determined to be accessible for participants to provide a quick response for an online survey.

Survey spotlight: vaccines at war

The more strongly participants endorsed the notion that vaccines are actively at ‘war’ against a virus, the more likely they were to:

- see the benefits of vaccination ($r=.24$).
- support vaccine access ($r=.31$) and mandate policies ($r=.34$).
- agree that people have a responsibility to each other to get vaccinated ($r=.28$).
- trust vaccine recommendations of friends and family ($p<.001$), though they were not more likely to trust vaccine recommendations of doctors and nurses ($p>.05$).

Endorsement of this model has no effect on COVID-19 vaccination status.

As the survey data show, although this model correlated similarly in some cases to the vaccines as instructors or trainer model, the effect sizes were not as strong. In addition, people who more strongly endorsed the vaccines at war model were significantly more likely to trust the vaccination recommendations of family and friends but were not more likely to trust recommendations of nurses and doctors. This could lead to more exposure or reliance on non-scientific information about vaccines, and perhaps to misinformation. Furthermore, unlike the vaccines as instructors or trainers model, the vaccines at war model was unrelated to COVID-19 vaccine status, meaning that the endorsement of this model cannot predict the likelihood of COVID-19 vaccine uptake.

As noted in the previous section, however, this model of understanding vaccines through war metaphors places the act of protection with the vaccine itself. In interviews, this assumption led participants to reason that it is the vaccine, not the immune system, that is actively protecting the body from viruses. When it is imagined that the vaccine is what ‘fights’ the virus from within the body, it raises the stakes of the safety and effectiveness of putting vaccines in people’s bodies. If the vaccine is imagined as the protector, it will be needed inside the body indefinitely to defend against a disease if it invades. This assumption can activate thinking about long-term harm from concerns about what the vaccine might ‘do’ to the body. Equally important in thinking that uses this model is what the vaccine might not do for the body. In the interviews, the form that the protection took often led people to ‘foolproof’ thinking that if the vaccine shield didn’t 100 per cent protect the body, then it had failed.

The cultural model of vaccines as medication has a similar effect on public understandings of vaccines and an even more detrimental effect on attitudes about vaccination. Similarly, interview participants who used the vaccines as medication model focused their thinking on what the vaccine is ‘doing’ to the body. Because most medicines are understood to ‘act’ on the body to produce a particular outcome, this can produce an overemphasis on the effects of ‘taking’ a vaccine, like one would take medicine. However, the benefits of vaccines are intangible and difficult to measure, which means that if effective a person does not get an illness that they already did not have. In interviews, all these aspects of this model placed the focus of people’s thinking on possible side effects, which in many cases emphasised the potential safety risks and

dangers of vaccines over the benefits. The survey data indicate that understanding vaccines as medication is associated with a host of unproductive outcomes.

Survey spotlight: vaccines as medicine

The more strongly that survey participants endorse the notion that vaccines are medications, the less likely they are to:

- agree with the benefits of vaccines generally ($r = -.43$).
- trust vaccine recommendations from anyone, including doctors and nurses ($p < .001$), or friends and family ($p < .043$).
- endorse the idea that people have a responsibility to stay healthy to protect others from getting ill ($r = -.25$).
- be fully vaccinated for COVID-19 ($p's \leq .001$).
- support vaccination access policies ($r = -.24$) or mandate policies ($r = -.33$).

What cultural models of vaccines mean for the field

As we have seen, the implications of how the public imagines vaccines can be profound in terms of how the public imagines the safety and effectiveness of vaccines. Framing can activate – or steer clear – of particular cultural models. Our findings above make clear that the field should deliberately activate and build on the cultural model of vaccines as trainers, while avoiding framing that will cue the other models of vaccines.

Despite best intentions and some slightly productive effects regarding the protective benefits of vaccines, use of a protection frame involving war metaphors opens the door to raising doubts about the safety and effectiveness of any given vaccine. If the vaccine is responding to viruses, it must be active in the body while waiting for a virus to enter. This can fuel public concerns about long-term side effects, i.e., the longer the vaccine sits in the body, the more likely it becomes that it interacts with and affects the body over time. In this way, using war metaphors to explain vaccines can make it hard to communicate about vaccines as protection without activating concerns about side effects, which are used in public discourse as code for harm.

The potential of harm to one's body is even more pronounced when vaccines are understood as medications. When people model vaccines as medication, they are more likely to evaluate the value of vaccines in the same way they evaluate other medical choices. This framing is likely to foreground individualistic models of being liable for one's own health outcomes, thus making people more risk-averse and less likely to vaccinate unless they are certain no harm will be done, especially with children. Similarly, when vaccines are understood as medications and the medication (vaccine) does not prevent the person from becoming ill, it can make it harder for people to see that vaccines are still highly beneficial in mitigating the severity of a disease.

However, there are opportunities to leverage the cultural model of vaccines as instructors to produce productive thinking that can reinforce scientific understandings of vaccines, which can also neutralise the effect of the war and medication models. The strength of this model is that it explains how vaccines work in a way that people are able to understand that it is the body's natural immune system that is fighting off viruses, not the vaccine itself. This understanding is not only accurate, but it also allows the field to frame vaccination as a process of gaining proficiency, which can be viewed either as a neutral or a positive development for the body, but rarely as a risk.

Preliminary recommendations for talking about vaccines and how they work

Cue the idea that a vaccine prepares or trains the immune system to respond to specific viruses. This will leverage productive understandings of the science of vaccines that people already hold and will reinforce that the vaccine is not what responds to a virus, reducing thinking about risk.

Lead communications by talking about the immune system first and then cueing the model of vaccines as training the immune system, rather than leading with talking about vaccines, which could lead to an outsized focus on effects of the vaccine, as the primary actor, on the body and may cue less productive cultural models of vaccines as medications or as implements of war.

Avoid war metaphors. While sometimes helpful in reinforcing the protective benefit of vaccination, war metaphors will likely frame the vaccine as the main actor against viruses, which will foreground unhelpful and inaccurate assumptions about the science of vaccines, producing inaccurate expectations and an overemphasis on risk.

Avoid images and language that associate vaccines with medications. This will likely frame a vaccine as a remedy for illness, which can activate inaccurate assumptions about what vaccines do and who should take them. The current relationship that society has with medicines is likely to produce an overemphasis on the danger of harmful side effects, specifically the risk of mixing vaccines and of taking too many vaccines at once.

Talk about vaccines as a 'partner' for the immune system. This will leverage productive beliefs about the natural abilities of the human immune system, while de-emphasising unproductive beliefs that the need for vaccines varies based on individual immune strength.

Understanding vaccination, illness prevention and health

Core ideas from the field regarding vaccination, illness prevention and health

For experts in the field of vaccination and public health, the benefits and importance of vaccination are obvious as something that should be a necessity for society and have been well documented by science. In the minds of people working in the field, vaccines protect not only the recipient but also others in the community who are unable or unwilling to be vaccinated when a sufficient proportion of a group is immune to a given disease, known as 'herd immunity' or 'community immunity'.¹³ In this way, vaccination protects individuals, communities and large populations and is central to health promotion and disease prevention, including the elimination or eradication of infectious disease when vaccination rates are high.

How the public thinks about vaccination, illness prevention and health

Connected to how people understand vaccines, there are important cultural models of illness prevention and health outcomes that guide people's thinking about vaccination. As a method of maintaining health and preventing illness, the UK public understands vaccination as a personal choice, while also understanding that there are collective benefits to more people being vaccinated in stopping the spread of a disease.

The public sometimes views staying healthy and preventing illness as an individual endeavour

In research that FrameWorks has conducted on health in the UK over the decades, we have identified a widespread assumption amongst the public that health outcomes are driven by individual choices and behaviours and that individuals are responsible for their own health.¹⁴ This cultural model, known in other FrameWorks literature as *health individualism*, leads to the belief that, barring a genetic predisposition or contracting an unpreventable disease, people can stay healthy and prevent illness if they take care of themselves. Following this reasoning, the public believes that people can strengthen their immune system by consuming certain foods and vitamins and avoiding harmful choices about what they put in their body. Related to this belief is the belief that some people naturally have stronger immune systems than others, and therefore some people need more immune support than others. Therefore, with the right lifestyle choices, people may not, and perhaps should not, need additional help for their immune system. Vaccination, thus, is understood as an individual choice, and an individual responsibility, rather than as a collective one. When the cultural model of health individualism is dominant, negative health outcomes can be viewed as self-inflicted because one's lifestyle and positive health outcomes can be considered an individual achievement. In this way, the risks and benefits of vaccination are understood as individual risks and benefits, and this individualistic lens affects how the public views the importance of vaccination and the need to get vaccinated.

The public sometimes views staying healthy and preventing illness as a collective endeavour

Although individual choice and responsibility are prominent in public thinking, the UK public does also have cultural models that foreground the collective importance of maintaining health and preventing illness. At the core of this model is the foundational belief that humans must effectively protect themselves from outside threats through collective efforts. This belief is grounded in the notion that a person has a better chance of avoiding harm in a group than alone as an individual where they may be exposed and vulnerable – i.e., safety in numbers. In people’s minds this belief can translate to vaccination insofar as it is imagined as an effective way to keep themselves and others safe from the threat of disease: the more people who get vaccinated, the more protected each person in the group becomes. This model of thinking supports a strong belief in the collective benefits of vaccination to protect not just individuals but entire populations when enough people in that population are vaccinated. There is, therefore, a sense of collective responsibility associated with vaccination that is rooted in the model’s collective understanding of health and illness prevention.

How cultural models about illness prevention and health shape thinking about vaccination

Because illness prevention is predominantly understood in terms of a person’s health habits, the need to get vaccinated is evaluated according to how one perceives their own state of health and immune strength. If one considers themselves healthy and able to stave off illness, then vaccination may not be considered a must-have measure to prevent illness but is instead a ‘plan B’ or perhaps even deemed unnecessary. For example, in a 2021 UK government survey, over one-third of respondents cited their own good health as the reason they did not feel at risk of catching the coronavirus and therefore did not need the vaccine.¹⁵ When individualistic thinking about health is dominant, it produces an understanding of vaccination primarily as an individual choice that also has collective health consequences, even when people also clearly understand the collective benefits of vaccination. Interview participants often framed vaccination as a question of personal freedom to make choices about one’s own body and health, while also recognizing that vaccination benefits entire communities.

Interview participants did, in fact, demonstrate a strong conceptual understanding that if a sufficient percentage of people in a community are vaccinated it provides protection to the entire community.¹⁶ While experts refer to this as *herd immunity* or *community immunity*, participants did not associate the concept with the term *herd immunity* and either did not know what the term meant, or they understood it as purposely allowing infection in a population to build immunity among those who survive.¹⁷ However, this conceptual understanding of collective benefit can translate in public thinking into a sense of collective responsibility around vaccination. Even when framed through the lens of individual responsibility, this understanding corresponds to a sense of moral obligation to others. This sense of responsibility to the collective aligns with the conceptual understanding of collective benefit that everyone is safer when more people are vaccinated against infectious disease.

The survey data illustrate how a cultural model of collective benefit and responsibility is associated with productive vaccination outcomes.

Survey spotlight: collective benefits and importance of vaccination

The more strongly that survey participants agree that people have a responsibility to keep themselves healthy and protect others from illness, the more likely they are to:

- agree with the general benefits of vaccination ($r=.60$).
- support vaccination access policies ($r=.53$) and vaccine mandate policies ($r=.53$).
- trust the vaccination recommendations of doctors and nurses ($p<.001$).
- be fully vaccinated against COVID-19 than they were to have any other COVID-19 vaccination status ($p's \leq .01$).

What cultural models of vaccination, illness prevention and health mean for the field

The prominence of the *health individualism* cultural model in public thinking presents clear challenges for the field in framing the importance of vaccination as a collective responsibility. Ultimately, the emphasis on personal freedom can make it hard to prioritise vaccination as a collective responsibility in people's minds, even for those who believe they, as individuals, have a responsibility to get vaccinated to protect others. This is important for communicators in the UK to keep in mind as the primary frame used by the field to reinforce the importance of vaccination is that people who choose to get vaccinated are 'saving lives'. However, as noted in the analysis for this research of field frames, the frame of 'saving lives' through vaccination could translate into the need to convince each individual to 'do their part' and take responsibility for the health outcomes of other people.

The focus on the individual choices each person makes can leave little space for people to think about structural supports and practical barriers like the time of day or location of vaccination appointments, or the availability of information in a variety of languages. The challenge, therefore, is to frame vaccinations as a collective responsibility without relying on a highly individual sense of responsibility, which can make it hard for the public to imagine vaccination as a question of public health. In this regard, there are cultural models that the UK public holds that relate to their sense of responsibility for everyone to be healthy to protect each other from illness, which can be leveraged without activating high levels of individualistic thinking. As we've seen above, the public does use a cultural model in which humans can most effectively protect themselves from outside threats, including from viruses, through collective efforts, such as vaccination. This model provides a more collective understanding of illness prevention and of health outcomes. When framed together, both the benefit (safety from disease) and the risk (of a disease spreading) can be understood in terms of public responsibility that could facilitate communications geared toward systemic changes to public health to increase access.

Preliminary recommendations for talking about vaccination, illness prevention and health

Lead with the collective benefit and responsibility of vaccination and then connect that to individual choices and behaviours, rather than the other way around. This will allow for vaccination to be framed as a collective act that impacts individuals, rather than as an individual act that impacts the collective.

Evoke the concept of collective or community protection to activate the public's already established understanding of collective benefits and to strengthen the sense of collective responsibility.

Avoid using the term 'herd immunity'. The UK public has a mixed and politicized understanding of the term, more so than the concept itself, and continuing to use the term will do more harm than good.

Thinking about vaccination access and uptake

Core ideas from the field regarding vaccination access and uptake

According to experts and advocates in the field, the systemic barriers to vaccination play a central role in low rates of vaccination uptake and contribute to low confidence in vaccines. While low vaccine confidence, including the heavily individualised connotation of the term 'hesitancy', figures prominently in public discourse, the field promotes a more nuanced understanding of what confidence entails. For experts, vaccine confidence is a spectrum of attitudes, as well as social and practical factors, and the most important barriers to vaccination are systemic and impede access to services. Practical barriers such as time of appointments, limited availability, location of vaccination services and lack of reliable transportation disproportionately affect low-income and underserved populations. Government cuts to public health funding have led to the fragmentation of the provision of medical care and hampered the system's overall capacity to provide care, which has disrupted and complicated the delivery of vaccinations. Medical racism and distrust of the medical establishment and government by ethnic and racial minority groups exacerbate the barriers to vaccination access and contribute to lower rates of vaccination among those communities.

How the public thinks about vaccination access and uptake

The public understanding of the reasons that people do or do not get vaccinated is complex. The UK public generally has confidence in science, while also needing 'real-life' proof outside of clinical trials. Similarly, people in the UK hold strong beliefs in the universality of access to health care services, including vaccination, while also holding some highly racialised and nationalist beliefs about UK culture that conflate race, religion and nationality with one's willingness to get vaccinated.

The public requires scientific evidence of vaccine effectiveness and safety, and needs proof over time from real-life experience.

Our research suggests that the public simultaneously holds two cultural models of how people understand evidence of vaccine effectiveness and safety. These models could seem, or even be, contradictory if applied in isolation, and people do rely on one more than the other depending on which model is operative at any given time, or which is dominant for that person. However, the public tends to draw upon both models more than they exclusively use just one of them. One model is grounded in the belief that the efficacy and safety of a vaccine is proven through extensive scientific testing in clinical trials. This relies on scientific authority because it holds that the data from testing will conclusively show if a vaccine reduces the spread of a virus or if it does harm. Then there is another model of public thinking in which a vaccine can only be proven to be safe and effective once it has stood the test of time of use among the broader everyday population. This model is grounded in the belief that a person must 'see it to believe it' and is applied often through historical examples of diseases and their vaccines (e.g., polio), as well as on stories of personal experience with vaccination, both positive and negative.

The public trusts doctors' vaccine recommendations, as well as their peers' recommendations.

Like the relationship of trust between scientific authority and the time-tested authority of lived experience, the UK public simultaneously hold two models for thinking about medical advice when it comes to getting vaccinated. These models tend to more often be used in tandem and people do rely on one more than the other depending on which model is operative at any given time. However, the public tends to draw upon both models more than they exclusively use just one of them. In this model, the public trusts doctors, nurses and medical scientists for their medical expertise but also because they believe they are motivated by a desire to help other human beings and make the world a better place. Doctors are believed to have a particularly altruistic motivation and sense of responsibility because they take an oath to uphold ethical standards, ultimately to care for and even save human lives. Alongside the expertise and motivations of doctors, the public also takes into account the experiences and shared beliefs of their family and friends to make sense of medical advice about getting vaccinated.

The public generally assumes that there is universal access to all health care services, including vaccination.

The UK public generally assumes there are no problems with access to vaccination because of a belief that everyone in the UK has equal access to all health services, free of cost, through a universal and locally administered medical care system. Supporting this belief is an assumption that the National Health Service (NHS) is, by design, equally accessible to everyone in the UK, which obscures most plausible barriers to vaccination access in people's minds. Interview participants often drew from personal experience to support their understanding that anyone who wanted to get a vaccination could, through their local surgery. Furthermore, this personal experience validated in participants' minds that vaccination services are highly organised and efficiently administered through the NHS system. Text message reminders, convenient clinic locations and the commonly known 'red book' for tracking children's vaccinations are some examples of the ease with which the public imagines access to vaccination services in the UK.

The public sometimes assumes that any obstacles to access are due to personal socioeconomic conditions.

Because of the strong assumption that vaccination services are universally accessible, there is a corresponding model of thinking that helps to account for the exceptions to this rule. This model of thinking associates lack of access to vaccination, or other health care services, with a specific set of life circumstances that create obstacles. Examples given by participants include that a person may be juggling too many responsibilities at once, working an undesirable job with inconvenient hours, living in an inconvenient location, or maybe they are constantly too tired to do anything more than survive. These barriers are associated mostly with rural and low-income individuals and are often gendered. In this model of thinking, the practical barriers one might face in accessing vaccination services are not understood as insurmountable but are understood to overwhelm a person and make it difficult to make the effort necessary to get vaccination and other health services.

The public sometimes understands vaccination uptake in relation to UK national culture.

This model of public thinking begins with the foundational understanding of the NHS, and health care more broadly, as a national institution. As we have seen, there is a deep belief among the UK public that access to health services, including vaccination, is universal and equitable in the UK because of the NHS. There is a related model of thinking that believes in the national health care system as a cornerstone of UK society that represents their values. Trust in vaccination, then, can symbolise trust in the NHS. Therefore, if one does not trust and participate in the NHS, they may be understood to be less a 'part of' UK society and therefore may be assumed to be more likely to have low vaccine confidence or to refuse vaccination. This belief about health care, and therefore vaccination, as a key aspect of national culture can lead to xenophobic tendencies in thinking about who is not vaccinated in the UK.

The public can attribute uptake disparities to religion, ethnicity and race, all at once.

In some cases, the public assumes that a person's race and religion are intimately tied to one another and together they hold cultural influence over individual and collective habits, behaviours and decisions. This model is applied to articulate an understanding of religious and cultural beliefs as the reason some people do not get vaccinated. These religious and cultural beliefs are attributed to certain ethnic communities, and in the process of reasoning, religion and race are collapsed. In this way, a person's religious and cultural beliefs, and by association, a person's race and ethnicity, are understood as a driver of why a person chooses not to get vaccinated. This mindset is often paired with the nationalistic understanding of participation in health services which allows for ethnic and racial minorities to be identified, explicitly and implicitly, as the people in the UK who refuse to get vaccinated. This foundational set of racial assumptions with regards to vaccination uptake sets the table for racialised public thinking applied to solutions for improving uptake and access. In this way, this model leads to assumptions that people of specific races, i.e., non-white, are the people who are not getting vaccinated and therefore any solution to increase vaccination rates must be targeted at certain racial groups.

How the cultural models shape thinking about vaccination access and uptake

Our research shows that rather than only trusting scientific trials or only trusting real-life proof, the public often holds these models simultaneously alongside one another. That is to say that people can and do think with both models when thinking about getting vaccinated, but the models can often lead people to different conclusions depending on which model is dominating.

The survey data helps us to see which attitudes result when people hold one model or the other more strongly. In this case, survey participants agreed with both a cultural model of scientific proof and a cultural model of time-tested proof from 'real life' when it comes to evidence of vaccine effectiveness and safety. These models had a moderately strong positive correlation with each other, meaning that the more participants endorsed one of the models, the more likely they were to also endorse the other ($r=.48$). However, although these models are related to each other and to the same positive outcomes (detailed in the *survey spotlight* below), the effect sizes for the scientific proof model are generally larger than for the time-tested model. This means that the scientific proof model is more strongly related to the outcomes than the time-tested proof model.

Survey spotlight: proof of vaccination effectiveness and safety

The more strongly participants endorsed both the scientific proof_a and time-tested proof_b cultural models, the more likely they were to:

understand the general benefits of vaccines ($r_a=.58, r_b=.37$).

agree with access ($r_a=.48, r_b=.32$) and mandate policies ($r_a=.49, r_b=.30$).

endorse the model of collective responsibility for vaccination ($r_a=.51, r_b=.38$).

endorse the vaccines as instructors or trainers model ($r_a=.54, r_b=.42$).

And, the less likely they were to endorse the vaccines as medicine model ($r_a = -.33, r_b = -.08$).

Both the survey and interview data indicate that the public does not have diminished trust in science as much as it has divided trust.⁶ For example, clinical trials are considered by many to be necessary, but for some it is not sufficient to know if a vaccine will be truly safe and effective until they have observed it over longer periods of time, amongst everyday people like themselves. This can lead to a 'wait and see' approach, especially when it comes to newer vaccines. However, rather than considering themselves experts, or lay epidemiologists – as the Dunning-Kruger Effect theory claims¹⁸ – the public appears to simply have more

6 According to existing studies, a general lack of understanding of the science of vaccines and immunity has been compounded over the past few decades by a growing public rejection of scientific and expert authority, which contributes to decreased vaccine uptake. See Hobson-West, Pru (2007). 'Trusting Blindly Can Be the Biggest Risk of All': Organised Resistance to Childhood Vaccination in the UK.' *Sociology of Health & Illness* 29(2): 198-215.

than one way of understanding scientific knowledge. Therefore, rather than rely on one model exclusively, the public moves back and forth to varying degrees between a model of scientific evidence and a model of time-tested, real-world evidence of vaccine effectiveness and safety.

We see a similar correlation in the survey data with regards to vaccination recommendations. Although not as closely correlated as in the case of scientific proof and time-tested proof, it is also not a simple either/or proposition for the UK public when it comes to trusting medical professionals or trusting their friends and family on vaccination recommendations.

Survey spotlight: trusting vaccine recommendations

90 per cent of survey participants trust the vaccine recommendations of doctors and nurses.

- On average, participants indicated that ‘a large amount’ of why they trust doctors and nurses is both because of their medical expertise and because of their motivation to care for patients.

68 per cent of survey participants said that they trust the vaccine recommendations of their friends and family.

- On average, participants indicated that ‘quite a bit’ of the reason is because of those peers’ experiences with vaccines and because they share the same views on vaccination.

In the interviews, the belief that there is universal access in the UK to all health care services contributes to vaccination being ‘taken for granted’ as built into the national health care services that are available to all residents of the UK. This fundamental understanding of universal and equal access leads people to attribute non-vaccination with individual or cultural characteristics. For example, in interviews, participants used the figure of a ‘single mother of three’ to explain the prototypical overburdened, working-class person for whom access to vaccination could be difficult. When people can assume that practical barriers are created from overwhelming life conditions, it is possible that policy solutions will focus on changing the conditions of a specific type of individual, e.g., ‘single mother of three’, rather than making more systemic changes.¹⁹

However, in the overall survey data, participants neither agreed nor disagreed with the idea that there are specific systemic and individual reasons why people don’t get vaccinated (e.g., inability to take time off work, lack of reliable transport, individual religious beliefs or political views). In addition, participants were fairly neutral in their agreement that socioeconomic stressors, such as life circumstances and income, create barriers to vaccination. That said, participants who had a greater understanding of how socioeconomic stressors create barriers to vaccination also indicated higher agreement with the idea that there are both systemic and individual reasons for why people may not be vaccinated.

Survey spotlight: individual and systemic reasons for vaccination

People who more strongly agree that socioeconomic stressors have negative impacts on vaccination uptake are more likely to:

- agree with systemic reasons why people might not be vaccinated (e.g., inability to take time off, lack of reliable transportation; $r = .52$).
- agree with individual reasons for not being vaccinated (e.g., religion, political leaning; $r = .31$).

As this survey data show, there is a stronger association among the UK public between their understanding of socioeconomic stressors and systemic barriers to vaccination than between socioeconomic stressors and individual reasons for not getting vaccinated. This indicates that the UK public can, and does in fact, think about why a person might not get vaccinated beyond personal choice. Specifically, it indicates that the public can think about solutions that go beyond changing an individual's life circumstances to address vaccinations as systemic problems of access that affect entire communities.

However, vaccination is fundamentally understood by the public as an individual choice, and that choice is informed by a person's way of life, including one's health practices and beliefs, and the values that inform those practices and beliefs. Punctuating this pattern of thinking is the belief that access to vaccination services is universal throughout the UK through the NHS. Along with individualistic thinking about health, interview participants applied cultural models of universal access to health care and health care nationalism to reason about what might influence decisions to get vaccinated. For many, particularly white, interviewees, participation in the NHS symbolised buy-in to the UK way of life, and thus represented a person's level of shared values and belonging in UK society. Interview participants cited people's religious beliefs, non-UK cultures and non-English languages as major impediments to vaccine uptake, as well as also representing a lack of integration into UK society. This reasoning, then, leads to assumptions that a reason for not vaccinating can be traced back to one's immigrant background, which follows a logic that leads to racialised assumptions of religious and cultural beliefs.

Survey data demonstrate similar racialised patterns of thinking emerged from the in-depth interviews.

Survey spotlight: race, nation and vaccination

- non-white participants are more likely than white participants to agree with both individual and systemic reasons why people may not be vaccinated ($p's < .02$).
- white participants are less likely than all other racial groups to agree with the idea that there are broader socioeconomic barriers to vaccination ($p's < .001$).
- white participants are more likely than any other racial group to say they trust the vaccine recommendations of doctors and nurses ($p's < .03$).
- white participants are more likely to agree that the NHS symbolises UK values and the UK way of life ($p's < .005$).

In this case, the survey data reinforce the findings from the interviews that understandings of why people get vaccinated can be understood in individualistic, racialised, and nationalistic terms. The deep-seated belief that health is determined by individual choices is coupled with the assumption that everyone in the UK has access to vaccination services, which leads to reasoning that the decision to get vaccinated is guided by personal values and beliefs. This framing allows for a logic that people who do not get vaccinated must hold different values and beliefs than the rest of UK society, which, by virtue of creating and maintaining universal access through the NHS, is assumed to value vaccination.

What cultural models of vaccination access and uptake mean for the field

The underlying public belief that there is equal access to health care and vaccination to everyone in the UK makes it difficult to recognise disparities in access and makes it difficult to argue for systemic changes to improve access. On the positive side, this also means that the UK public's values have produced the expectation of universal and equitable access to health care services, including vaccination. This could make it easier to advocate for governmental policies to improve access to vaccinations once the barriers to access are made visible for the public.

There is also some limited opportunity to leverage the public's mindset around socioeconomic stress as a source of practical barriers to access, and thus, drawing attention to the need for solutions to those practical barriers. Although focused on specific circumstances of people's lives, and potentially reinforcing stereotypical thinking about women and people of lower income, this assumption does show some possible signs of systemic thinking. This is a potential leverage point to gain support for policies to improve access by reducing practical barriers.

When the public also holds beliefs that participation in the NHS signifies belonging to UK society, then not participating in vaccination (understood to be administered through the NHS) can also represent a choice to not belong to UK society. This makes it difficult to address policies of access or uptake without activating unproductive, even harmful, racial stereotypes of the people that the public identify as the source of low vaccination rates.

There are also opportunities that the field can leverage within the models that the public uses to form trust in vaccination. For example, our research shows that the public trusts scientific evidence and medical expertise, but that it also looks to real-life experience over time and the advice of peers. When the field relies solely on scientific and medical arguments, to the exclusion of other sources, it can unintentionally polarise those who also take advice from their friends and family or who also wait to see if people are getting sick or have been harmed by a vaccine over the years.

Preliminary recommendations for talking about vaccination access and uptake

Lead with disparities in vaccine *access* rather than disparities in vaccine *uptake*. This will allow you to explain how problems of vaccine access shape inequities in vaccine uptake. This will also likely avoid cueing classist and racist rationales among members of the public that could lead to ‘othering’ of specific groups or communities.

Give concrete examples of the practical barriers to vaccine access in the UK. This will help give visibility to the barriers that do exist and then propose structural solutions to remove those barriers and improve access.

Explain how implicit bias and other forms of racism and discrimination shape people’s experiences of health care, including the universality and accessibility of that care, which, in turn, shapes their behaviour regarding vaccination.

Build on the trust that the public has in doctors and in the NHS, but do not ignore or dismiss the influence of their family and friends. That could end up alienating them and making them less receptive to the helpful information about vaccination provided by the medical community.

Couple scientific evidence with other sources of proof. In addition to scientific sources, the public draw evidence about vaccine effectiveness and safety from their peers and other sources, and focusing on how they complement each other will help people focus on the benefits.

Connect with audiences through helpful stories of lived experiences with vaccination. This will be helpful in adding support to scientific claims of safety and efficacy and help people see the benefits but can also be helpful in giving visibility to the otherwise unseen barriers to access.

Thinking about solutions to improve vaccination

As discussed throughout this report, there is a very real tension between expert and public understandings of how vaccines work, the importance of vaccination to illness prevention, access to vaccination services, and vaccine uptake. Similarly, where the experts in the field see the barriers and solutions as systemic, the public hardly recognises that problems of access exist and attributes uptake disparities to personal beliefs and cultural differences and focus their thinking about solutions accordingly.

Core ideas from the field regarding solutions to improve vaccination

Experts in the field believe that improving uptake rates in the UK requires policy change to address systemic barriers. This is generally understood as a question of public investment in institutions and programmes. For example, one recommendation of the field is to increase NHS funding to expand and strengthen the role of immunisation coordinators, especially in areas with lower rates of uptake. Another is to make vaccination accessible outside of the NHS, including in places of worship, places of work and through community organisations, as well as improving vaccination reminder and tracking services. Experts in the field also recommend building community-based partnerships to engage local communities that have lower rates of vaccination and building cultural competency and addressing systemic racism within the medical profession.

How the public thinks about solutions to improve vaccination

The public largely doesn't recognise problems with access, so doesn't see the need for systemic changes

As we saw above, the public mostly does not recognise that a problem with access to vaccination even exists. This makes it difficult for the public to think about systemic solutions. For example, the public doesn't see a need to restructure vaccination coordination because vaccination services in general are nearly invisible to them and assumed to be operating smoothly within the NHS. When the system is nearly invisible, the problem has to touch people personally in order to recognise that a problem exists, and even then, solutions can then be understood on a level of resolving certain types of individual conditions, such as the overwhelmed single mother of three who cannot find the time to get her or her children vaccinated. The problem, and therefore the solution, are imagined as isolated in the conditions of particular people, rather than existing in society as a whole. This can lead to solutions that rely on the persuasion of individuals to change their behaviour. In practice, this strategy of public persuasion rests on the assumption that people who have low vaccine confidence lack the proper information and that if they had that information, they would change their minds, rather than on systemic change.

The public distrusts government generally but trusts the government's public health system.

There is an assumption in UK public thinking that politicians are self-interested and that they do not look out for public interest. This assumption drives public thinking about government due to an association that the people who are elected to government, i.e. politicians, are understood as the 'government'. They reason,

therefore, that if politicians are motivated by self-interest, then the government cannot be trusted to look out for the interests of the public, which they believe is what the government should do. In the context of vaccination, however, the public does trust the government to be responsible for vaccination programmes in the UK. This speaks to the relationship in the public mind between the government and the NHS as a public health institution that is managed by the government. This is where public thinking about the NHS – as a universal and equitable system, and as an institution of national culture – produces a sense that the government is successfully managing vaccination.

The belief that the government successfully manages vaccination in the UK has been recently reinforced by the public perception that the UK government has successfully handled the rollout of coronavirus vaccines.²⁰ In addition, due to the foundational assumptions that vaccination is an individual choice and that there is universal access and no barriers to vaccination services in the UK, public thinking about government solutions focuses on uptake. This can make it difficult for people to identify barriers to vaccination that are not attributed to individual lifestyle and personal choice, and thus thinking about solutions follows suit.

How the cultural models about solutions to improve vaccination shape attitudes

This research has shown that thinking around uptake is guided primarily by *health individualism*, along with nationalistic and racialised cultural assumptions about those in the UK who choose to not get vaccinated. This reasoning about who is not getting vaccinated and why allows members of the public to set aside their general distrust for the government and politicians in the case of vaccination. For example, interview participants expressed an assumption that non-white, often immigrant, communities distrust the government because of historical mistreatment due to their ethnicity and race. However, while sympathetic to this distrust, interview participants apply models of universal access and health nationalism to claim that, despite historical mistreatment, racial minorities should still trust the government on the question of vaccinations.

The survey data supports the finding that the UK public, regardless of race or class, ‘somewhat agree’, on average, that the UK government is corrupt.

Survey spotlight: corrupt government model

The more that participants endorse the corrupt government cultural model, the less likely they are to:

- agree with the overall benefits of vaccination ($r = -.27$).
- agree with the model of vaccines as instructors or trainers ($r = -.16$).
- agree with vaccination access ($r = -.10$) or mandate policies ($r = -.24$).

The survey data also find that, generally, the UK public supports policies that are meant to increase vaccine uptake and access, and that this policy support correlates with productive cultural models and outcomes.

Survey spotlight: policy support

The more strongly that participants agree with policies to increase access to vaccination, the more likely they were to:

- agree with a cultural model of vaccines as instructors or trainers ($r=.53$).
- agree with a cultural model of collective responsibility for getting vaccinated to keep others in the community healthy ($r=.53$).
- agree with a cultural model of trust in the scientific proof for vaccination ($r=.48$).

And, the less likely they are to agree with a model of vaccines as medication ($r=-.24$).

When asked in the interviews to think about solutions to improve vaccinations in the UK, participants leaned heavily on the idea that persuasion through providing information, education and public relations is the main solution. This approach does not generally recognise systemic barriers and therefore does not generally imagine systemic solutions.

What cultural models about solutions to improve vaccination mean for the field

One of the principal challenges presented for the field is that the public imagines vaccination solutions almost exclusively in terms of individual uptake, whereas experts see improving systemic access as one of the primary solutions to increasing uptake. This discrepancy makes it difficult to argue for systemic changes and could make it tempting to use persuasive messages aimed at changing individual behaviour to increase uptake. Another challenge for the field is the public's distrust in the motivations of government officials. The assumption that 'politicians' are motivated by self-interest, rather than serving the public interest, translates to government more broadly in public thinking. This could make it difficult to communicate about vaccination as a public health issue that the government should address, rather than as only an issue for the NHS.

As noted in the Introduction to this report, since the rollout of the coronavirus vaccine, the UK has experienced an increase in vaccine uptake and a decrease in vaccine hesitancy across the population. Interview participants expressed that they had not thought much at all about vaccination or vaccines until the pandemic and subsequent vaccination programmes became such an overwhelming part of their lives. Furthermore, interview participants commented that their experience with the coronavirus vaccines had increased their knowledge of vaccines and vaccination and positively impacted their thinking about the benefits and importance of vaccination. This would indicate that there are opportunities for the field by making vaccination a more visible issue for the public and connecting with an increased public trust in the government to manage vaccination services.

The public's strong beliefs about, and trust in, the NHS presents opportunities in this regard for the field. When people believe so widely in the national health care system, it is easier for them to believe in improvements to public health. The NHS as an institution lives in UK culture somewhat separately from government. This could make the public more receptive to vaccination policies that are framed as strengthening that system and could tap into the existing cultural model of collective benefit and responsibility that the UK public holds regarding vaccination. In this way, the public support of the NHS broadly and the vaccination-specific trust that the public has in government could be helpful in promoting the systemic changes that experts want to see, such as immunisation coordinators.

Preliminary recommendations for talking about solutions to improve vaccination

Link vaccination access to vaccination uptake whenever possible when communicating about solutions to improve vaccination in the UK.

Give examples of structural solutions to improve vaccine access in the United Kingdom and explain how they would work, especially among underserved communities and racial and ethnic communities. This will likely build a sense that inequities in vaccine access and vaccine uptake are solvable problems, rather than just the way things are.

Frame vaccination as a public health solution. This will activate the already existing thinking about the collective benefits of high vaccination rates (herd immunity/community immunity). This frame will also allow for building on the trust that the public has in the NHS as the source of vaccination services to reframe vaccination as a public health solution.

Leverage the success of the coronavirus vaccine rollout. The UK public's awareness and interest in vaccination has been heightened from the individual and collective experiences with the coronavirus vaccine. This collective experience provides a precedent for expanding access as a way to increase uptake and strengthen support for public health systems, including the NHS – considering how important the NHS was to the success of the COVID-19 vaccination efforts.

Conclusion

It can be tempting to boil down the question of vaccination to whether someone gets vaccinated. It is, after all, a personal intervention of putting something into one's body. Therefore, it would stand to reason that much of the public and private conversation about vaccination revolves around a person's decision to get vaccinated and a person's beliefs that guide that decision. From this perspective, it becomes understandable that conversation about vaccines in the news media is dominated by discussions of vaccination rates and vaccine hesitancy.

Because the conversation is largely focused on why people are 'hesitant' to get vaccinated, the narrative that is constructed revolves primarily around the reasons to not get vaccinated, the risks, the potential harm. To increase vaccinations in the UK, there must be a shift in what the public's attention is drawn to when they are prompted to think about vaccination. Scientists, doctors, researchers, advocates and public health workers in the field of vaccination know that vaccines are safe and effective, that they are important for public health and that practical barriers to getting vaccinated must be addressed to maintain that public health. But as this research has shown, there are important gaps in how the public understands how vaccines work, how the public understands why vaccination is important, how the public understands the reasons that people are not vaccinated, and how the public understands barriers to accessing vaccination services.

The UK public does hold some productive models for understanding what vaccines are and what they do, as well as a strong importance placed on the national public health system. However, highly individualistic ways of thinking make it difficult for people to see vaccination as a question of inequitable access or systemic change, and instead see it in terms of cultural differences within the UK population. However, as this research shows, they do hold certain assumptions and beliefs that guide patterns of thinking that can, in fact, help to shift public thinking towards collective and systemic understandings of vaccination as an important public health measure. The UK public does want to know that vaccines are scientifically proven in clinical trials, but, as non-scientists, they also want the assurances that come with seeing a decrease in illness and no harm from the vaccine to everyday people like them. Similarly, people do trust the advice of doctors, but they also trust the advice of their peers, especially their family and friends. Explaining that vaccines work by increasing your body's proficiency to respond to viruses can reduce thinking about risk and helps to instil a more scientifically accurate understanding of vaccines that will help to avoid unintentional pitfalls that come with talking about it as if it's medicine or a protective shield.

Additional research to further explore how to reframe public thinking and discourse most effectively would be the next step on the road to improving access across the UK and, ultimately, to increasing uptake, especially amongst the populations where it is most needed. The analysis and recommendations in this brief are just the first step to shifting public discourse around vaccination in the UK. Specific framing

strategies need to be developed and tested to address the gap between how the public and experts understand the importance of improving access to vaccination to increase uptake. Another important question to address is the public understanding that improving uptake comes down to personal choices and beliefs, which contrasts with the field's understanding of practical barriers as major determinants of uptake. These are just a few of the foundational gaps in understanding that would need to be prioritised in further research to arrive at effective reframing strategies that would both improve access and increase uptake.

Although the preliminary recommendations contained in this brief have not been tested empirically, they do contain insights that the field can begin to consider immediately in how it communicates with the public about vaccination. In the ever so delicate balance between individuals and the collective, it is increasingly important to lead with the discrepancies in people's ability to access vaccination services and to engender a sense of collective responsibility to provide that access, so that everyone stays healthy. Hopefully, the analysis and recommendations in this report and other reports related to this research will encourage the continued exploration of strategies to reframe the conversation away from discrepancies in uptake and towards equitable access, and away from a discourse of hesitancy and towards a discourse of acceptance.

Endnotes

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