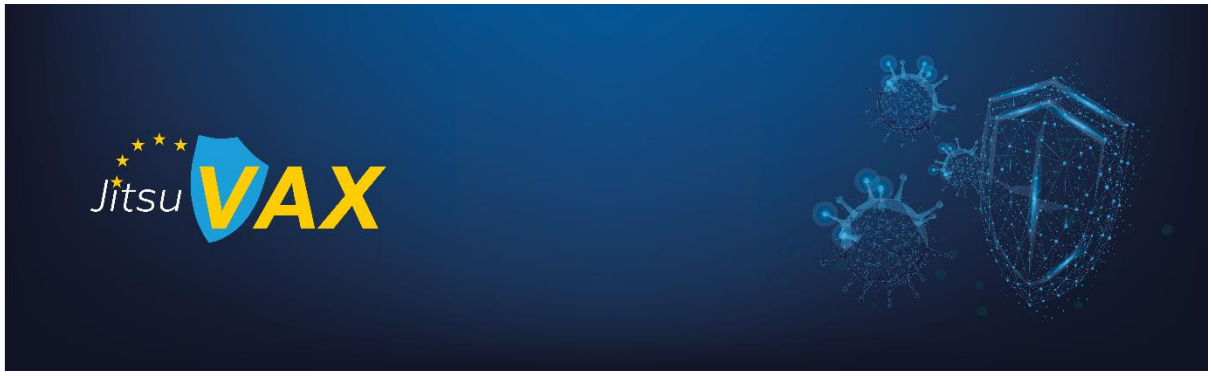

JITSUVAX:
Jiu-Jitsu with Misinformation in the Age of Covid

Qualitative study of determinants of healthcare professionals' vaccination behaviours

March 2023

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JITSUVAX Deliverable 1.3

A qualitative study of the determinants of healthcare professionals' vaccination behaviours

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Authors:	Amanda Garrison, Emma Anderson, Dawn Holford, Harriet Fisher, Pierre Verger
Reviewed by:	Stephan Lewandowsky
Contacts:	amanda.garrison@inserm.fr , Emma.Anderson@bristol.ac.uk , jitsuvax@bristol.ac.uk
Consortium:	**University of Bristol**, Beacon House Queens Road, Bristol, BS8 1QU, UK **Universität Erfurt**, Nordhauser Strasse 63, Erfurt 99089, Germany **The Chancellor Masters and Scholars of the University of Cambridge,** Trinity Lane, The Old Schools, Cambridge, CB2 1TN, UK **Turun yliopisto**, Yliopistonmaki, Turku 20014, Finland **Observatoire Régional de la Santé,**27 Boulevard Jean Moulin, Marseille 13005, France **Universidade de Coimbra**, Paço das Escolas, Coimbra 3001 451, Portugal.

Contents

Summary

This document includes information related to the qualitative study to explore vaccination behaviours conducted among healthcare professionals (HCPs) in France and the United Kingdom (UK).

Scope and purpose of this document

This document details the background information related to interactions between HCPs and their patients, and the main objectives of the qualitative study. The methods of this study are also described, including the development of a common interview guide for researchers in France and the UK, recruitment procedures, and analysis plans. Finally, the results of the study are presented. A scientific article is planned to be submitted to a peer-review journal on this subject in the summer of 2023.

Project overview

Vaccine hesitancy—the delay or refusal of vaccination without medical counter-indication—has been cited as a serious threat to global health by the World Health Organization (WHO), attributing it to misinformation on the internet. The WHO has also identified Health Care Professionals (HCPs) as the most trusted influencers of vaccination decisions.

JITSUVAX will leverage those insights to turn toxic misinformation into a potential asset based on two premises:

1. The best way to acquire knowledge and to combat misperceptions is by employing misinformation itself, either in weakened doses as a cognitive “vaccine”, or through thorough analysis of misinformation during “refutational learning”.
2. HCPs form the critical link between vaccination policies and vaccine uptake.

The principal objective of JITSUVAX is to leverage misinformation about vaccinations into an opportunity by training HCPs through inoculation and refutational learning, thereby neutralizing misinformation among HCPs and enabling them to communicate more effectively with patients. We will disseminate and leverage our new knowledge for global impact through the team’s contacts and previous collaborations with WHO and United Nation International Children’s Emergency Fund (UNICEF).

Background

Vaccine hesitancy is an important public health barrier to attaining sufficient vaccine coverage for vaccine-preventable diseases around the world (1,2). Healthcare professionals (HCPs) are a major source of information for patients regarding vaccination (3–5), and vaccine attitudes among HCPs can greatly impact their recommendation behaviors with patients (6–8). Previous literature has described vaccination decisions as being centered around trust; suggesting that the relationship and interactions between patient and healthcare professional are pivotal for aiding this decision process (9,10). Some interventions exist to aid HCPs during these interactions with patients, particularly in vaccination-related consultations (11,12). For example, Motivational Interviewing (MI) has been used as an effective method to increase parents’ vaccination intention to vaccinate their young children (13). However, HCPs are not always well-prepared to communicate with patients who are very hesitant about vaccination and may have several arguments against vaccines. Documenting the anti-vaccination arguments that patients disclose to HCPs during consultations, how HCPs react and respond to these arguments, and the problems that arise during HCP-patient interactions are all

important aspects in understanding how to better equip HCPs to discuss vaccination with hesitant patients.

The JITSUVAX quantitative survey in Work Package (WP) 1 explored the psychosocial determinants of vaccination behaviors in HCPs in five participating countries (Finland, France, Germany, Portugal, and the UK). The survey used the adapted and validated International Healthcare Professionals Vaccine Confidence and Behaviors (I-Pro-VC-Be) questionnaire (described in Deliverables 1.1 and 1.2). The survey also inquired about anti-vaccination arguments that HCPs may hear from patients during consultations and asked how easy it was for HCPs to respond to these arguments. Responses related to these contrarian arguments are being used in WPs 2 & 3 to develop the refutational interview, a tool to be used by HCPs to help rebut these arguments with patients during consultations.

To better understand how prepared HCPs feel to discuss vaccination with patients, what transpires during these consultations, and which tools and trainings could help HCPs in these discussions, we carried out qualitative interviews with HCPs in France and the UK between June and November of 2022. The objectives of these interviews were to:

1. Learn about the conversations that HCPs have with patients regarding vaccination, from the point of view of HCPs
2. Explore the barriers to effective communication between HCPs and their patients regarding vaccination, and to identify what could help HCPs feel more confident during these interactions with patients

Materials & Methods

Population and recruitment

The target population for the study was healthcare professionals involved in vaccination in France and the UK. Methods to recruit the target populations differed between France and the UK due to availability of personnel and resources.

In the UK, HCPs who completed the quantitative, online survey in WP1 were invited to participate in the qualitative study and asked to leave their e-mail addresses at the end of the survey if they were willing to be contacted for a follow-up interview. A total of 104 invitations were sent to HCPs (nurses and physicians) in the UK. Recruitment invitations were sent by email in a series of batches and continued until the researchers agreed that a range of healthcare professionals were represented (e.g. by gender, region, specialty) and that reasonable 'data saturation' to meet the main research objectives had been achieved (14). To ensure representation of healthcare professionals with varying levels of vaccine confidence within the study.

In France, contact information of General Practitioners (GPs) was available online through publicly available list-serves and GPs were asked to share information about the qualitative study to colleagues who could be interested and could contact French researchers (snowballing). Nurses were later added as part of the study population in France, due to the recent expansion of their role in vaccination after the COVID-19 pandemic (prescription of all types of vaccines in the official vaccination schedule in France). The Regional Union of Healthcare Professionals for Nurses (URPS Infirmières) was approached to recruit nurses in a second wave. A total of 40 invitations were sent to HCPs in southeastern France. In both countries, attention was paid to HCP diversity (gender, age, profession, and level of vaccine confidence). Recruitment continued until reasonable data saturation, as justified by researchers carrying out the interviews in both countries, with the expected sample size of 30 HCPs in the UK and 20 HCPs in France.

Data collection

Prior to participation, individuals were provided with an information sheet detailing the purpose and objectives of the study. Signed, informed consent was obtained from HCPs prior to study participation. The semi-structured, open-question interview guide (Appendix 1) was developed by the French and UK research teams. The questions focused on: (i) HCPs' experiences of discussing vaccination with patients; (ii) their confidence in having conversations about vaccinations, and; (iii) barriers and facilitators to communicating with patients about vaccination. HCPs were also asked questions related to training they had received around vaccination and patient communication and the gaps they identified in their training, as well as their perceptions of the impacts of the pandemic on their clinical work.

Interviews were carried out by the study researchers (AG, EA, HF, DH) in French or English, either by telephone or by videoconference, and lasted between 20-60 minutes. All interviews were audio-recorded with the explicit permission of participants. Participants received compensation in the form of a voucher (£20 in UK, €50 in France) in exchange for their time. The compensation rate was determined in advance through consultation with health professionals of each country.

Qualitative analysis

Researchers had regular (fortnightly) meetings to discuss the first few interviews in each country and adapt the topic guide accordingly. Data collection ended when researchers (during team meetings) agreed that data saturation was likely to have been reached, as later interviews were not providing significant novel information to answer the main research questions. Audio recordings of all interviews were transcribed verbatim, anonymised, and cross-checked for accuracy by the researcher who undertook the interview. In France, as interviews were conducted in French, they were transcribed and translated into English and cross-checked by a second researcher.

A Coding Framework was developed by researchers during team meetings after initial exploratory analysis of a subsample of ten interviews. The Coding Framework has nine overarching categories of interest based on the core areas of questioning and key areas of interest arising from researcher discussions (Table 1). This framework was used to guide ongoing coding. Researchers (AG and EA) took a thematic analysis approach to generate themes within each category of this framework, examples of which are presented in this document in the results. For the 'Patient concerns with vaccination' category, data were coded deductively into themes aligning with the eleven broad attitude roots identified in D2.1 (Taxonomy of Fallacious Arguments against vaccination); for the 'Vaccination attitudes and behaviours of HCPs' category, data were coded deductively into themes corresponding to ten attitudes and two behaviours measured by the I-Pro-VC-Be. For the other categories, analysis continued inductively to generate themes (via coding, note taking and team discussion) as an ongoing iterative process. Following this report, researchers will continue this analytic process to provide results for the scientific article to be submitted for publication in the summer of 2023.

Qualitative analysis is being completed through the use of NVIVO 1.7.1.

Ethical consideration

Prior to study commencement, ethical approval was provided by the Ethical Committee of Aix-Marseille Université (AMU) (application 2022-10-20-007) in France; and the Faculty Research Ethics Committee of the University of Bristol (application reference 119594).

Table 1. Nine categories of the Coding Framework.

#	Category	Description
1	Patient concerns with vaccination	Concerns elicited by patients against vaccination; 11 attitude roots
2	Vaccination attitudes and behaviours of HCPs	Attitudes and behaviours related to vaccination in HCPs; I-Pro-VC-Be items
3	HCP-patient interaction	Regarding an interaction that HCP had with a patient(s)
4	Training	Initial or continued medical education mentioned by the HCP
5	Sources of information	Cited sources of information that the HCP mentioned
6	Emotional responses during HCP-patient interaction	Emotions or feelings described by the HCP at any point
7	Protest or support of the government	Statements in protest or support of the government, authorities, or public health entities
8	Impacts of the COVID-19 pandemic	Statements related to the COVID-19 pandemic and vaccination
9	Type of vaccine	Other types of vaccine (outside of COVID-19 vaccines) spontaneously mentioned by the HCP during the interview

Results

Table 2 displays descriptive characteristics of study participants in France (n=18) and the UK (n=23). Of the 41 HCPs interviewed, 15 (37%) were GPs, 24 (58%) were nurses, and 2 (5%) belonged to other professional categories. There was representation of participants in both countries in terms of sex, age, whether they had children, and their vaccination status for influenza (COVID-19 vaccination was generally uniform, apart from one HCP in the UK who was unvaccinated). Within the entire population of this study, 13 (32%) were identified has being vaccine hesitant, according to cut-offs indicated by researchers. These cut-offs for vaccine hesitancy are limited, however, since it was not possible to distribute the entire I-Pro-VC-Be to all participants of this study.

1. Patient concerns with vaccination (11 attitude roots)

HCPs discussed the concerns their patients brought up concerning vaccination during consultations. For this coding category, the 11 attitude roots identified in WP2 within the JITSUVAX project were applied to the data as deductive themes. These attitude roots can be thought of as the underlying psychological attributes that can motivate vaccine hesitance, such as personality, values, or emotions (15). In other words, it is these attitude roots that manifest in specific behaviours such as expressing an argument against vaccination. Details related to the definitions and how to identify these roots can be found in Deliverable 2.1 (Taxonomy of Fallacious Arguments against vaccination). These definitions are also available for public use at the website: https://jitsuvax.info/.

Table 2. Descriptive results of participants in France and the UK.

Parameter	France (N=18) n (%)	United Kingdom (N=23) n (%)	Total (N=41) n (%)
Profession			
General Practitioner	8 (44)	7 (30)	15 (37)
Nurse	9 (50)	15 (65)	24 (58)
Other [a]	1 (6)	1 (5)	2 (5)
Sex			
Female	9 (50)	17 (74)	26 (63)
Male	9 (50)	6 (26)	15 (37)
Age			
≤30 years	5 (28)	3 (13)	8 (20)
31-49 years	7 (39)	7 (30)	14 (34)
≥50 years	6 (33)	13 (57)	19 (46)
Have children			
Yes	11 (61)	18 (78)	29 (71)
No	7 (39)	5 (22)	12 (29)
Fully vaccinated [b]			
Influenza	7 (39)	13 (57)	20/41 (49)
COVID-19	18 (100)	22 (43)	40/41 (98)
Vaccine hesitant [c]			
Yes	8 (44)	5 (22)	13 (32)
No	10 (56)	18 (78)	28 (68)

[a] Other = pharmacist (France); community health worker (UK).
[b] Fully vaccinated against Influenza = 3 vaccinations against influenza in the past 3 years; fully vaccinated against COVID-19 = all doses of the vaccine + booster.
[c] Vaccine hesitant = responded negatively to at least 1/3 questions related to confidence in vaccines (France); scored 4.5/5 for each least one of the 3 items related to confidence in vaccines from the I-Pro-VC-Be in the WP1 survey (UK).

We present below illustrative quotations for each of the coding framework categories, and examples of some of the theme ideas generated via our ongoing analysis within each category. Participants have been given a study identifier number to protect anonymity, and descriptors have been added to indicate gender, age, and profession.

In the UK, examples of all 11 attitude roots were spontaneously mentioned by HCPs as concerns about vaccinations that their patients have raised. In France, the attitude root of 'perceived self-interest' was not mentioned by HCPs as being an argument they hear from patients. The root most commonly reported by UK HCPs was 'Fear and phobias', followed by 'distrust', 'unwarranted beliefs' and 'conspiracist beliefs'. Table 3 displays the 11 attitude roots and example quotations from interviews in both countries, when applicable.

Table 3. The 11 attitude roots of vaccine hesitancy and quotations from interviews with HCPs in France and the UK.

Attitude Root	Quote from HCP in France	Quote from HCP in the UK
Conspiracist beliefs	"Well, tomorrow... [the patient could] tell me that the vaccine for Covid will make them cry blood. And...it is me who must contradict that?" *(FR04, Male, 41, GP)*[1]	"I have met people that know that Bill Gates is watching them through the little chips that they pop in the COVID vaccine" *(UK19, Female, 64, Nurse)*

Distrust	"They are a bit...fed up. I have the impression that because we ask them to have so many boosters, they lose a bit of trust...it is true that it is hard to keeping finding arguments." *(FR05, Female, 27, GP)*	"…there's a lot of people who are more sceptical about the COVID vaccine because in their view it is rushed." *(UK18, Female, 25, Nurse)*
Unwarranted beliefs	"I think that it is people who are a bit closer to nature and [say] 'oh well vaccines are bad'...and they consider vaccines to not be natural." *(FR15, Male, 35, GP)*	"I think if they haven't had the flu vaccine for many years, they're probably not going to because they think been alright up to now and that's the argument I've heard lots of time that they haven't needed it before" *(UK12, Female, 65, Nurse)*
Worldview and politics	"But then, studies...I think [patients] can't see what is behind all of that, they don't know if it is the doctors or the labs that [are behind that]." *(FR01, Male, 26, GP)*	"I think, some of the historical roots of Communism in those countries means that it's very difficult for people who've come from those countries to trust and basically do what the governments tell you to do, which is take a vaccine, and then that cost people their lives, and it is really the culture in this country that shape them into believing that." *(UK27, Female, 57, Nurse)*
Religious concerns	"...there was another person for religious reasons, he was Muslim, so no vaccination." *(FR08, Male, 42, Nurse)*	"you sometimes still get the odd question about sexual health. I find that's more our Catholic schools with that religious focus and no sex before marriage, that can be quite tricky to get round. Because obviously that's a big part of their life and a big part of them and their identity." *(UK09, Female, 52, Nurse)*
Moral concerns	"We tried to de-villainize the Covid vaccine. Meaning...people would say, 'well yes you want us to be vaccinated because you're a nurse'... almost as if they thought we would earn more money for it." *(FR07, Male, 57, Nurse)*	"they come for their vaccines, they especially want the HPV vaccine if Dad has been because he don't want his daughter having sex definitely that one." *(UK21, Female, 57, Nurse)*
Fears and phobias	"...[patients] ask a lot of questions about what is in the vaccine, if there are adjuvant products that can be toxic, [if] severe side effects exist." *(FR03, Female, 28, GP)*	"A lot of those doubts are around the fact well, I've had COVID, I'm now putting COVID into my body again – am I going to get it again, is it going to be as bad?" *(UK08, Male, 65, Nurse)*

		"The children ask 'will it hurt' that's their biggest one, will it hurt?" *(UK12, Female, 65, Nurse)*
Distorted risk perception	"You would waste your time...to try to get [young, hesitant patients] to understand that vaccination will protect them and that they have a risk, [because] for them, there is no risk" *(FR12, Male, 67, GP)*	"Quite often there that people are 65, really fit and healthy, perhaps still working, perhaps going to the gym and they come round and they sort of say 'well I'm fit and healthy, I don't think I'm very high risk of pneumonia so I don't think I'm going to bother with this, I don't think it's a risk to me'" *(UK18, Female, 25, Nurse)*
Perceived self-interest	[No example]	"someone said that they're just waiting for everybody else to have it so they're going to protected by everybody else so that's seen to be unfair" *(UK02, Male, 46, GP)*
Epistemic relativism	"They said, 'Well, me, I don't want to get vaccinated because I know anyways that that is bullshit, that never works, etc.'" *(FR01, Male, 26, GP)*	"A lot of people talk to their friends or their family or people in their community, so they often come in saying, you know, my cousin's wife had whatever reaction to whichever vaccine, so there's some debunking to be done there." *(UK04, Female, 33, GP)*
Reactance	"[Vaccination] was out of the question, [people] were ready to stop leaving their homes in order to not vaccinate themselves." *(FR01, Male, 26, GP)*	"when it comes down to it, there was a little bit of force going on when the government said oh all healthcare professionals have to be vaccinated and personally, I agreed with it but there was a lot of healthcare professionals saying well this is like a communist state now and we're being forced to do something against our will" *(UK10, Female, 42, GP)*

[1] *In parentheses: (Study identifier, sex, age in years, and profession)*

2. Vaccination attitudes and behaviours of HCPs (I-Pro-VC-Be constructs)

The vaccination-related attitudes and behaviours expressed by HCPs were deductively coded as themes aligned with the attitudes and behaviours measured by the International-Pro-VC-Be questionnaire (developed as part of WP1, while also allowing for extra attitudinal themes to be generated inductively. Detailed information regarding the adaptation and validation of the Pro-VC-Be tool can be found in D1.1 (An instrument to measure determinants of HCPs' vaccination behaviour and attitudes) and D1.2 (A cross-national comparison of HCPs' vaccination behaviour and attitudes), as well as in a publication submitted to *Expert Review of Vaccines* in February 2023. Table 4 presents the ten psychosocial determinants of vaccine confidence and two vaccination behaviours measured by the I-Pro-VC-Be, with example quotations from both countries, where examples were found.

Table 4. The ten factors of psychosocial determinants of vaccine confidence and two vaccination behaviours of HCPs, with corresponding quotations from interviews with HCPs in France and the UK.

Vaccination attitude	**Quote from France**	**Quote from the UK**
Vaccine risk perception	"I find it stupid to pass by [vaccination]. Because the patients, they pose these really complicated questions about really complicated medicines, and sometimes you want to say, 'well, listen there is already a vaccine, it is really simple, there is very little risk, and we can already do it right now.' Me, I think that is the first thing to do." *(FR01, Male, 26, GP)*	". I personally there are more benefits than risks." *(UK07, Male, 46, Nurse)*
Complacency	"Because it is often those who are younger, who do not want to get vaccinated. They are in good health." *(FR12, Male, 67, GP)*	[No example]
Benefit/risk balance perception	"For example, all of the people who were scared of Moderna [because of] myocarditis and all of that...there weren't so many [cases] in the end, and in the end, it isn't something that is so serious. I had some hindsight afterwards, about the benefits and risks." *(FR16, Female, 26, GP)*	"if you look, the rates of cervical cancer since the HPV vaccine has been in have just been amazing. Just the outcome is so obvious," *(UK19, Female, 64, Nurse)*
Collective responsibility	"It annoys me that parents can put their children's lives in danger and the lives of others too, the collective...It is more a collective protection than individual. They refuse this social contract and they put their children directly in danger." *(FR15, Male, 35, GP)*	"I think part of my role is that it is not just a benefit to them to have the vaccine but it is to their family and the wider community." *(UK01, Male, 62, Nurse)*
Trust in authorities	"...what made me uncomfortable was everything concerning what was said by the government. What made me uncomfortable was that I had a hard time, I didn't feel credible. What made me uncomfortable was also that I didn't have enough information..." *(FR09, Female, 57, Nurse)*	"It doesn't help with what happened with the Government where they seemed to be doing it their way and we've had to behave this way, so watch this space." *(UK11, Female, 56, Nurse)*
Commitment to vaccination	"I don't think I really need arguments in favour of vaccination because it is something that...I believe in. And I mean, I regularly inform myself, whether that is for HPV in gynaecological articles, epidemiology on big vaccine campaigns in other countries, or elsewhere." *(FR02, Female, 52, GP)*	"I recognised some of the staff were quite reluctant to get vaccinated, and I thought, well if I can support my team and help educate them about vaccines, I might be able to encourage the uptake." *(UK15, Female, 29, Nurse)*

Self-efficacy	"I am an expert in medications, and vaccines are medications, so we are legitimate in our ability to explain the injection, the side effects, the studies that were done related to this vaccine, and to try to get our ideas across." *(FR18, Male, 30, Pharmacist)*	"I feel very confident in addressing the topic of vaccination." *(UK08, Male, 65, Nurse)*
Openness to patients	"we discuss and then after, I tell them, well I don't ask them to decide during the consultation, once we have discussed, at the end I don't ask them, "well it's ok then?" I will not force them, in fact, I really want them to understand the arguments but then I want them to understand that the ball is in their court…" *(FR05, Female, 27, GP)*	"I think it's their body, it's their decision and like I say I feel like we're there to give them the evidence and to encourage them but we're not there – we can't make them have the vaccine" *(UK25, Female, 51, GP)*
Perceived constraints	"[vaccinating against Covid] was not easy because I couldn't take one vial for two injections, I said [to patients], 'wait I need to order it'." *(FR07, Male, 57, Nurse)*	"The accessibility is certain a problem now because we've closed down lots of vaccine centres because we're not doing the volumes and what we haven't provided is a way to do opportunistic vaccines." *(UK05, Male, 52, GP)*
Reluctant trust	"I don't even know if it is true what we were saying, in the sense that we said having a first dose with Pfizer and a second with Moderna, that had more of a protective effect. Afterwards, that helped us because we had a bunch of Moderna doses, and we had to use them." *(FR14, Male, 52, Nurse)*	"When it came to the AstraZeneca so they changed and not to give it to the under-40s it really rocked that confidence in giving it […] but you have to be confident in what's being said. Because it's not done lightly, there's lots of big conversations around this and lots of research with what was happening. So that's where I worked with and that's how I felt better in myself, I must admit I had to talk to myself at times as well really." *(UK09, Female, 52, Nurse)*
Vaccination behaviour	**Quote from France**	**Quote from the UK**
Patient recommendation	"...for the booster [vaccines], [there is] an alarm you say to yourself, 'I must talk about vaccination', [like seeing a] pregnant women, etc. You think about it quickly enough." *(FR01, Male, 26, GP)*	"I promote vaccinations" *(UK04, Female, 33, GP)*
Self-vaccination	"I have four [sons], who are between 13 and 18 years old, and they have been all four vaccinated [against HPV] for two years. So, for me, it is really essential." *(FR02, Female, 52, GP)*	"myself I do take vaccinations every year and, sorry, flu vaccinations especially" *(UK07, Male, 46, Nurse)*

3. HCP-patient interaction

Attitudes towards patients

HCPs often spontaneously described their attitudes towards their patients, either during specific situations or in general. We recognise this as important due to its influence on clinical interactions.

In France, for example, one nurse stated,

> "[hesitant patients] were very closed off to the subject, and in general these types of patients are closed off to a lot of subjects. Because as I told you, it is the media that counts, whatever the media says." *(FR10, Female, 56, Nurse)*

This attitude towards her patients could (consciously or sub-consciously) impact how she interacts with hesitant patients.

Some HCPs would disengage from conversations with hesitant patients entirely, as one GP from France said,

> "... there are things that are irrational, and from the moment I understand that no matter what my response [is], it will not change their way of thinking...I let it go." *(FR02, Female, 52, GP)*

Another GP said that this disengagement also depended on their mood and workload each day, and sometimes they would have the "patience" to have these discussions with hesitant patients.

In the UK, HCPs frequently described their view that patients have the right to choose about vaccinations (and any treatment), with many expressing that maintaining their relationship with the patient was their priority;

> "I did spend a long time discussing it with them but they were adamant that it wasn't for them and that's perfectly fine, it's patient choice." *(UK10, Female, 42, GP)*

Several HCPs described a subset of patients as having 'fixed beliefs' that made vaccination discussions difficult;

> "they've made up their mind and they're not open or receptive. There are some people like that, not many, but they put a wall up and you can tell if you're saying anything, they're just not listening" *(UK26, Female, 51, Nurse)*

Some HCPs positioned patients as having legitimate versus irrational concerns about vaccinations;

> "a very small number who have decided to not do so and we have multiple reasons for them not doing so, some of which are reasonable and some of which are as mad as hatters." (*UK05, Male, 52, GP*)

Content (the 'what')

HCPs described both the content (the 'what') and the style (the 'how') of their vaccination discussions with patients which are summarised below.

For example, a French nurse said,

> "[house-bound patients] don't understand how they can get sick since they don't leave their homes, so we explain that from the moment they invite people [into their] home, they can also be contaminated, even if they don't go out." *(FR06, Male, 37, Nurse)*

This argument was given to an older patient who did not think they needed to be vaccinated because they are not exposed to individuals in their every-day life; however, the nurse tried to explain how they could still be at risk even with limited contact.

In the UK, HCPs described information they provided in discussions, with many reporting that they would explain vaccination benefits and risks (e.g. potential side effects), risks of not vaccinating, vaccine safety and effectiveness and the science and facts of vaccination.

> "explaining that is not a live vaccine, it can't give you COVID, it can't make you ill, it's boosting your immune system, that type of thing with the patients." *(UK26, Female, 51, Nurse)*

HCPs frequently described sharing resources (such as leaflets or links to online information) with patients, and some advised how and where to get vaccinations. Some reported addressing misinformation directly, and some mentioned discussing the reliability of different sources of information.

> "my approach is to reassure them, show them the information we have got and with pregnant women I've found a link to a podcast which I thought they might like to follow up on." *(UK01, Male, 62, Nurse)*

Several HCPs mentioned that they started with an assessment of patient eligibility for vaccination and some started by asking the patient if they wanted a vaccine. Some mentioned that they give a clear recommendation to have the vaccine.

Style (the 'how')

HCPs described several communication styles or techniques they used in discussions.

In both countries, many talked about creating opportunity or asking questions to elicit the patient's perspective, as well as the importance of establishing rapport and a general empathetic or non-judgemental approach (four explicitly mentioned Motivational Interviewing as a preferred style, and some described body language and physical aspects of the consultation they employed to increase patient comfort).

> "'Do you want to explain to us, or tell us what your understanding is about this?' or 'Can you tell us a little bit more about why you feel that way,' and things like that. It's trying to explore that with them, give them the opportunity to tell you what they're concerned about." *(UK26, Female, 51, Nurse)*

> "always trying to stay humble, because I, because I know through experience that that doesn't serve any good to take a strong position that could seem condescending to people who, they themselves are against vaccines." *(FR04, Male, 41, GP)*

> "It is how you use your body language, how you talk to them and it is just general interaction." *(UK01, Male, 62, Nurse)*

> *"*After, someone who is in front of you, the hands on the desk or on their knees, who is looking at you, you feel that the exchange is more honest." *(FR02, Female, 52, GP)*

> "Usually with the teenagers I find if they're reluctant to communicate, it's quite good just to have a general chitchat about something else, nothing about their visit at all you know how are you today, what have you been doing at school and then you kind of just get a little flicker of a connection and then you can build on that." *(UK12, Female, 65, Nurse)*

By contrast, some HCPs described blunt or more confrontational approaches;

> "You have to be quite blunt as such and say which would you prefer to leave you child vulnerable for that week?" *(UK18, Female, 25, Nurse)*

> "I got in one conversation with a lad who was adamant he wanted Pfizer even though he was down to have the Moderna Spikevax, and I said but if you went to a doctor's surgery you wouldn't actually demand a particular type of vaccine if you were travelling. 'I would, I would', he said, and I'm like 'no, you wouldn't'." *(UK11, Female, 56, Nurse)*

Additionally, in France, some described using tactics to "shock" patients into getting vaccinated,

> "that will leave an impression and maybe that will shock them to say "me, I finished with a tube in order to breathe, I couldn't go to the bathroom anymore"…you see, it is shocking if there is someone who is 30 years old who tells you that. And you say "oh, I don't at all want to end up like him." Maybe that will shock them." *(FR01, Male, 26, GP)*

Some HCPs in the UK described responding directly to patient concerns, including trying to turn a concern into a positive. Some used personal anecdotes or analogies to aid discussion.

> "Yeah, I understand, I really understand it's not nice that your child is crying but is it not better to get them all done really quickly." *(UK18, Female, 25, Nurse)*

Many HCPS in both countries described how they would emphasize patient choice, and in this context offer the patient more time to think. Many emphasized the importance of maintaining the relationship, describing the need to "agree to disagree" *(UK09, Female, 52, Nurse)* or 'park' the conversation and move on.

> "I was just, you know, it's your choice, if you don't want to have it now it doesn't mean that you never want to have it, you can always come forward and say that you want to have the vaccine, yeah, nothing challenging." *(UK04, Female, 33, GP)*

> *"*at the end of a consultation, if they were a bit willing or something, but…I don't force them on the subject "well ok, it's ok?" I prefer to let them have time to think about it." *(FR05, Female, 27, GP)*

Other approaches described included opportunistically initiating vaccination discussions, proactively following up on conversations, being transparent about any limits to their knowledge and offering to find out more or referring to other professionals.

Challenges they encountered

Healthcare professionals often discussed challenges to communicating about vaccinations with patients. Identifying these challenges is important to be able to tailor HCP training and information sources.

Some frequently mentioned challenges by HCPs in France were: not having enough theoretical knowledge about vaccines (this was a particular challenge for nurses), not having enough hindsight in terms of benefits and risks for Covid-19 vaccines and therefore not being able to answer certain patient questions, not being able to take the time to enter into a long conversation with a hesitant individual, and not knowing how to respond to vaccine hesitant patients' concerns, particularly those who mentioned conspiracy theories.

In France, a GP said,

> "There are people who are not, and will not, be reasonable. In the sense that, [doctors] can give arguments that are structured... [and people] will not believe you because they have another...another way of thinking." *(FR02, Female, 52, GP)*

The challenge expressed by this GP centred around the fact that they did not feel able to reach people who thought differently than them and thought that this was an insurmountable barrier to communicating with these types of patients. This suggests a need for training to help GPs approach

vaccination conversations (e.g. with more empathy or understanding for different belief systems or ways of thinking). Indeed, training to help GPs develop communication skills and more self-efficacy during these conversations could prove beneficial for these types of interactions.

In the UK, HCPs tended to perceive themselves as competent in communicating with patients about vaccination. Challenges they described included complex consent issues, especially in the context of others' influence (e.g. for patients with learning difficulties, children, or adults with work or other pressure on them to be vaccinated). Other reported challenges included patients with fixed beliefs, and/or who were unwilling to talk, practicalities and lack of time for discussion, lack of clarity about Covid-19 vaccination eligibility due to rapidly changing guidance and the generally challenging context of 'antivaxxer protests'. Some HCPs reported being unsure how to respond to specific patient concerns. For example, *UK15 (Female, 29, Nurse)* said;

> "When I asked her, 'What concerns do you have, can I try and help?' She was saying how she was reading conspiracy theories online. I was a bit like, I don't really know how to address that one, but I was just trying to say to her, 'It is effective, it does go through all these clinical trials, so it is very much safe. This is what you can expect, you might have an achy arm or whatever afterwards.'

4. Training

Format of training

When discussing vaccination training with HCPs, including initial medical training and continued medical education, many mentioned different formats for training courses, mainly comparing in-person and online formats, and their learning preferences.

For example, one GP spoke about a course she received in her initial medical training, saying,

> "Unfortunately [this course] was [done] by Zoom and frankly, me, personally I do not like this format at all. I wasn't the only one. I find that we are humans, and we need to interact through eye contact, [through] things other than a screen." *(FR03, Female, 28, GP)*

Another GP, after being asked if they would attend a training for the refutational interview, said,

> "Well, that depends on the method, if it is [in the evening], willingly, but if that is an entire day, well, [I] would need to find the time to do it." *(FR04, Male, 41, GP)*

Both are examples of formats for training courses that could be useful to keep in mind in order to make training as accessible to HCPs as possible.

In the UK, HCPs mainly described face to face and online or e-learning approaches, while there was also some mention of self-directed learning and learning from other professionals (while working together or via ad hoc conversations).

Individual preferences for training formats varied, though most reported a preference for face-to-face because they benefited from in-person interaction including finding it easier to concentrate and learn from others. Several acknowledged that online formats increased the training access and convenience (e.g. choice of timing and increased reach);

> "I personally prefer face-to-face, I suppose it's more engaging, and it's less distracting when you're in a room with someone. I find I get more out of it, although that might not always be possible, so webinars are still constructive and helpful." *(UK15, Female, 29, Nurse)*

Content of training

UK HCPs described the content of their vaccination training as mainly focused on the practical aspects of vaccination (including administration and storage), some training in theoretical knowledge in vaccination generally and knowledge of specific vaccines. Several described related essential training (e.g. basic life support and anaphylaxis training) they had to take. Some HCPs described a general lack of vaccination-related training, and most respondents reported that training did not cover how to approach vaccination conversations with patients. Several reported drawing on their existing patient communication skills.

> "They teach you very good on what the vaccine is, how it works, but they don't tell you how to sit and talk to a patient. I think you learn that, from my experience of 37 years of nursing." *(UK08, Male, 65, Nurse)*

Relevance of training (sub-theme)

In terms of relevance of the training that HCPs received, in France, one GP said that

> "...for general practitioners, medical studies are not at all adapted, because they don't teach you anything about daily practice." *(FR03, Female, 28, GP)*

This was an opinion expressed by several GPs in France; however, nurses in the country seemed to have different issues with their training, notably the lack of theoretical knowledge related to vaccines that they received in their training. In response to the question, "What training would be most useful for you, related to vaccination?", one nurse said,

> "well theoretical [training], [about] how we make vaccines, all of the different vaccines..." *(FR06, Male, 37, Nurse)*

Several nurses in France expressed similar opinions, saying they did not receive the theoretical knowledge about vaccines that they needed for their profession, how they were made and what exactly they contained. These examples suggest that, for future training programs, they need to contain relevant information for different HCP professions.

In the UK, participants commented on the relevance of training for different professionals, particularly around levels of experience:

> "I think a lot of the skills that I already have are due to the current position I'm in, so for the other vaccinators in my who maybe aren't used to having those challenging conversations, I think they'd find this training particularly valuable." (*UK15, Female, 29, Nurse)*

Work support for training

Participants in the UK reported differing levels of work support for training from there being no training provision (and having to do any one their own and/or in their own time), to it being a work priority and feeling supported to undergo and update training.

> "there's no budget for training for us." *(UK19, Female, 64, Nurse)*

> "I had an email saying, 'Before you do your next shift, can you please be compliant with your resuscitation training as well. So all the mandatory training has to be done, they're very good that." *(UK26, Female, 57, Nurse)*

5. Sources of information

Sources of information for HCP

HCPs reported getting their information regarding vaccination from a variety of sources.

Within the French context, this appeared to differ by medical speciality. For example, GPs often cited public health authorities or scientific journals:

> "I regularly inform myself, whether that is...in gynaecological articles, epidemiology [related to] big vaccine campaigns in other countries or elsewhere." *(FR02, Female, 52, GP)*

Several nurses stated how, especially during the rapidly changing landscape of the COVID-19 pandemic, they often used GPs as their main source of trusted information:

"... when there was a question that I didn't know, I called the doctor for the [vaccination centre]." *(FR09, Female, 57, Nurse)*

In the UK, most HCPs described using 'the Green Book', an official online resource which provides up to date information on vaccines and vaccination procedures in the UK (provided by the UK government) (16); "So the Green Book is the bible that we refer to" *(UK10, Female, 42, GP).* Other official sources including protocols, public health resources and official bulletin updates circulated at work were reported as key information sources. Many also reported consulting colleagues, expert teams or forums.

6. Emotional responses during HCP-patient interaction

Emotional reactions

In response to their vaccination work and interactions with patients, HCPs would express different emotional reactions (both positive and negative) which gives an important insight into impacts of vaccination conversations on clinicians as well as potential barriers to communication.

One example is a GP in France who said, in response to aggressively hesitant patients,

> "[I felt] discouraged…I gave up very quickly. I didn't know what to tell them. I felt a bit humiliated when he took me [as part of] the conspiracy." *(FR01, Male, 26, GP)*

This is an example of a particularly strong emotional response to a patient.UK examples include:

> "I'm very pro-vaccine and so it's frustrating when even what I'm saying is not helping them." *(UK10, Female, 42, GP)*

> "as a nurse I'm going to have to say that I don't agree with what they're saying, and I don't believe what they're saying to me is true, but I'm happy to leave that conversation there. Because I think you can't - you end up in an argument and arguments aren't good, and it doesn't leave, I think it leaves me as a health professional feeling awful" *(UK09, Female, 52, Nurse)*

> "I hadn't worked with adult patients for a long time at the very start. But what was really nice was the support that we were given by the matrons over there, the fact I went back into uniform I was doing my bit for the pandemic, was amazing" *(UK13, Female, 50, Nurse)*

7. Impacts of the COVID-19 pandemic

Changing role of HCPs

One particularity of this study was that it occurred post-pandemic, and HCPs were able to give hindsight on the crisis and reflect on how the pandemic impacted their work. In France, nurses saw significant changes in their capacities in the healthcare system, changes which were expedited due to the emergency situation of the pandemic. The French Ministry of Health gave nurses the right to prescribe vaccines, and on the subject, one nurse said,

> "... speaking for nurses, if you put us in the loop, in fact, ...it made me very happy [when] the government gave us the possibility to prescribe [vaccines]." *(FR07, Male, 57, Nurse)*

In the UK, HCPs described changes to the practicalities of consultations, including communication barriers of mask wearing (which was mostly now in the past) and increased telephone or online contact with patients which for some was more of a permanent change;

> "face to face consults in general are far lesser than what they were pre-pandemic and so that opportunistic chance to do so has lessened significantly." *(UK03, Male, 33, GP)*

Several described an increased workload due to backlogs created by the pandemic,

> "I feel that the referrals have just gone through the roof because everybody's coming in to be referred because they know there's a 2 year waiting list" (*UK10, Female, 42, GP)*.

Several mentioned that patients' demands had increased, including challenging patient behaviour or attitudes, which participant 06 expressed the most acutely:

> "I think the other thing that's also changed everything is everybody is a hell of a lot more demanding when they come in. It wasn't great before the pandemic, it's now about ten times worse with that. Everyone expects everything- half the population expected everything yesterday, they all want something, but that's even worse now. They expect you to be able to deliver the moon in a single consultation which clearly isn't possible, and they I think probably are even more unrealistic, some of them, in their expectations." *(UK06, Female, 47, GP)*

Many HCPs described changes to patients' attitudes which they attributed to the pandemic, including increased patient awareness of vaccinations and healthcare which some felt made discussions easier: "I think from a vaccine point of view, as I say, I feel like probably people are more open to vaccination than they were before." *(UK25, Female, 51, GP).* Some HCPs reported changes to their own attitudes including being more pro-vaccines themselves.

8. Protest or support of government/authorities

Constantly changing information

Many HCPs communicated how information was constantly changing during the COVID-19 pandemic, and how they had certain difficulties in correctly and effectively relaying this changing information to patients.

One nurse explained, "to tell you the truth, what was stressful was that we were really alone because...we had information in real time, we worked with what we had, [and] to tell you the truth, it wasn't really clear...but I admit that the first wave [of the epidemic] was difficult." *(FR07, Male, 57, Nurse)*

This nurse also expressed feeling "alone", suggesting he did not have the support he would have liked from governmental and public health authorities when it came to being adequately informed.

UK HCPs similarly described the changing guidance and confusing public communication which added to the challenges of their patient communication:

> "From a national point of view, JCVI or the NHS, although I'm part of the NHS, don't help itself sometimes, where they change the guidance last minute. […] It used to be that the clinically vulnerable were going to have a booster in the spring and then they move that to the immunosuppressed, but that kind of wider communication didn't go out parents, 'But my child's eligible' and then trying to explain" *(UK13, Female, 50, Nurse)*

9. Type of vaccine

This category served to indicate what specific vaccines HCPs mentioned beyond COVID-19 vaccines, which featured in all interviews. . These other vaccines included those against influenza, pertussis, meningitis, tetanus, shingles, hepatitis, Measles, Mumps and Rubella (MMR), human papilloma virus (HPV) and the infant vaccination schedule.

Human Papilloma Virus

One example of a vaccine that was often referenced is the vaccine against HPV, recommended young pre-teens/teenagers. One GP said that in their regular practice,

> "the [vaccine] that requires the most questions or where examples come to me most regularly, is for HPV, for young teenagers." *(FR03, Female, 28, GP)*

Most participants, in both France and the UK, reported that compared with COVID-19, there were few issues with more 'established' vaccines. Though where interviews explored patient conversations, MMR was mentioned by several HCPs, indicating that MMR myths are still prevalent:

> "that misinformation seems to still be going around and out there really, that people do think there's links autism and things like that, and is just trying to say that the evidence isn't there." *(UK26, Female, 51, Nurse)*

Next steps

Thematic analysis of interviews in both France and the UK are ongoing, with researchers developing the theme ideas mentioned within this document. Our analysis will focus on detailing the challenges that HCPs face when in consultations with hesitant patients, including the role of emotions, and provide recommendations for future HCP training programs based on our results.

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Appendix

Appendix 1. Qualitative Interview Guide (in English)

JITSUVAX Qualitative Interview Guide

Observatoire Régional de la Santé

University of Bristol

[Information Sheet & Consent Form prior to interview]

I. Experiences

I'd like to talk to you about your experiences with vaccination. Could you share with me the ways you are involved with vaccination in your work?

a) What do you consider your role to be in discussing vaccinations with patients?

1. Patient interactions

a) Could you tell me about the last interaction you had with a patient where you discussed their doubts and/or concerns about vaccination?
   - How was the subject of vaccines brought up?
   - Can you describe the doubts raised by this patient?
   - How did you respond to these doubts?
   - How easy or difficult was it to continue this interaction with this patient?
   - How did you feel during this interaction? How did this patient affect you?
   - How is this this experience different from the discussions you have with other patients regarding their concerns about vaccination?

b) In general, what stops you from discussing vaccines with patients?
   - What could help you feel more confident and supported to have these conversations?
   - Where do your patients say they get their information from concerning vaccines?
   - What tools/resources are available to help you during these conversations with patients?
   - What resources would you like to have available to you?

c) Can you tell me about the last interaction you had with a patient where you felt confident in the communication between you and your patient?
   - What do you think made you feel confident during this interaction?

d) Can you tell me about experiences with patients related to non-Covid vaccinations? (if they have only mentioned Covid vaccination)

2. Training & information-gathering

a) Can you describe to me what courses/trainings you have received related to vaccination? (prompts: mandatory, face-to-face/on-line, external or internal providers)
   - What did you like about it?
   - What did you not like about it?
   - What would be the most important thing to change?
   - To what extent do you feel that communication with patients related to vaccinations was addressed during this training?

- To what extent did you feel prepared to interact with and discuss vaccination with patients after this training?
- What update/repeat training has been available to you / have you taken?
- Does your organization give you adequate time and compensation for this training?

b) [If they did not receive any courses/training:]
   - Do you think you should receive vaccination-related training?
   - What sort of training do you think would be helpful for your role?

c) Where do you usually seek information about vaccines from?
   - Does the source depend on the vaccine?
   - How reliable do you consider these sources of information?
   - To what extent do you feel informed about vaccines?
   - How could you feel better-informed?

II. Understanding the quantitative survey

a) Re-posing and explaining thought processes for survey questions

III. Covid-19 and vaccination

a) How has the pandemic changed how you consult with patients?

   - Including:
     i. how appointments are delivered (e.g. online consultations, telephone)
     ii. the way you discuss vaccinations with patients?
     iii. how you interact with patients?
     iv. how patients interact with you?

IV. General Questions

1. Socio-demographic and professional characteristics

a) Gender, ethnicity, age, number of children
b) Region of the country where you work
c) Specialty (if any)
d) Work functions/duties, length of service
e) Number of times vaccinated against seasonal influenza in the past 3 years (0,1,2,3)
f) Vaccinated against Covid-19 (fully, partially, not at all)

Do you have any additional thoughts/questions/concerns that you would like to add before we conclude?

Thank you for your participation

[Ensure participant is provided with gift voucher]