Focus group study on information-seeking and sharing behaviour on vaccination

Final Report Draft

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# Abstract (in English and French)

To be added after feedback from the ECDC on the draft Final Report.

# Executive summary (in English and French)

To be added after feedback from the ECDC on the draft Final Report.

# Introduction

This objective of this study is to assist the European Centre for Disease Prevention and Control (ECDC) to further develop the European Vaccination Portal (EVIP) and re-usable communication materials. This study has been requested as part of the European Commission EU4Health programme 2021-2027 as part of the actions defined in a contribution agreement as specified in its 2021 Annual Work programme.

To support this objective LE Europe and Ipsos Belgium, working closely with the ECDC project team, implemented a focus group study to better understand information-seeking and sharing behaviour on vaccination by the general public and healthcare practitioners.

## Overview of the work

The study was carried out between October 2023 and April 2024 and included the following key tasks.

1. **Preparatory phase (Task 1)**
* A review of the most recent and relevant research on behavioural science related to vaccination uptake and vaccine hesitancy, as well as information-seeking and sharing behaviour on vaccination, in the EU/EEA and globally. This was then used to inform the development of the focus group guides.
1. **Behavioural experiments and surveys (Task 2)**
* Implementation of the general population and health care practitioner focus groups in 10 Member States (section 2).
1. **Analysis of results (Task 3)**
* Detailed analysis of the focus groups (sections 3) and focus group findings (section 4).
* Preparation of a set of conclusions based on the findings from the focus groups 2 (section 5) and communication recommendations (section 6).

# Focus group implementation

## Development of the focus group discussion guides

Two focus group discussion guides (one for the general population and one for the healthcare practitioners (HCPs) focus groups) were developed in close collaboration with the ECDC. The final focus group guides (English version) were included in the Inception Report and signed off by the ECDC on 15 December 2024. The final guides (English version) are included in Annex 1 and cover the topics that are listed below.

1. Main topics covered by the focus group guides

|  |  |  |
| --- | --- | --- |
|  | General public | **Healthcare Practitioners** |
| Section 1 | Interest, knowledge and information needs | What do patients/customers want to know about vaccines/vaccinations? |
| Section 2 | Information acquisition: sources, channels, type of information and search strategies | How do HCPs share information about vaccines with patients/customers? |
| Section 3 | Information-seeking challenges | What are the main challenges HCPs face when sharing and discussing information about vaccines with patients/customers? |
| Section 4 | Information engagement: discussing, sharing, and acting on information | Information sources for HCPs and awareness of the EVIP among HCPs |

After sign-off, the final guides were translated into the national languages of the countries covered in the study. Please see the Technical Proposal for more detail on the translation process and quality assurance.

## Composition of the groups

Following the focus group plan, recruitment guidelines and quotas that were reported in the project Inception Report, a balanced mix of participants took part in the general public/ HCPs focus group in each of the ten target groups. The composition of each group is detailed in Table 2 and 3.

1. Composition of the general public focus groups

| Country  | FR | DE | HU | IE | IT | LV | PL | PT | RO | SE | Tot. |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 60 |
| **Gender** |  |  |  |  |  |  |  |  |  |  |  |
| Male | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 32 |
| Female | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 28 |
| **Age** |  |  |  |  |  |  |  |  |  |  |  |
| 16-17 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 11 |
| 18-34 | 2 | 1 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 20 |
| 35-55 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 19 |
| 56+ | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 10 |
| **Education**  |  |  |  |  |  |  |  |  |  |  |  |
| High | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 25 |
| Medium | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 3 | 2 | 2 | 19 |
| Low | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 16 |
| **Vaccination attitude** |  |  |  |  |  |  |  |  |  |  |  |
| Pro/neutral/slightly hesitant | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 60 |

1. Composition of the healthcare practitioners focus groups

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Country  | FR | DE | HU | IE | IT | LV | PL | PT | RO | SE | Tot. |
| Total | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 59 |
| **Gender** |  |  |  |  |  |  |  |  |  |  |  |
| Male | 3 | 3 | 2 | 4 | 3 | 1 | 2 | 2 | 3 | 4 | 27 |
| Female | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 4 | 3 | 2 | 32 |
| **Age** |  |  |  |  |  |  |  |  |  |  |  |
| 18-34 | 3 | 2 | 1 | 2 | 1 | 0 | 2 | 2 | 2 | 2 | 17 |
| 35-55 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 27 |
| 56+ | 0 | 1 | 2 | 1 | 3 | 2 | 1 | 1 | 1 | 3 | 15 |
| **Vaccination**  |  |  |  |  |  |  |  |  |  |  |  |
| Involved in vaccination services | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 59 |
| **Type of HCPs (informative, no quota)** |
| General Practitioner | 1 | 3 | 1 | 3 | 1 | 1 | - | 2 | 2 | 3 | 17 |
| Nurse | 3 | 3 | 1 | 1 | 2 | 3 | 6 | 1 | 3 | 1 | 24 |
| Midwife | - | - | 1 | - | - | - | - | 1 | - | - | 2 |
| Pharmacist | 1 | - | 2 | 2 | 3 | 1 | - | 2 | - | - | 11 |
| Paediatrician | 1 | - | 1 | - | - | - | - | - | 1 | 2 | 5 |

Please note that **in Latvia, only five instead of six participants attended the HCPs focus group**. As it became clear at the start of the respective focus group discussion that one of the six health care practitioners was not directly involved in the provision of vaccination services (administrative function only), this person was asked to leave the focus group. At that point, it was too late to contact the two back-up participants that were foreseen for this focus group. Due to an oversight during the recruitment phase, only five instead of six participants were, thus, included in the Latvian HCPs focus group.

## Fieldwork

All focus groups were implemented online between 16 and 25 January 2024, as detailed below, and took about, or slightly over, 60 minutes each.

1. Fieldwork dates per country

| Country | General Public | Healthcare Practitioners |
| --- | --- | --- |
| France | Tuesday 23 January | Thursday 25 January |
| Germany  | Tuesday 16 January | Wednesday 17 January |
| Hungary | Tuesday 16 January | Friday 19 January |
| Ireland | Thursday 18 January | Thursday 25 January |
| Italy  | Tuesday 23 January | Tuesday 23 January |
| Latvia | Tuesday 16 January | Wednesday 17 January |
| Poland  | Wednesday 17 January | Thursday 18 January |
| Portugal | Wednesday 17 January | Thursday 18 January |
| Romania | Thursday 18 January | Thursday 25 January |
| Sweden | Tuesday 16 January | Wednesday 24 January |

The ECDC was offered the opportunity to observe the online focus groups after signing an observation declaration form and after permission was obtained from each of the participants in the observed focus groups. With participants’ permission, all focus groups were audio and video recorded for Ipsos’ analysis purposes only. For more information about the privacy and consent elements that are included in this study, please see the Inception Report and Technical Proposal.

All the focus groups were moderated by experienced qualitative researchers from Ipsos’ local networks. All of the moderators were mother tongue speakers. Prior to the fieldwork, the moderators from the participating countries attended a **moderator briefing**, given by the Ipsos project team. Moderators were provided with detailed information about the background and objectives of the study before being taken through all sections of the discussion guide in detail. Specifically, **priority sections were highlighted** in the focus group guides and discussed with the moderators **to anticipate a potential lack of time to cover the entire discussion guide and to ensure that the key information was captured**.

During the fieldwork period **the fieldwork coordinator checked in with the moderator after completion of each focus group to collect first feedback**, including feedback that could have been of relevance to moderators of focus groups that still needed to take place. Apart from the one participant that was not eligible to take part in the HCPs focus group in Latvia (as discussed above), the main feedback from some countries (Germany, Ireland, Italy, and Hungary) concerned the limited time to address all questions and prompts in the general population discussion guide. That said, all countries indicated to have had sufficient time to cover the priority sections.

# Our approach to the analysis of the focus groups

The purpose of qualitative research, and thus the objective of qualitative data analysis, is not to measure the number of particular views or experiences, but to **reveal the depth and diversity of views and experiences of the topic in question**. It should reveal **patterns, similarities and differences**, while also retaining the unique character and context of individual experiences. We use a **systematic thematic approach**[[1]](#footnote-2)to analyse qualitative data, intended to produce findings that are both clearly grounded in participants’ accounts, and transparent and methodologically robust. **Our analysis of the focus group data involves two main stages**: **(a) a moderator analysis and (b) an aggregate (cross-country) analysis by the core Ipsos research team**.

**Moderator analysis** – On completion of the main fieldwork the moderators listened back to the recording from the focus group they moderated to produce a detailed analytical summary of it using a **framework matrix** (in Excel) **developed by the core Ipsos research team**. The matrix is designed to:

* **Systematically analyse findings based on key questions and topics**, in order to identify the full range of relevant views and experiences in the data. This was done separately for the two target groups: the healthcare practioners and the general public. To understand the weight of the evidence on which key findings are based, as well as indicate country-specific findings and how countries compare and contrast, the final reporting of findings will always refer to the countries in which respective observations were made, as well as whether these observations were prevalent among a majority vs. minority of the focus group participants. To develop a well-rounded understanding of relevant information seeking and sharing behaviours, as well as an inclusive policy/information strategy, it will be important to also get insight into any minority views and experiences that may exist.
* **Systematically analyse differences in views, behaviours, and experiences** that may exist – for example, how particular **demographic/socio-economic** **groups or HCPs that perform different roles** (e.g. nurses vs. doctors), differ in their information-seeking/sharing behaviours. This analysis will be of particular relevance for the general public, but could also reveal differences between **healthcare practioners that have a different professional background and role.**
* **Capture** **relevant verbatim (quotes) from participants** **to illustrate key findings and patterns in the data**. It is important to note that we primarily report verbatim in support of main findings and patterns (similarities/differences), rather than to illustrate an ad hoc finding which bears no further weight in the overall data. That said, it could be the case that a unique experience which is expressed by only one person may shed light on a particular minority experience/ context which needs to be taken into account to get a well-rounded understanding of the issue at hand, and inform an inclusive policy/ communication approach. In such cases, we clearly justify and contextualise the verbatim in our reporting.

Ultimately, use of the matrix ensures that all analytical conclusions are fully supported by the underlying data, and that there is **consistency of approach across the countries**, allowing the core research team (in the next analysis step) to systematically analyse how findings compare and contrast among the ten countries included in this study. The moderators reported their insights and important learnings from the research, using the framework matrix, and transmitted these to the core research team at Ipsos in preparation for the analysis and reporting.

**Core research team analysis** – Upon receiving all analytical input from the countries, the core Ipsos research team **compared and contrasted the reported findings for all countries together, and for the general public and healthcare professionals separately**, to identify and flesh out the key themes (and sub-themes) and patterns (differences/similarities), as well as any between-country differences that exist in these, the findings of which are reported in the following section. To conduct this aggregated analysis, a cross-country framework matrix was developed based off the country-specific framework matrices which were filled out by the local countries. The aggregated, cross-country framework matrix is included in Annex 2, as a separate file (Excel) to this report.

A couple of **limitations for the interpretation of the findings** from this study need to be pointed out. Firstly, due to the qualitative research methodology adopted for this study, findings cannot be extrapolated beyond the specific research participants and beyond the specific setting and dynamics of the respective focus group discussion.

Secondly, the interpretative nature of qualitative research and data analysis is inextricably linked with a level of subjectivity. Instead of quantifying results by counting themes and using an intercoder reliability rate as a standardised measure of reliability, qualitative data analysis commonly adopts quality criteria that centre on thorough data collection and analysis, clearly described research processes, and thick description of findings to demonstrate its reliability (e.g., Bryman, 2016). [[2]](#footnote-3)

The **reliability of findings for this study are ensured by** **(a)** an extensive data collection and analysis process in which data from a total of 20 focus groups (10 with HCPs and 10 with general population) was compared and contrasted to build aggregated and robust findings, **(b)** the use of a uniform framework matrix for analysis (as discussed above), **(c)** the combination of perspectives from different researchers (a total of 10 researchers from the local country teams, and two researchers from the core research team) to counter, to the extent possible, subjectivity in interpretation, **(d)** the thick description of findings, including discussion excerpts to illustrate and ground these findings in the focus group data.

# Focus group findings

Below we present the **findings across countries** **from the focus groups** **with** participants from the **general public** and the focus groups with participants from the **health care practitioners (HCPs)** group. The findings are **structured according to the four main discussion themes** of, respectively, the general population and health care practitioner focus groups:

* **Theme one**: interest, knowledge and information needs (general population)/ What patients want to know (HCPs)
* **Theme two**: information acquisition strategies (general population) / How HCPs share information (HCPs)
* **Theme three**: information-seeking challenges (general population)/ Challenges HCPs face when sharing and discussing information (HCPs)
* **Theme four**: Information engagement (general population)/ Information sources and awareness of the EVIP (HCPs)

Where relevant, **country-specific and socio-demographic highlights** are discussed. Additionally, a dedicated section compares and contrasts the findings from the general population and HCPs focus groups per discussion theme to **understand if and how expectations and needs of patients are met by HCPs**.

## Theme one: Interest, knowledge and information needs/ What patients want to know

The first theme includes the focus group findings about current awareness and knowledge of vaccines/vaccination among the participants in the general population focus groups, and to which extent this topic personally interests them. With regard to the HCPs, this section discusses the type of questions the HCPs in the focus groups receive from their patients.

### Results general population

#### Top of mind thoughts

The most **common top of mind thoughts** of focus group participants on the topic of vaccines/ vaccination referred to:

- COVID-19

- The idea of protection and individual or collective immunity

- The need for vaccinations when travelling

- Fear for side effects

The first top of mind thought of most focus group participantswhen introducing the topic of vaccination was **COVID-19**. This finding was consistent across all countries and can be explained by the fact that national vaccination guidelines to combat COVID-19 were very much part of the public debate during the last few years. Another element that was often mentioned (i.e., in seven of the ten countries) is the idea of **protection and (individual/collective) immunity**. The lens through which focus group participants in the general population focus groups saw vaccines/vaccinations can be generally divided into two perspectives: (1) An individual perspective, in which focus group participants perceive vaccines/vaccinations as a means to protect themselves against diseases and, thus, help them to obtain **individual immunity**, and (2) A collective perspective, in which focus group participants pointed out that by getting yourself vaccinated, you contribute to a **collective immunity** that keeps the population as a whole safe. This collective perspective particularly occurred in Poland and Romania.

*"If at least some of us would choose to get vaccinated, we would protect those around us, not just ourselves. Because we wouldn't spread the disease. After all, I think this is the purpose of vaccines, to help as many people as possible not to get a disease. Or if they get the disease, to experience a light version of it." (Woman, 35-54, high education, Romania)*

Other elements that came to mind but were less prevalent, were the need for vaccinations when **travelling** (mentioned in two of the ten countries) and **fear for side effects** or the impact a vaccine has on one’s body (mentioned in three of the ten countries).

#### Personal interest

When asking focus group participants whether thinking about vaccines and vaccinations is a topic that personally interests them, **answers were mixed**.

On the one hand, approximately half of the participants indicated that they generally **do not have a strong personal interest** in the topic. Only when a situation occurs in which the topic of vaccination becomes personally relevant, they would look into it. Situations mentioned, were travelling, a child that needs to be vaccinated, vaccination requirements for work (e.g., craftsmen) and a fragile health due to an underlying disease or aging.

*"I am interested when vaccines relate to work or holidays. As a craftsman, you have to get vaccinated against a lot of things. But when I do not have personal touchpoints, for example when I am not going on holiday, I do not care for information about vaccinations." (Man, 18-34, low education, Germany)*

On the other hand, the other half of the focus group participants indicated **a strong interest** in the topic of vaccines and vaccinations. The main reason for this interest was again the idea that vaccination is a way to take care of your own health as well as protect the society as a whole, and particularly those members of society that have a weaker immune system. Other reasons that were brought up for why this topic personally interested focus group participants included: a personal interest in biology that was sparked in high school (*Man, 35-54, medium education, France*), a personal interest in movies that present a historical perspective about epidemics (e.g., the plague) (*Hungary*), a personal interest because of medical background (*Woman, 18-34, high education, Ireland*), and interest in the production process of vaccines that was triggered during the COVID-19 pandemic when vaccines needed to be developed in a short period of time (*Woman, 16-17, medium education, Ireland*).

#### Level of awareness/ knowledge

Different levels of awareness/ knowledge were observed among the general population focus group participants:

**- High awareness** of the purpose of vaccines/vaccinations and how they work

**- Low awareness** of the ingredients of a vaccine

**-** **Need for more information** about side effects, price, manufacturers and their differences and vaccination intervals

As far as the focus group participants’ awareness/ knowledge goes, the **purpose of vaccines/vaccinations** for personal/public health, as well as the **basics of how vaccines/vaccinations work** (e.g., the administration of a small dose of the virus to create antibodies) were generally understood by the majority of the focus group participants.

Yet, they did feel less well informed about **the content of a vaccine**. This feeling was caused or worsened by the COVID-19 pandemic. Note that the knowledge and information needs of focus group participants changed because of the COVID-19 pandemic. **Before the COVID-19 pandemic**, knowledge was mostly limited to an understanding that vaccinations are important to protect one’s health. **During and after the COVID-19 pandemic**, focus group participants became more hesitant to vaccination because of (1) the abundance of publicly available information on COVID-19 vaccines with often conflicting stances about the risks and benefits of these vaccines and (2) COVID-19 vaccines were newly developed in a relatively short amount of time, which raised questions among some focus group participants about health safety. Also the different types of vaccines produced by different manufacturers created confusion about the ingredients of these different vaccines.

*"Before the pandemic, we used to undergo vaccination without really questioning it. Now I personally feel like I would want to know a bit more about what is in the vaccine. The food industry communicates about the ingredients of food products. Similarly, for vaccines, we could also use more readable information their components." (Man, 55+, high education, France)*

Hence, many focus group participants shared that they **would like to learn more about** the ingredients of a vaccine. Other elements that they mentioned they would like to have more information on: (a) **side effects** of vaccines, (b) the **price** of vaccines (incl. reimbursement), (c) differences between vaccines that are **manufactured by different producers** (mentioned in relation to COVID-19 vaccines) and (d) **recommended vaccination intervals** for a specific vaccine. Focus group participants expressed to often be unsure about how long they are protected against a disease after vaccination or when to get a booster. Interestingly, though, was the observation that **knowledge of vaccines/vaccinations was often not considered a prerequisite for understanding the importance of getting vaccinated**. Focus group participants said to trust the health system and their medics.

*"I have never looked anything up - and I am ok with that. I have always been happy to follow my medic’s advice." (Woman ,66, Italy)*

*"Well, I do feel adequately informed, because I do have some basic knowledge. If I am interested in a particular vaccine, I will find the basic information that I need. And essentially, I think that is sufficient for me." (Man, 55+, low education, Poland)*

#### Information channels

Sources used to obtain information about vaccines/vaccinations:

**Often mentioned** **Sometimes mentioned**  **Rarely mentioned**

- GP - Word of mouth - Radio

- News outlets - Friends, family, neighbours - Biology class

- Internet/online sources - Vaccination booklets

 - Educational campaigns

Focus group participants reported to obtain their information mostly from **GPs, news outlets and internet/online sources**. The latter could be further categorized into just looking up/googling information in general, consulting specific websites of state institutions (Gerhard-Nocht-Institute was specifically mentioned in Germany and szczepienia.pzh.gov.pl in Poland) or browsing through social media platforms (TikTok and Facebook were specifically mentioned in Latvia). They also said to receive information through **word of mouth or via friends, family and neighbors**. Finally, information channels that were mentioned less often or only in one specific country were **radio** (Latvia), **biology class** (France), **vaccination booklets** for travel vaccines distributed by clinics (Poland) and **educational campaigns** at school (Romania).

### Socio-demographic highlights (general population)

Differences were noted between age groups regarding (a) **personal interest** in vaccines/vaccinations and (b) the **need to learn more** about vaccines/vaccination.

* The topic of vaccines and vaccinations was of **greater personal interest** among **(grand)parents with young children** and among **elderly compared to other focus group participants**, since they are at a stage in life where this topic naturally becomes more prevalent. Also, focus group **participants with underlying chronic diseases** showed more interest in vaccines/vaccination. **The youngest participants** (16-17) showed the least interest in the topic because they indicated that their parents make decisions for them when it comes to vaccination.

*"I am at the age where I still listen to my parents. They inform themselves about vaccines and pass that knowledge on to me..." (Woman, 16-17, low education, Hungary)*

* Another key finding linked to age differences, was that the **older generations did not feel the need to look up information** since vaccinations have a clear purpose and are recommended by your GP. This opinion was voiced particularly in the Italian focus group.

### Country highlights (general population)

Apart from the small country variations that were mentioned above, we also noted some more substantial differences between countries regarding (a) **top of mind thoughts** on vaccines/vaccinations, (b) **personal interest** in vaccines/vaccinations, (c) **knowledge** on vaccines/vaccinations and (d) **the need to learn more** about vaccines/vaccinations.

* In the **Polish** focus group, participants **spontaneously** mentioned the **difficulty to access vaccines** when asked about their top of mind thoughts on vaccination, they automatically thought of the long queues they experienced to get vaccinated for COVID-19 as well as the flu.

*"Well I was reminded of that fight over vaccinations. When there were queues. When there were difficulties in signing up for vaccinations." (Woman, 35-54, medium education, Poland)*

* When looking at whether the topic of vaccines and vaccination was of **personal interest** to the focus group participants, the discussions in **Hungary, Poland and Romania** stood out because almost all participants expressed a **strong personal interest** in the topic, while in other countries this was more mixed. Poland and Romania were the two countries in which that collective perspective to vaccines/vaccinations was particularly present. Maybe because they recognise the value of vaccines/vaccinations for collective immunity, they can more easily look beyond vaccines/vaccinations as just something that is only necessary when it becomes personally relevant (i.e., because of children, travel etc.) but as something that is very important for the general health of the public, explaining their strong interest.
* In the discussions about whether they **feel well informed** about vaccines and vaccinations, the answers in the **Italian and Swedish** focus groups stood out. More specifically, for ***Italy***, the majority of the focus group participants indicated to **feel poorly informed** about vaccines and vaccinations. They explained that the amount of information is often overwhelming and they find it difficult to know whether the information that they find is scientifically correct.

*"It is also hard to decode at times. If you find something, it is usually in "medical" language and you need a degree in medicine to understand it." (Man, 45, Italy)*

For ***Sweden*** on the other hand, the majority of the focus group participants indicated to feel **very well informed**. They reported that information about vaccines and vaccination is easily accessible. These results in the Italian and Swedish focus groups are notable because their self-assessed level of knowledge was very much straightforward (either poorly informed or greatly informed). In all other countries, there was more nuance or variety in the answers. Focus group participants generally indicated to feel rather averagely informed or to feel well informed about some topics while feeling less well informed about other topics. Also note that participants’ feeling about how well they are informed is linked to accessibility of information as well as their perceived skills in assessing the trustworthiness of information, something that is discussed later on (see Theme 3 on information seeking challenges).

* The ***Polish* focus group** stood out because participants in this focus group were the only ones to mention that **they would like to receive more practical information** when it comes to vaccination. More specifically, information on the availability of vaccines, when and where one can sign up for vaccination, the price of the vaccine and vaccination schedule/when another dose is needed. This also links back to the fact that difficulties to sign up for COVID-19 and flu vaccines were the first thing that came to mind for Polish focus group participants when asking them about their top of mind thoughts on vaccination (see above, first paragraph in this section).

*"I would like to know more about the availability of vaccines. I was looking for my grandfather where I could find flu vaccines in the area. I looked for it on the Internet Patient Account website, but I couldn't find the information. So I made some calls, to different centers. I found out that there were simply no vaccines available." (Woman, 18-34, high education, Poland)*

Finally, in **Latvia** there was a specific need among a majority of the focus group participants for more information about vaccinations against **tick-borne diseases.**

### Results HCPs

#### Background and involvement of HCPs in administering vaccinations

The HCP focus groups consisted out of a variety of health care professions, including GPs, pediatricians, nurses and pharmacists. **All of them were in some way involved in administering vaccinations**. Some of the nurses mentioned that during the COVID-19 pandemic, they mostly focused on administering COVID-19 vaccines. The HCPs also recognised that the frequency of administering vaccinations depends on the season. Most HCPs administer more vaccines in late Autumn and during Winter time since this is a peak period for vaccinations. **Their patients vary in age**, with most HCPs having patients of all ages. Naturally, the pediatricians, but also some of the GPs and nurses, said to mainly treat children. They did still interact with adults too though vaccination was usually discussed with the parents of the children. Some of the GPs and nurses also pointed out they mostly see elderly patients. Note that HCPs reported that vaccines are more often administered to patients over 60 years old.

#### Vaccines/vaccinations that trigger questions

HCPs receive mostquestions about **COVID-19 vaccine and influenza vaccine**, followed by the pneumococcal and HPV vaccine.

Across the focus groups, HCPs received **most questions about** vaccinations against **COVID-19** and **influenza** (mentioned both in nine out of ten focus groups), followed by a number of other vaccines, as listed below.

* Pneumococcal vaccine (mentioned in Germany, Hungary, Portugal, Sweden)
* Human papillomavirus (HPV) vaccine (mentioned in France, Poland, Portugal, Romania; mainly questions from students)
* Zoster vaccine (mentioned in Germany, Sweden, Ireland)
* Childhood vaccines in general (mentioned in Hungary and Ireland)
* Tick-borne encephalitis (TBE) vaccine (Germany, Latvia, Sweden)
* Respiratory syncytial virus (RSV) vaccine (Ireland)
* Vaccines related to travelling (Ireland)
* Tetanus (Poland)
* Hepatitis B (France)
* MMR vaccine (France)
* Diphtheria vaccine (Latvia)
* Oral vaccines sold at community pharmacies (Portugal)
* Meningococcal vaccine (Hungary)
* Chickenpox vaccine (Ireland)

Note that older patients, tend to ask more questions about vaccines/vaccinations than younger patients. Also, hospital patients tend to ask less questions compared to other types of patients (e.g., customer in pharmacy or patients who comes for a consultation at GP).

#### Type of questions

Generally, HCPs receive **three types of questions:**

1. Questions about necessity

2. Questions about safety

3. Questions about practicalities

HCPs recalled **specific questions** for vaccinations against COVID-19, influenza, HPV, chickenpox, diphtheria, herpes zoster, RSV and MMR.

Across countries, the questions HCPs in the focus groups generally receive from their patients/customers about vaccines/vaccinations can be classified into **three overarching themes**:

* **Questions about necessity**: Across countries, the bulk of questions which HCPs in the focus groups received from their patients are about the **necessity of a certain vaccine** (mentioned in seven out of ten countries). For example, if vaccination is still needed after having caught a disease or why vaccination is needed against diseases that are no longer prevalent in society (e.g., diphtheria).
* **Questions about safety**: Another category of questions that frequently occurred was about the safety of vaccines. This type of questions can be further divided into questions about (a) side effects, (b) childhood vaccines, (c) vaccine substance and (d) COVID-19 vaccines.
1. Questions about **side effects** were often mentioned. Patients ask whether the benefits of getting vaccinated outweigh the side effects or costs, whether one can get sick from getting vaccinated and how side effects might interact with other underlying health conditions. Note that the latter does not refer to contra indications, and thus patients who cannot have a vaccine, but is more generally about how the side effects of a vaccine might worsen other conditions (e.g., eczema gets worse after vaccination).
2. Questions about safety are also often asked by **parents, in the context of childhood vaccines**. Parents often wonder whether a vaccine is childproof, meaning whether the child’s body can ‘withstand’ a vaccine. Pregnant women also tend to ask questions about whether the vaccine is safe for the health of their unborn child. In the French and Polish focus groups the HCPs also said to get questions about childhood vaccines that are spurred by myths or misinformation (i.e., relation between MMR vaccine and autism in children). Misinformation among patients was brought up as one of the predominant challenges HCPs face when discussing vaccines/vaccinations, which is further discussed in Theme 3.

*“I have had questions about the MR vaccine and its link to autism.” (Man, 35-54, paediatrician, France)*

1. HCPs also received questions about the **vaccine substance**. Whether it is an inactivated vs. attenuated vaccines (so-called dead/alive) vaccine or a natural vs. synthetic vaccine.
2. Finally, in the context of **COVID-19 vaccines**, HCPs also indicated to receive questions regarding the reputation and trustworthiness of different manufacturers as well as whether the long-term effects for such newly developed vaccines are properly understood.

*"In connection to the COVID-19 vaccine, I always think about how everyone fought in the beginning to get the vaccine. They have forgotten this by now. They wish they were not vaccinated against COVID-19. They think it made one's hair fall out, or even made them flat-footed." (Man, 55+, GP, Hungary)*

*"Sometimes, the ones that "INFORMED" themselves online, ask things that are not scientific at all. Such as "what is the metal leftover in the vaccine?”. These are all examples of fake news that has been going around since COVID-19" (Woman, 55, GP, Italy)*

* **Questions about practicalities***:* Questions about practicalities could be further divided into questions about (a) the vaccination scheme, (b) price and (c) logistics.
1. HCPs mentioned that they often receive questions about the **guidelines of the vaccination scheme**, specifically from parents in the context of childhood vaccinations. It is noteworthy that, within this context, GPs regularly serve as a guide for their patients/customers in navigating the vaccination process. They want to know when they have to get which vaccine, when to get an additional dose or a booster and how long a vaccination protects oneself against the disease.
2. HCPs noted to also receive questions regarding the **price** of a vaccine (especially those that are not included in the national vaccination program and are therefore not reimbursed).
3. Questions about **logistics** also often surfaced (availability of the vaccine, where to get it).

Although most HCPs reported the questions they get about vaccines in general, some HCPs also shared **questions they receive from patients about a specific vaccine**. These questions per vaccine are mentioned below.

* **COVID-19**
	+ Questions about the different manufacturers (e.g., who is the manufacturer? how does the vaccine work?)
	+ Questions about the necessity (e.g., do I need to get a booster shot?)
	+ Questions about side effects (e.g., are joint diseases and abdominal complaints caused by the vaccine?)
* **HPV vaccine** (specific questions about this vaccine were mentioned in Poland, Portugal and Romania)
	+ Questions about the effectiveness (e.g., will it certainly prevent cancer?)
	+ Questions about the target group (e.g., can men get the vaccine as well? until which age can you receive the vaccine?)
	+ Questions about the costs and reimbursement (e.g., is it better to get vaccinated with a more expensive vaccine or is a cheaper one also good? is it necessary to get vaccinated – especially when they are above the age that it still reimbursed)
	+ Questions about the vaccination scheme (e.g., when to get the next dose?)
	+ Questions about safety/side effects (e.g., did the vaccine get thoroughly tested?)
* **Influenza vaccine** (specific questions about this vaccine in Ireland, Italy, Poland, Portugal and Romania)
	+ Questions about necessity (e.g., do I need it? will it actually work?)
	+ Questions about availability (especially around fall)
	+ Questions about how the vaccine works
	+ Questions about side effects (e.g., whether they will fall sick after vaccination?)
* **Chickenpox vaccine** (specific questions about this vaccine in Poland)
	+ Questions about the link between chickenpox vaccine and autism (e.g., are you sure the chickenpox vaccine does not cause autism?)
* **Diphtheria vaccine** (specific questions about this vaccine in Poland)
	+ Questions about the necessity (e.g., why vaccinating if the disease does no longer exist?)
* **Zoster vaccine** (specific questions about this vaccine in Germany and Ireland)
	+ Questions about the necessity (e.g., do I need to get vaccinated if I had shingles already?)
	+ Questions about the benefits
* **RSV vaccine** (specific questions about this vaccine in Ireland)
	+ Questions about availability (e.g., when is the vaccine coming out?)
* **MMR vaccine** (specific questions about this vaccine in France and Ireland)
	+ Questions about the link between MMR vaccine and autism
	+ Questions about how the vaccine works
	+ Questions about side effects

#### Context of questions

**HCPs mentioned the following reasons/contexts for why patients are asking questions:**

- Misinformation

- Fear for side effects

- Parental concerns

- Newness of the vaccine (COVID-19 related)

- Weariness of vaccines/ vaccinations (COVID-19 related)

- Seasonal/time-specific

One of the most important reasons for why HCPs receive questions about vaccines/vaccinations is **misinformation** (see also Theme 3 on information sharing challenges, in which we further elaborate on this). HCPs in particularly the German, Hungarian, Italian, Latvian and Polish focus groups explained that the general knowledge of their patients is low because there is little (good/scientific) information available or patients show a lack of interest to inform themselves.

*"During COVID-19, everyone would ask you to verify or deny some wild claims about the vaccines, like whether there are chips in the vaccines. Then more recently, with the shingles, we had people saying they had heard the adverts on the radio and were looking for information on the Zostavax and its’ benefits as well as the price." (Man, 18-34, pharmacist, Ireland)*

Another element that was often brought up, was patients’ **fear for the side effects** of the vaccine or the disease itself. The latter was especially mentioned in relation to the Zoster vaccine

*"Shingles is something that my patients are afraid to catch. I often hear stories about friends or partners who got shingles and were in a lot of pain. And then they want to know whether they should get vaccinated. They are afraid of the pain, more than of the disease itself." (Man, 55+, GP, Germany)*

*"Particularly with the shingles vaccine, they are looking for guidance. The HSE website provides good information on the disease itself. But regarding the vaccine, there is no information. So I tell them to have a look at the NHS website, because the information there is better. We have to give them some good resources and then they are very receptive." (Man, 35-54, GP, Ireland)*

Also, HCPs explained that **parental concerns** are an important driver of questions when it comes to vaccinating children. Questions are usually driven by parents being concerned or anxious about the child’s health. This is sometimes intensified by conversations with other parents that further confuse or misinform them. The MMR vaccine was mentioned as one of the vaccines that generated a lot of questions from parents.

*"MMR is the one that still causes problems with parents: They are afraid of the side effects. You have to try to persuade them, but of the past 800 children we have had, only 5 refused the MMR." (Woman, 55+, nurse, Ireland)*

With regard to the COVID-19 vaccine, questions were also triggered by the **newness of the vaccine**, as well as **weariness** due to the pandemic.

Finally, HCPs also said that the type of questions they receive are **time-specific.** For example, prior to getting the vaccine, they receive mostly questions about necessity. While during administration of the vaccine, patients ask more questions about side effects. Sometimes patients also tend to ask more questions right before getting discharged at the hospital.

### Socio-demographic highlights (HCPs)

Differences were noted between medical professions regarding (a) **administration** of vaccines/vaccinations and (b) **amount of questions** received.

* **Pharmacists** indicated to be **more involved in seasonal vaccinations** since they mostly administer influenza and COVID-19 vaccines. Some of the nurses also said they mainly administered COVID-19.
* HCPs working in the emergency or geriatric unit indicated to **receive less questions** about vaccinations.

### Country highlights (HCPs)

Apart from the small country variations that were mentioned above, we also noted some more substantial differences between countries regarding (a) **the vaccines that trigger questions**, (b) **type of questions** and (c) **context of questions**.

* HCPs in **Portugal** indicated that they get the **most questions about vaccines that are not included in the national vaccination plan**, such as oral vaccines sold at community pharmacies and HPV. Especially HPV generates a lot of questions because this vaccine is not reimbursed in Portugal.
* Similar questions regarding price were observed in the focus group in **Poland**. Polish HCPs said that they get questions about **whether cheaper vaccines are as effective as more expensive alternatives**. These HCPs also brought up that it is difficult to find one’s way in the Polish vaccination system (e.g., certain vaccines are promised and next there are nowhere to be found/no actual places where you can get vaccinated). Such a system explains why they receive a lot of questions from patients.

In **Hungary**, HCPs mentioned they receive questions on the possibility to postpone vaccination from patients who are financially less well off. But apart from that, patients mostly ask about recommendations on vaccines. HCPs explained that there is high level of trust in Hungary because most patients have a good relationship with their GP.

*"Patients mostly come purposefully. They discuss the necessary vaccinations with their doctor in advance. People here typically have a very good relationship with their doctor." (Woman, 35-54, pharmacist, Hungary)*

* In **Ireland**, HCPs indicated that questions are usually not generated by patients being poorly informed, but more often because they have already looked up certain things and they want to verify the found information with their GP.

*"A decade ago, that would be the case. But less so now. People come with information they have on their phones, so we would be directing them towards HSE. There is less of us being the information source. It more often happens that people have looked up information and they already have made their mind up before they come to us. They are rather looking to us to guide them." (Man, 35-54, GP, Ireland)*

### Results general population compared with results HCPs

The participants in the General Population focus groups indicated that they mainly miss information about (a) **side effects** of vaccines, (b) the **price** of vaccines (incl. reimbursement), (c) differences between vaccines that are **manufactured by different producers** (mentioned in relation to COVID-19 vaccines) and (d) **recommended vaccination intervals** for a specific vaccine. This is in line with HCPs reporting to get a lot of questions on **safety** related elements (i.e., side effects, different manufacturers) and **practical** issues (i.e., price and vaccination intervals).

That said, we did find one discrepancy between the questions HCPs reported to receive a lot from patients and the questions patients themselves mentioned, namely, participants in the general population focus groups indicated that they feel well informed about the purpose of vaccinations, whereas the HCPs mentioned that they receive a lot of questions about the necessity of vaccinations, the latter indicating that basic knowledge about vaccines/vaccinations is not omnipresent among the general population.

## Theme two: Information acquisition strategies/ How HCPs share information

Theme two outlines the information needs participants in the general population focus groups shared regarding the topic of vaccines and vaccinations, and how they search for this information online. Source preferences – online and offline – and information selection criteria, including online format preferences, are also covered in this section. For the HCPs, this section looks into what information about vaccines/ vaccinations they share with their patients, the approaches they use to convey this information, and the materials they find helpful to support these patient talks.

### Results general population

#### Vaccine/ vaccination information needs

Focus group participants primarily **searched for information online on the following vaccines**:

- COVID-19 vaccines

- Travel vaccines

- HPV vaccines

- Flu vaccines

**Specific information** which participants looked for online regarding these vaccines, mainly included:

- Side effects

- Age-specific recommendations

- Benefits and risks

Thinking about an instance when they actively searched for **online** **information on vaccines/vaccination**, most focus group participants cited searching for information on (a) **COVID-19 vaccines**, (b) **travel vaccines**, (c) **HPV** **vaccines,** (d) and **flu vaccines**. Also mentioned, but only by a couple of participants across the focus groups, were **vaccines for children** (e.g., meningitis and chicken pox), and **tetanus vaccines**. Given its prevalence in recent years, COVID-19 vaccines were by far the most searched after topic.

*"I don't think I had ever researched so much about vaccines. I think it's normal because we were administered a vaccine that was delivered in such little time" (Man, 18-34, high education, Poland)*

**Specific information** which participants searched for online regarding the vaccines mentioned above, included:

* Side effects (short and long-term)
* Age-specific recommendations
* Benefits and risks
* Practical information to get vaccinated (e.g., location)
* Effectiveness period/ repeat intervals/ when to get vaccinated before travel
* Working mechanism and ingredients (e.g. COVID-19 MMR vaccines)

In addition to the above, when focus group participants were asked to **think about a future situation which would prompt them to look up vaccine/ vaccination information** and reflect on what information that would be, participants also mentioned:

* Information on whether a vaccination is mandatory or not
* Information on the vaccine producers
* Information on the vaccine production and validation process (incl. approval status)
* Information on the price/ whether a vaccine is reimbursed
* Information on how different vaccines against the same disease compare and contrast

*"If the trials have been successful and for how long. Side effects, whether long term or short term. Serious side effects, like death or anything so the safety of it. And maybe if the pharmaceutical company is reputable, because that might come into play as well." (Woman, 35-54, high education, Ireland)*

Thinking about **antecedents and triggers of their information searches**, focus group participants’ online search activities were generally driven by **two needs**:

* **Fact-checking information** which they came across in the news, in discussions with friends and relatives, or on social media, allowing them to make up their own mind rather than relying on the information and opinion that are shared in public debates.
* **Obtaining practical information** ***after* a vaccination decision was made**, e.g., which type of COVID-19 vaccine to choose, what side effects to expect, where/when to get vaccinated, what vaccinations are needed when travelling to a specific country, what is the latest information on a specific vaccination etc. One participant in the focus groups clarified that retrieving this information gave a sense of ownership of the vaccination decision-making process.

*"I started researching when I decided to get vaccinated against COVID-19, since I would need it to go to work. I hesitated between the 3 manufacturers at the time." (Woman, 35-54, high education, France)*

It is important to note, though, that most focus group **participants explicitly mentioned that the information they looked up about vaccinations rarely determined their decision to get vaccinated**. This decision was more likely to be influenced by the discussions they have with their personal GP, who is also up to date with their medical history.

#### Vaccination information-seeking strategies and sources

**Trust in the messenger** is the key defining factor driving focus group participants’ vaccination information-seeking strategies:

- **General practitioners** are the **most important and influential source** for information

- When searching for information **online**, key sources for information are **websites from trusted national public health authorities**.

Focus group participants’ **vaccination information-seeking behaviours** are **determined by** the **trust** they have **in the messenger** for providing reliable information on vaccines/vaccination. Throughout the group discussions, focus group participants recurrently made a **distinction between**, on the one hand, **trustworthy information** – which they **tied to trusted messengers in the health domain,** and in the first place focus group participants’ personal GP, followed by national public health authorities – **and**, on the other hand, **the public debate,** which participants commonly linked to personal opinions, misinformation, and conflicting information.

By and large, focus group participants’ **online information-seeking strategies consisted of three main consecutive steps** (please note that there are country-specific and socio-demographic variations and deviations that are discussed below):

1. An **online search engine** – Google was mentioned in almost all cases, Bing in one instance – is, firstly, used to search for information online. Search key words most often included the name of the disease, combined with “vaccine” and the specific information needed, e.g., “side effects”, some also used specific queries (e.g. which vaccinations should I take when travelling to Thailand).
2. A second step consists of **deciding which sources/ websites to select** from the list of obtained search results. **Two factors influence this selection process**:
	* **The ranking**: higher-ranked sources are more likely to be selected due to their prominence and implied importance (because they are ranked at the top of the results list);

*"In Sweden it is just so obvious which sources are trustworthy when it comes to healthcare. Everyone, all over Sweden, knows what 1177 is. And the majority knows that this is where you search for information first. After that, there are a few other sources that always come up in the top Google results and these are governmental authorities or webpages that are run by authorities. […] Top three or four search results are only reliable sources." (Man, 18-34, medium education, Sweden)*

* + **The trustworthiness of the messenger/source**: although evaluation criteria vary slightly among focus group respondents and countries, the common denominator in deciding whether a source was evaluated as trustworthy was that it needs to be tied to a **recognised/ legitimate public authority** (e.g., a government ministry, body or agency) or a **recognised/ legitimate** **scientific health institution or actor** (e.g. a university or well-known research centre, a hospital, a medical doctor).

*"I believed it was more reliable, as the articles were written by people who actually worked with the vaccines." (woman, 18-34, medium education, France)*

*"Sanepid seems to be a reliable source of information because the head of it announces the vaccination calendar every year, and they are well-known for that." (Man, 18-34, high education, Poland)*

1. Finally, many focus group participants mentioned that they would **evaluate and consolidate the obtained information by discussing it with their personal GP** and, in some cases, trusted family members and friends. Please note that for the youngest participants in the focus groups (<18 years old) parents are the principal source of information.

*"I found the basic info, for sure, but the last word is my doctor's." (Man, 44, Italy)*

*"Mostly with a pharmacist friend of mine, exchanging ideas and trying to understand the benefits." (Man, 18-34, high education, Portugal)*

Apart from focus group participants’ personal GP, their trusted family members and friends, and websites of national public health authorities, the **following type of sources were also mentioned** for obtaining information about vaccines/vaccination, **although only by one or two participants** (please note that a country-specific list of sources is provided in the section with country highlights):

* Health insurance websites
* Pharmaceutical websites
* Pharmacists
* News sites
* Public debates among politicians and experts
* Online public fora (e.g., Doctissimo, Reddit)
* Social media accounts of trusted sources (e.g., Facebook/ Instagram/ YouTube account of GP or COVID-19 expert)
* Medical/ academic journals
* People that have already been vaccinated (ask about their experience)
* Leaflets in clinics
* WHO website
* UNICEF website

It is important to note that, despite being occasionally mentioned as sources for information in specific focus group countries (i.e., Poland, Hungary, Romania, Latvia and France, see for more information below), **online fora, social media, and Chat GPT**, were perceived by many participants as **unreliable sources** and therefore to be avoided entirely.

*"When it comes to AI, and to use that for this type of facts, is not trustworthy enough yet. If you look at studies that have been done on Chat GPT for instance, then you know today that 25-30% of what is written is not even close to reality. It is not very source critical and information can come from any page." (Man, 18-34, medium education, Sweden)*

#### Selection criteria and preferred formats for online information

When **asked about** **source/ information selection criteria** that would guide participants’ future **online vaccination-information seeking**, the following criteria surfaced in the discussions:

* Source familiarity (proxy for trustworthiness)
* Currentness of information
* Consistency of information with other sources (reliability check)
* Information confirmed/ recommended by a professional or public authority
* Source awareness among relatives and friends
* Relevance of information for the national context (e.g., concise overview of current national recommendations and guidelines)
* Trusted source (see above)

*Well, I would definitely listen to a professional person who really dug into this topic. For example a doctor who obviously knows what he is doing and doesn't recommend it to patients based on silly arguments. Then, for example, if there is an acquaintance in our immediate vicinity who has an opinion based on experience, I would also like to hear it." (Woman, 18-34, medium education, Hungary)*

Adding to these source selection criteria, when participants were asked about **preferred online information formats**,most focus group participants agreed that **text-based information** would work best to convey information about vaccines/vaccination. The youngest focus group participants (<18 years old), in particular, indicated a preference for audio-visual formats such as **videos**. Short informative videos were also mentioned by a couple of participants in the Hungarian and Portuguese focus groups. **Infographics that illustrate text and visualise key statistics** were welcomed by a majority, indicating that visualisations may help to attract and keep attention.

Thinking about **content characteristics and tone of voice,** **concise, factual, and easy-to-understand information** was preferred by all. Most focus group participants emphasised a preference for information that is **based on scientific facts** (instead of personal experiences that are often found on social media) while **steering clear from any medical and/or scientific terminology**. That said, some participants would appreciate if **information refers to the scientific sources it is based on**, enhancing its reliability and trustworthiness.

*You go for sources where you heard that it is a trustworthy source. Where scientists are working. Robert-Koch-Institute and not a tabloid like Bild Zeitung." (Woman, 16-17, low education, Germany)*

In contrast to the preference for factual information, which was widely observed among the focus group participants, in the **Latvian and Swedish focus groups** a couple of participants also indicated to have interest in **personal testimonials and experiences** from people that have been vaccinated. These participants however pointed out that they are only interested in other people’s personal vaccination experiences which is different from their personal opinions on vaccines/ vaccinations.

The discussion about **online channels** for receiving information about vaccines/vaccinations was inextricably linked to the challenges which focus group respondents experienced in finding the information they needed – as reported in the next section. For online information sources, it was **of key importance that websites**:

* **Stand out** amongst the various online information sources by (a) **clearly stating the name and logo of the messenger** so that the source is immediately recognisable and identifiable as a trusted source of information, and (b) is **ranked at the top of the online search results**.
* Provide a consolidated overview of vaccine/vaccination information that is **relevant for a specific country and its national vaccination guidelines.**

**EU websites** were not spontaneously mentioned as sources for information on vaccines/vaccinations, and only one of the focus group participants had heard about the **European Vaccination Information Portal**.

*"I have heard of it and may have also seen it already but I cannot recall how it looks." (Woman, 18-34, high education, Hungary)*

**Offline information materials (leaflets, posters)** were also not spontaneously mentioned as preferred channels/materials to get information on vaccines/vaccinations, but were appreciated as a means to attract focus group participants’ attention and nudge them towards online information channels, e.g. posters in public spaces (e.g., public transportation), leaflets in hospitals, child care centres, doctors’ offices.

### Socio-demographic highlights (general population)

The youngest participants **(< 18 years old)** in the focus groups stood out from the other participants as the younger ones almost exclusively **relied on their parents and school teachers for information** about vaccines/ vaccination. One young person also mentioned to double check the reliability of online information sources with parents.

*"I would look on an important site like the ministry's. But I would ask my parents if it was a correct site and if my search was a good one." (Woman, 16, Italy)*

### Country highlights (general population)

**Social media accounts** (Facebook, Instagram, YouTube) **of prominent medical doctors/health influencers** were mentioned as channels for vaccines/ vaccination information in the focus groups in **Hungary, Romania, and Poland**.

*"I check social media as well, but the accounts of certified people. Dr. Craiu, doctors that know what they are talking about when it comes to vaccines for children. Usually, someone who is certified tries to put out information through various mediums, including their official website, their Instagram page, or their TikTok." (Man, 35-54, high education, Romania)*

Also in the focus groups in **France and Ireland**, did a couple of focus group participants refer to **social media** (Reddit in Ireland) and **online public fora** (Doctissimo in France) for information about vaccines/ vaccinations.

**Chat GPT** was **only mentioned once** as a source for information on vaccines/ vaccinations in the focus group in **Latvia**.

*"Google, ChatGPT, I would also look at some other artificial intelligence tools, their paid versions, because I trust them more." (Man, 35-54, high education, Latvia).*

In contrast with the other focus groups, in the **Romanian, Portuguese and Latvian focus groups** a couple of participants specifically referred to **international health organisations and news sites** as sources of information about vaccines/ vaccination: WHO, UNICEF, the BBC, the Times and The Wall Street Journal.

Finally, in the **Hungarian focus group**, one participant pointed out that **public health information may be received with scepticism** among Hungarian citizens, as this information could mask a political agenda.

Below, **named country-specific sources of vaccine/ vaccination information** which were **spontaneously mentioned** by focus group participants are listed:

* Germany:
	+ Bernhard-Nocht-Institute for Tropical Medicine (for travel vaccines/vaccinations)
* France:
	+ Social Security (Ameli)
	+ Organisation Mondiale de la Santé
	+ Doctissimo
* Hungary:
	+ EESZT (electronic health portal)
	+ hazipatika.hu
	+ webbeteg.hu
* Ireland:
	+ Health Service Executive
	+ Department of Health
* Italy:
	+ National Health Service
	+ Ministry of Health
* Latvia:
	+ Ministry of Health
* Poland:
	+ Medycna Praktyczna
	+ szczepienia.info
	+ Doktorek Radzi on Instagram
	+ Account of Pan Tabletka on Instagram
	+ National Health Fund
	+ Wirtualna Polska
	+ Onet
	+ Sanepid
	+ Internetowe Konto Pacjenta
	+ IKP Internation Patient Account
* Portugal:
	+ DGS (Direção-Geral da Saúde)
* Romania:
	+ Romanian Ministry of Health
* Sweden:
	+ 1177
	+ Folkhälsomyndighetet
	+ FASS.se
	+ resevaccin.se (for travel vaccines/vaccinations)

### Results HCPs

#### How HCPs convey information about vaccines/ vaccinations

**Talking face-to-face with patients** is the main and often sole means HCPs in the focus groups use to convey information about vaccines/ vaccinations with their patients.

In their **approach** of these patient talks HCPs focus on:

- **Explaining** side effects, effectiveness of vaccines/ vaccinations, and consequences of not being vaccinated

- **Guiding** patients in making sense of the abundance of publicly available information on vaccines/ vaccinations

- **Tailoring** information to patients’ context and level of understanding

- Inviting and **answering** questions from patients

- **Striking a balance between persuading** patients to get vaccinated **and considering their hesitancy**/ doubts

- **Referring to trusted online sources** (mentioned by HCPs in Germany, Poland, Ireland and Portugal)

- **Sharing evidence** of vaccine effectiveness and number of people vaccinated (e.g., statistics)

- **Clarifying contraindications**

All HCPs in the focus groups across countries agreed that the **most effective way to share information with patients is by talking with them**. **Other formats for conveying information**, such as leaflets/ flyers/ brochures, posters, or referring to online information, **were considered a secondary communication means,** to be used as supporting materials or to raise awareness. Specific **reasons** for health care practitioners’ preference **for orally sharing information with their patients** varied slightly across the focus groups/ countries (see section 5.2.6 for more details) but main threads included:

* **The trust relationship** between a HCP and a patient, which is considered facilitative to mitigate doubts and worries patients may have about getting vaccinated. It was indeed mentioned by patients in, for example, the German focus group that they look for approval from their GP, as a form of extra assurance;
* **The guiding role of HCPs** to help patients navigate and make sense of the abundance of information (and misinformation) which is publicly available. HCPs in the Latvian focus group indicated that talking to patients is often more effective in convincing them to get vaccinated rather than presenting them a poster or leaflet. In the Romanian focus group, HCPs said that patients are often not capable of looking up information online because those patients that are hesitant to get vaccinated, are often low educated;
* **The opportunity to** **tailor the information** to the patient’s/ customer’s context and level of understanding. HCPs feel that public information about vaccines/ vaccinations is often too technical, leading patients to misunderstand or partially understand the information, and/or generating more fear and anxiety instead of understanding. Italian HCPs noted that oral information allowed them to better explain the dangers of certain diseases and of not getting vaccinated, since many patients do not always understand these dangers as written information can be read in different ways;
* **The interactive nature** which allows patients to ask questions and share their thoughts, concerns, and views with the HCP. HCPs in the Italian focus group noted that in some regions or institutions, they even provide ‘welcoming spaces’ that allow HCPs to properly inform the patient before vaccination and answer any questions they may have;
* **Better suited for specific target groups**, such as **older people** that are less likely to look up information online.

Asked about **what information HCPs share with their patients** and **how they approach patient talks** about this topic, HCPs in the focus groups would generally focus on:

* **Explaining the side effects and/or effectiveness** of a vaccine/ vaccination, incl. the fact that there is no 100% guarantee that a patient will not get sick after being vaccinated;

*“Most people think that if you get vaccinated, you won't get sick. This is not the case, unfortunately. But I try to get across to the elderly in particular that, well, these vaccinations are important especially in their health situation." (Woman, 35-54, nurse, Poland)*

* **Striking a balance between convincing and considering patients thoughts and feelings** regarding vaccines/ vaccinations;

*Parents who are anxious, I do try not to come down hard - I try to coax them along. If you're aggressive in trying to force it, you may lose them for catching up later on vaccines, because they've lost that trust in the practice." (Man, 35-54, GP, Ireland)*

* **Referring to trusted online sources as an additional source of information,** particularly in Germany (STIKO website), Poland (ChPL, szczepienia.info), Ireland (Health and Safety Executive website, National Health Service website (UK)), Portugal (DGS (Direção-Geral da Saúde) website). In the Irish focus group, HCPs mentioned that they do not refer to corporate websites because of the risk of being perceived as salesmen to their patients.
* **The consequences of not being vaccinated**,e.g., one might get sick quickly, there is little effective treatment available if one gets sick, etc.;

*"Yes, I sometimes show pictures too - this is what a desease like measels can do - and these might be the adverse events of the vaccine." (Woman, 55, GP, Italy)*

* **Sharing evidence of the effectiveness of vaccines/ vaccinations**, e.g. by means of numbers and statistics;
* Showing how many **people are already vaccinated**;
* Taking into account and **clarifying contraindications**: complications a vaccine/ vaccination may have with other diseases or medical conditions a patient has.

Additionally, and as discussed further below, in specific countries – **Ireland, Hungary and Poland** – and among certain groups of health care practitioners – **pharmacists, midwives and paediatricians** – **paper leaflets and brochures** were also sometimes used to inform patients about vaccines/ vaccinations.

Apart from websites and paper leaflets/brochures, **other means of communication** (e.g., posters, video’s, social media) were **in some countries and contexts** used to inform patients about vaccines/ vaccinations. Below we detail **for each discussed information format the most common ways and contexts of use**.

#### Leaflets, brochures, flyers, prints

It is important to note that **patients themselves rarely ask for written information** and that in many countries these materials are **not always available among HCPs** (specialised doctors such as paediatricians and pharmacists tend to have these more available). **HCPs in the Latvian, Polish, French, Irish and Hungarian focus groups** indicated to **use them** from time to time.

*"When it comes to RSV vaccine, the source is the manufacturer of the RSV vaccine. They have information campaigns towards the public, not the hospital." (Man, 55+, Paediatrician, Sweden)*

Asked about the source of printed materials, these HCPs clarified that **materials often come from the pharma industry** (producers of vaccines and stakeholder organisations) and emphasised the importance of not being seen by patients as salesmen that are paid by the pharma industry to administer vaccines, as this would negatively impact the doctor-patient trust relationship. In other cases, materials would come from **national health authorities** (e.g., the Health Service Executive (HSE) in Ireland, and the National Student Health Service in France). In one country – **Latvia** – **the Centre for Disease Prevention and Control** was mentioned as the provider of vaccination leaflets.

*"We have both posters and brochures. Also vaccination manuals. When information was changing all the time with Covid, we printed it out and showed it to patients. We ourselves are very afraid of doing something bad to the patient, so at first we research it ourselves, then we show it to the patient. The author of the information is usually the Centre for Disease Prevention and Control" (Woman, GP, 35-54, Latvia).*

Below we detail the contexts in which **leaflets/ brochures/ flyers/ prints were used** by HCPs in the focus groups to share information about vaccines/ vaccinations, and what specific information these materials contain:

* A **print of the national vaccination program**, including the vaccinations and timings are sometimes shared with patients, and especially **parents** (HSE baby passport in Ireland, postcard size vaccination calendar in France);
* **In pharmacies, hospitals, waiting rooms of GPs**, leaflets/ brochures/ flyers about specific vaccines are sometimes available (e.g., about flu or COVID-19 vaccines), but these are **not always promoted by HCPs**. HCPs in Latvia, Hungary, Poland, Ireland, and France indicated to sometimes refer to these supplementary information materials. Content-wise, these materials primarily include:
	+ The name of the disease against which the vaccine aims to protect
	+ Why vaccination is needed
	+ Vaccination calendars for specific target groups, children in particular
	+ Name of vaccine producer
	+ Potential complications that may occur as a consequence of vaccination
* When information was changing quickly during the COVID-19 pandemic, some GPs would print out information from the website of national public authorities and share it with their patients.
* In Italy, HCPs sometimes **print pictures that show the symptoms of specific diseases**, in particular of diseases **that are no longer common**, to inform patients about the importance of vaccines/ vaccination.
* In France, HCPs use **leaflets from the National Student Health Service to inform young people** **about vaccination against HPV**.

#### Websites

A recurrent finding across HCPs in the focus groups, with the exception of the Polish, Swedish and Irish focus group, is that **HCPs rarely recommend websites** **to their patients for information about vaccines/ vaccinations.** As mentioned, the main reasons for this are that **HCPs question patients’ capabilities to (a) navigate online information** and **(b) understand the often complex and medical terminology** that is used in websites of, for example, national public health authorities.

*"The internet is a double-edged sword. In the hands of a professional, where the right knowledge is in the head, you can find meaningful things. But for someone who wants to gather authentic knowledge from it, it is very difficult to filter out those pages that contain invalid information." (Man, 35-54, pharmacist, Hungary)*

*"I try not to give them sites on which they can find info - it is always up to them to understand it and sometimes they just create confusion. It could be the best site ever but if they don't want to understand it they won’t!" (Man ,45, Paediatrician, Italy)*

That said, and as discussed further below, **HCPs themselves do** **use websites of public health authorities and scientific/health institutions** to stay informed about vaccines/ vaccinations. HCPs in Ireland, France and Germany also indicated to sometimes look up information during a patient consultation (e.g., the STIKO website (Robert Koch Institute) in Germany, or the Bulletin Epidémiologique Hebdomadaire in France for flu coverage statistics).

**HCPs referred patients to websites of public health authorities** for more information about vaccines/ vaccinations. Notably, HCPs in the Swedish focus group pointed out that **websites of international health authorities** **are not recommended** as these are deemed less relevant for informing patients about the national context:

* In **Poland**, HCPs often guided their patients towards verified and trusted sources for information about vaccines/ vaccination: the Szczepimy sie website, health articles on Goniec Medyczny or Medycyna Praktyczna, Zaszczep sie wiedza website, Sanepid website, and ChPL website. The HCPs explained that they prefer to direct patients to specific websites rather than have them search online themselves;
* In **Ireland**, GPs recommended the HSE and NHS websites, fitfortravel.nhs, the Tropical Medical Bureau website, the European Medicines Agency, and the Irish Centre for Disease Prevention and Control;
* In **Sweden** the following websites are recommended: 1177, website of the Swedish Public Health Agency
* In **Portugal**, one HCP mentioned the DGS website to see the vaccination plan.

Additionally, in **Hungary**, HCPs rarely refer patients to websites of public health authorities, but they do refer to their **own professional websites or social media accounts**.

#### Posters

Posters were deemed particularly **effective for raising awareness about the importance of vaccination in Germany**. Also in a number of other countries (France, Latvia, Portugal, Ireland, and Poland), HCPs in the focus groups mentioned having posters available in pharmacies, hospitals, and GPs’ offices. Posters are provided by vaccination manufacturers, professional associations (e.g., the Statuary Association of Physicians in Germany), and national public health authorities (e.g., Santé Publique France).

*"We do. The IPU, they're sending leaflets and posters saying 'flu vaccine here' and 'healthcare workers to get the vaccine' or 'pregnant women to get the vaccine'. So we would put one or two of them up in our front window for people passing by." (Man, 18-34, Pharmacist, Ireland)*

The following examples were shared by HCPs in the focus groups:

* When discussing posters that are effective for raising awareness, HCPs in **Germany** referred to a couple of examples that **combine an emotional touch with a simple tagline**:
	+ Poster about flu vaccination: “Flu? I cannot afford to have it”;
	+ Poster about shingles vaccination targeted at older people: “I need my strength for my grandchildren”;
	+ Another discussed poster among German HCPs was about COVID-19 vaccination, showing doctors that have been vaccinated;
* Also in Germany, posters are used to **inform citizens about new viruses and risk areas**, for example a poster with a geographical map of Germany highlighting risk areas for TBE;
* In France, pharmacies have posters with taglines such as “Ask your pharmacist for advice”.
* In Poland, posters are **displayed in the corridors of hospitals**, so that **patients can read the information while waiting for the appointment**.
* In Ireland, one nurse mentioned that she uses One nurse uses **posters of vaccination schedules** for children, flu and pneumococcal disease in her nurses' room.

#### Video’s

**Only in Ireland and France** are videos used by the HCPs in the focus groups. In **Ireland** were videos or, more precisely, **rolling Power Point presentations** mentioned by GPs for informing their patients about vaccines/ vaccinations. These presentations are shown in corridors (some GPs mentioned that they no longer work with traditional ‘waiting rooms’) and are considered **useful as they allow to include content from public health authorities** (e.g. HSE) **but also content that doctors want to include themselves.**

*"We have big TV screens in the waiting room with a networked rolling PowerPoint presentation. It's the pdf form of what is printed, and is sent out from the Health Promotion Office of the HSE. If there's something we think is important, we'll put that up there as well." (Man, 35-54, GP, Ireland)*

In **France**, **vaccination campaign videos** are shown in common areas in hospitals.

Although HCPs in the Polish focus group indicated that they do not use videos, it sparked interest. These HCPs explained that short videos (e.g. animated slides) that are played in the waiting room would be very helpful, as patients could then read the answers to key questions before getting vaccinated (e.g., why getting vaccinated, how the vaccine works, what post-vaccination reactions can be expected, why it is worth it).

### Socio-demographic highlights (HCPs)

Our findings showed that specific **needs for communication materials** may differ **depending on the context and professional role** of HCPs, as discussed above:

* Pharmacists, pediatricians, and midwives are more likely to use leaflets and brochures with information on vaccines/ vaccinations compared to the other HCPs in the focus groups;
* Pediatricians and midwives often use leaflets and brochures that include child vaccination schedules;
* GPs and specialists working in hospitals and healthcare centers may have specific interest in informative videos or animated slideshows which they can show in common areas where patients are waiting for their doctor’s appointment.

### Country highlights (HCPs)

As country-specific findings for this theme have been discussed above, we refer to section 5.2.4 for these details.

### Results general population compared with results HCPs

Our findings show that **information needs** of the general population focus group participants **align well with** the **information shared by the HCPs** in the focus groups. Specifically, in each country and in both focus groups (general population and HCPs), the **role of the personal GP** as **(a)** a **trusted source** for information on vaccines/ vaccinations and **(b)** a **reliable guide** for making sense of publicly available information and for reassurance on one’s vaccination decision, was a recurring finding.

Nevertheless, we did see a **discrepancy** between, on the one hand, the observation that many **HCPs** in our focus groups were **reluctant to share online vaccine/ vaccination sources with their patients** while, on the other hand, participants in the **general population** focus groups indicated to **turn to online sources if they are looking for information** on vaccines/ vaccinations. This observation re-emphasises the importance, as also indicated by the HCPs in the Polish focus groups, of providing patients with names of trusted online vaccine/ vaccination sources to support patients’ online information search.

## Theme three: Information seeking challenges/ Challenges HCPs face when sharing and discussing information

This section reports the **challenges participants in the general population focus groups face** when seeking for information on vaccines/vaccinations, and the **difficulties HCPs experience** when sharing information about vaccines/vaccinations with their patients.

### Results general population

#### Information seeking challenges

Five main **information seeking challenges** were brought up by the focus group participants:

1. Abundance of information sources

2. Evaluating trustworthiness of the information source

3. Understanding the retrieved information

4. Dealing with conflicting information

5. Spotting misinformation

When asked about the **challenges they experience when seeking information** about vaccines/vaccination, focus group participants shared five challenges:

1. **Abundance of information sources**: Feeling overwhelmed by the abundance of online information sources on vaccines/vaccinations;
2. **Evaluating trustworthiness of the information source**: Knowing which sources to trust and turn to for correct information about vaccines/vaccinations;
3. **Understanding the retrieved information**: Difficulty to understand the found information due to medical or scientific terminology, statistics and lengthiness;
4. **Dealing with conflicting information***:* Understanding how to make sense of conflicting information;
5. **Spotting misinformation**: Distinguishing factually correct from factually incorrect information.

The challenges related to the abundance of information sources and evaluating the trustworthiness of information sources are illustrated by the following quote from a Hungarian focus group participant:

*"If I search for why it is good, it brings up sixteen million results saying why it is very good. If I search for why it is bad, then it brings up sixteen million results for why it is bad. So it is difficult to sort out what to believe and what not to believe. It is terribly difficult to find my way around the Internet." (Man, 35-54, medium education, Hungary)*

Apart from these five main challenges, focus group participants also brought up **challenges that were specifically related to seeking information about the COVID-19 vaccine/vaccination**. Focus group participants in **Portugal** said that it was difficult to keep track of information updates related to COVID-19 vaccines. Advances in COVID-19 vaccines were experienced as quickly changing and difficult to keep track of. In **Latvia and Poland**, focus group participants shared that the multiple COVID-19 vaccines from different manufacturers created challenges in knowing which one to choose. Polish focus group participants further specified that this choice in COVID-19 vaccines caused a feeling that they needed to inform themselves about the different types of vaccines.

*"Well at the time of COVID-19, I suddenly had to understand the difference between mRNA and vector vaccines. It took some effort to know what both types of vaccines are based on. It took some effort to do that." (Man, 55+, low education, Poland)*

#### Tackling information seeking challenges

Different **strategies** were reported to tackle the information seeking challenges mentioned above:

- Talk to GP

- Talk to family or friends

- Rely on websites of public health institutions

- Using several sources

When asked **what focus group participants would do to get around the information seeking challenges they faced**, most participants said that they would **speak with their GP** to verify the found information on vaccines/vaccinations. This finding could indicate that a doctor is perceived by some as an authoritative figure and, therefore, considered to be a key source to turn to for evaluating the correctness of retrieved information. The role of the GP as a trusted source which patients verify information with and ask advice from to make a final decision, was a recurring finding throughout the focus group discussion.

*"I would in addition always talk to a doctor. Online sources give me background information so I have some idea about the specific vaccination." (Man, 18-34, low education, Germany)*

Other strategies mentioned, included **speaking to family or friends**, **relying primarily on websites of public health institutions** when searching for information about vaccines/vaccinations, and **using several sources in parallel** to compare and contrast information and assess the validity of the found information.

#### Preferences for online information sources

In order to better address the above mentioned information seeking challenges, focus group participants were asked what they would need in the future to better find and understand the information they need.

With regard to the **preferred channels** for their future online searches, the following channels were mentioned:

- Websites of public health institutions

- Mass media

- Social media

With regard to the **preferred format** for online information about vaccines/vaccination, they said a combination of textual and visual elements would be ideal.

Thinking about the **online channels** they would find most accessible, they mostly mentioned (1) **websites of public health institutions**. This links back to the finding, discussed above, that focus group participants fall back on websites of public health institutions for finding information on vaccines/vaccinations since such websites are considered to be trustworthy. Other online channels deemed accessible for information searching on vaccines/vaccinations were (2) **traditional mass media** and (3) **social media outlets**, with the latter being mostly raised by the youngest focus group participants (please revert to the ‘Socio-demographic highlights’ section below for more detailed information).

Besides the accessibility and usefulness of online channels, focus group participants were also asked about the **preferred formats** to receive information about vaccines/vaccination. A **combination of textual and visual elements** were seen as most ideal.

**Textual elements** that were reported:

* Simple language, not too much expert terminology;
* Summary at the beginning of the webpage that mentions the key takeaways;
* Structuring information in Q&A format;
* Structuring information with clear subheadings;
* Using the same structure for each vaccine/vaccination that is discussed;
* Gathering all relevant information in one website so there is no need to click through other websites.

*“Clear subheadings so it becomes even easier to find exactly what you want to know. If it is a specific area you want to know more about." (Woman, 18-34, high education, Sweden)*

*A central point of information that provides you 5 key factors for each vaccination. Always presented in the same manner. That way you would not need to search each time all over again." (Female, 35-54 yrs, medium)*

*"Maybe a simplified portal. I have not actually seen the European one but a portal where you have information about all the possible vaccines in the same place. Where people are discussing their experiences, side effects,… So you do not have to click through multiple links." (Man, 18-34, medium education, Ireland)*

**Visual elements** that were reported:

* Support text with data visualizations such as tables and graphs;
* Infographics;
* Images;
* Short videos;
* Slideshows.

*"A video presentation, with graphics maybe, on the evolution of the vaccine, the results and so on. I like this kind of presentations." (Man, 55+, low education, Romania)*

#### Preferences for offline information sources

With regard to the **preferred locations** for offline materials like leaflets/brochures or posters, participants mostly mentioned medical institutions and public transport.

With regard to the **preferred design** of leaflets/brochures or posters, the following elements were mentioned:

- Simple information

- Well-structured

- Attractive lay-out

- Good keywords

- Simple statistical data

- Logo of public health institution

Apart from online information materials, focus group participants were also asked about what they would need with regard to **leaflets/brochures or posters** to better find and understand the information they need about vaccines/vaccinations in the future. When thinking about **where they would search for leaflets/brochures or posters**, most focus group participants said they would expect to find such materials at **medical institutions**, i.e., GP’s office, hospitals and vaccination centers. In France, Romania and Sweden, **public transport**, or stations of public transport, were also mentioned as locations where participants would come across leaflets/brochures and posters about vaccines/vaccination. **Children’s health centers** (i.e., Barnavårdscentralen - BVC) were specifically brought up in the focus group in Sweden. French focus group participants said they think it would be more useful to receive flyers/brochures in their mailbox than find them in public spaces.

Besides the preferred locations to find offline materials, the focus group participants also discussed **the preferred design/ format of leaflets/brochures and posters about vaccines/vaccination**. The following elements were raised:

* **Simple information**: written in a concise and accessible way;
* **Well-structured**: Structuring information into sections;
* **Attractive lay-out**: Colorful, relevant images;
* **Good keywords**: Keywords that attract the attention;
* **Simple statistical data**: Small graphic elements or percentages on, for example, probability of complications after getting vaccinated;
* **Logo of public health institution**: They believed that such a logo would increase the trustworthiness of the information.

Note that while Latvian focus group participants added that personal testimonials would be welcomed, Italian focus group participants would rather avoid the usage of such information because this was deemed too “marketing-oriented”.

*"References, the author of the content and the author's logo should be indicated so that it is recognizable.” (Man, 18-34, medium education, Latvia)*

*“Certain statistics, everything short and concise, references." (Woman, 18-34, high education, Latvia).*

*“Simpler graphic things. It makes it easier to read and the leaflet looks nicer. It should not be super advanced. Like 1177, they make it quite simple. It is text and small graphic elements that make it look nicer." (Man, 18-34, medium education, Sweden)*

*"There has to be a logo from the authorities, a clear sender. Very important." (Woman, 35-54, medium education, Sweden)*

#### Recommendations to public health institutions

Focus group participants made the following **recommendations for public health institutions** to improve information-seeking on vaccines/vaccinations:

- Organise info sessions/webinars

- Improve search results in search engines

- Invest in quick information formats

- Run public campaigns

- Improve presence on social media

Finally, with regard to what public health institutions can do to help citizens find and make sense of the information they are seeking on vaccines/vaccination, focus group participants recommended public authorities to (1) organize (online) **info sessions or webinars** (e.g., a webinar in which a HCP explains details about vaccines/vaccinations), (2) **improving search results in search engines** so that the first results are also the most trustworthy sources, (3) invest in **quick formats** with easy to digest information, (4) run more **public campaigns** on vaccines/vaccination and (5) improve one’s **presence on social media platforms**.

### Socio-demographic highlights (general population)

Differences were noted between age groups regarding (a) **preferences for online channels** and (b) the **relevance of offline materials**.

* The **youngest focus group participants (16-18 years old) mentioned the benefits of vaccine/vaccination campaigns on social media** (e.g., YouTube, Instagram Reels, TikTok). This finding was particularly noted in Italy and Hungary. In their view, such campaigns could raise awareness about the importance of vaccination among younger demographics. They noted a social media video might not be able to convey all the necessary information, but such a video can help to spark curiosity in the topic of vaccines/vaccination and, in turn, guide youngsters to sources of public health institutions where they can find more detailed information. This finding dovetails, though, with **recommendations from older focus group participants (55+) to steer clear from social media channels** as these were perceived by them as **breeding spaces and catalysts of misinformation**, making it difficult to distinguish factually correct information from factually incorrect information.

*For us young people, IG or TikTok might be ok as initial info – we don’t really look for info ourselves it could be interesting or curious to have a first input” (Man, 18, Italy)*

* The **younger focus group participants also reported to not be interested in offline materials like leaflets**. They pointed out that young people will not look at them and on top of that they also cause unsustainable paper production (mentioned by two focus group participants in Sweden). **Middle aged and older focus group participants explained though that offline materials like leaflets are valuable** to reach populations in more remote areas or elderly who do not have access to internet.

*“If you walk down the street and someone hands you a leaflet, some don’t pay attention to it, others throw it away and make a mess. I do not think they are as important anymore, and they use a lot of paper for nothing, as well." (Woman, 16-17, low education, Romania)*

*"In my opinion, leaflets have their role, and not a bad one actually. Not everyone has access to the internet like we do. “The world” does not only mean big cities with a lot of technology. And not everyone is 20, 30, 40, 50 years old. There are our grandparents as well, for whom a leaflet is better. Well structured, simple, with images. Because a grandmother will not struggle to read words she barely understands. But I think those leaflets help, in the countryside or in a small town that is not so well developed." (Woman, 35-54, high education, Romania)*

### Country highlights (general population)

Apart from the country-specific findings that were already mentioned above, we also noted some more prominent country highlights when it comes to (a) participants’ **encountered challenges for finding information on vaccines/vaccination**, (b) the **relevance of offline materials** as a source of information on vaccines/vaccination, and (c) **recommendations participants formulated to public health institutions for facilitating the accessibility of information on vaccines/vaccination**.

* The general population focus groups in **Ireland and Sweden** were the only two groups in which participants reported to not experience any difficulties when seeking information on vaccines/vaccination. Information sources were considered to be easily accessible and the information itself was said to be clear and easy to understand.

*“I think that overall, when it comes to medicine and healthcare in Sweden is easy for anyone to understand regardless of background. I think it is super clear." (Man, 18-34, medium education, Sweden)*

*"It is very easy to find information online." (Man, 35-54, high education, Ireland)*

The focus groups in **Poland and Latvia** stood out because participants reported challenges with finding information on vaccination practicalities (e.g., where to get vaccinated, how to sign up for vaccination). Especially in the focus group in Poland, participants were focused on the practical elements of vaccines/vaccinations. This links back to the findings reported under Theme 1 which showed that participants in the Polish focus group missed practical information about when and where to get vaccinated.

*"Well I recently wanted to sign up my dad for a vaccination against COVID-19. I think it was the 4th or 5th dose. But there were no vaccines anywhere in the area. Well, I went into his patient account and there I could not find anything. There was an error in some data and I called the health centres and it turned out that there are no such vaccines." (Woman, 18-34, high education, Poland)*

* Secondly, participants in the focus groups in **France and Hungary** stood out for showing little interest in leaflets/brochures or posters on vaccines/vaccinations. Hungarian focus group participants explained that such materials often go unnoticed, that they provide little space to include detailed information, and that they are generally perceived as superficial as they have an explicit selling purpose.

*"Well, I think that we are basically immune to posters now. I feel that they often convey such simple messages or they are very demagogic." (Woman, 18-34, high education, Hungary)*

* Finally, the majority of the Swedish focus group participants were very positive about the wide array of public information on vaccines/vaccinations that is available in **Sweden**. Most notable: this was the only focus group that was so uniformly satisfied with the information provided by their public health organisations.

*"I would say that everything they do today is very good. We are over informed here in Sweden about things like this. You find information everywhere; from webpages, to commercials, to social media ads, ads in the newspapers, the healthcare centre, childcare centre. We are vaccine crazy here, so it feels we get so much information that we do not need more." (Man, 18-34, medium education, Sweden)*

On the other hand, focus group participants in **Romania and Hungary** raised the issue of political interference in their public health system. They believed a clearer separation between politics and public health institutions is necessary if those institutions want to be perceived as legitimate by the public. For example, in the Romanian focus group, focus group participants explained that because of political cronyism, HCPs tend to have a political agenda. The participants further clarified that this leads patients to be unsure about whether the information they receive from public health authorities is politically influenced or not. In the Hungarian focus group, participants further pointed out that personal credentials that were used to register themselves for COVID-19 vaccinations were later used to send citizens political messages.

*"I think that the state should not assume a bigger role. Because what happened when we registered for COVID-19 vaccine? Later on, we received political messages. So I think that the state discredited itself on some level with such things. So I still think that no, the state does not need a bigger role here." (Man, 35-54, high education, Hungary)*

### Results HCPs

#### Information sharing challenges

The HCPs in the focus groups experienced **three main information sharing challenges:**

**1. Misinformation**: caused by untrustworthy information channels, the complexity of the available information and misinformation myths.

**2. Vaccination hesitancy**: caused by perceived uselessness of vaccines, fear for side effects, weariness, newness of the vaccine and misinformation.

**3. Different cultural approaches**: including language barriers and different standards in country of origin.

Three main challenges surfaced when asking HCPs in the focus groups about the **challenges they experience when discussing or sharing information** about vaccines/vaccination with their patients:

* **Misinformation**: A limited or inaccurate understanding of vaccines/vaccinations among patients due to the uptake of incorrect information;
* **Vaccination hesitancy**: Scepticism or resistance of patients towards vaccination;
* **Cultural approaches**: Language barriers and vaccination standards that differ between patients’ country of residence and their country of origin.

Notably, **misinformation can lead to vaccination hesitancy, but this is not necessarily the case**. Also, HCPs indicated that each of the abovementioned challenges may have different roots and causes.

In what follows, the main observations are listed per category of challenges, including the strategies HCPs in the focus groups reported to address these.

**Misinformation** is driven by three key factors that may result in a lack of awareness or in understanding ‘deficiencies’ among patients:

* **Untrustworthy information channels**: Most HCPs in the focus groups agreed that the sheer amount of online available information about vaccines/vaccinations makes it difficult for patients to find reliable sources for information. One of the challenges HCPs, therefore, face is correcting false information which patients retrieved from the internet and/or social media and bring clarity in patients’ confusion caused by incorrect word of mouth information spread in anecdotal communication between friends, relatives and parents. This challenge of untrustworthy information channels was mentioned in all ten countries.

*"During COVID-19 and at certain times now, social media. Because that is where they pick up some of these wacky theories and they get a bit freaked out. These stories get a bit of a life of their own. That's where a lot of the questions come from and people are reluctant." (Woman, 35-54, GP, Ireland)*

*"I remember my mother would just take me to the doctor's and that was it. Now parents listen to other parents, there are discrepancies - often - between siblings and what vaccines are mandatory for one and not for the other. This creates confusion." (Man, 45, paediatrician, Italy)*

* **Complexity of available information**: Less prevalent, but still raised by HCPs (more specifically, in the Italian, Polish, Portuguese and Romanian focus groups), was the belief that patients are misinformed due to the complexity of the information (e.g., medical terms) they come across when searching for information on vaccines/vaccinations. Note that German and Hungarian focus groups indicated that complexity was no issue since they made sure to translate complex information to their patients by explaining vaccines/vaccinations in an accessible manner.
* **Misinformation myths**: As a result of the two information problems mentioned above, HCPs explained that patients lack a basic understanding of how vaccines work or sometimes hold on to common vaccine myths. Especially when it comes to the vaccination of children, HCPs are sometimes faced with parents who believe in a connection between MMR vaccines and autism, a myth that continues to circulate online and among anti-vaxx communities (mentioned in the Swedish and Polish focus groups). Also, some Covid-19 conspiracy theories (e.g., Covid-19 vaccines are a means for governments to control citizens ) remain persistent among some patients (mentioned in the Romanian focus group). Note that although the problem of misinformation myths was only brought up in three countries here for Theme 4, the problem is probably more widespread since those myths were also mentioned in other countries in the results for Theme 1.

*It is also the old prejudice about autism and MPR which is still something that is brought up." (Woman, 35-54, paediatrician, Sweden)*

**The principal strategy via which HCPs in the focus groups reported to address misinformation among their patients is** by having a conversation with them in which they counter inaccurate information with accurate information about vaccines/vaccinations.

**Secondly, vaccination hesitancy among patients** was also regularly mentioned by HCPs as a challenge they face in their work. The focus group discussions with the HCPs showed that vaccination hesitancy is triggered by (a combination of) different factors:

* **Perceived usefulness of a vaccine**: HCPs reported that some patients do not consider vaccines/vaccinations useful as they got sick after having been vaccinated in the past and therefore reason that vaccination is not needed, or because they believe vaccination is unnecessary against diseases that are no longer prevalent in the population.

*"They ask what is the point of having a vaccine if I can catch the disease anyway - I explain that it would be an easier, tamer disease then." (Man, 57, nurse, Italy)*

*“The main challenge is the parents of young patients. Parents' arguments are that they live "green", maybe they won't live in Latvia in the future. Many people do not even take the tuberculosis vaccine, because they believe that tuberculosis has already been cured, but there are children who are not vaccinated and get very sick.” (Woman, nurse, 55+, Latvia)*

* **Side effects**: HCPs mentioned that some patients fear vaccine induced sickness or that they have misconceptions about the magnitude of side effects;
* **Weariness**: After the COVID-19 pandemic, HCPs in the focus groups observed that patients have become more weary of seasonal vaccines;
* **Newer vaccines**: When a vaccine has only recently been developed, patients cannot rely on prior experiences or recommendations of others, which, as pointed out by the HCPs, makes them more hesitant to get vaccinated. This finding was observed in relation to the COVID-19 pandemic, but in the German focus group HCPs also specifically mentioned this with regard to the Zoster and pneumococcal vaccine, and in the Swedish focus group HCPs observed this for the Rotavirus vaccine.
* **Misinformation** (see also the previous section): Patients are hesitant to get vaccinated because they have a limited or inaccurate understanding of vaccines/vaccinations.

The factors that drive vaccination hesitancy align with patients’ vaccine/vaccination questions (see Theme 1), about the necessity of vaccines as well as their side effects.

In addition to the above factors, it is also important to note that in Hungary, HCPs specifically raised the issue of patients being hesitant to get vaccinated because some patients lack the financial resources for vaccination.

Rather than trying to forcefully convince patients about the importance of vaccination, **HCPs said they mainly address vaccine hesitancy** by giving patients factual and reliable information. This approach, thus, focuses on **giving patients information and letting them decide for themselves**. Information that is often discussed with patients include (a) the **consequences of not getting vaccinated**, (b) the **individual benefits of getting vaccinated**, and (c) the **collective benefits of getting vaccinated** (e.g., vaccination prevents youngsters from jeopardising the health of their grandparents when visiting them). HCPs also pointed out that their role as an authoritative figure is in itself sometimes enough to make patients see the benefits of getting vaccinated.

*"Answering their queries. So what benefits are there, long and short term, and the potential side effects. Most of them come in and say 'oh Johnny and Mary down the road, they were in bed for a week after getting the vaccination', so you try to answer to them as plainly as possible, that 'yes, some people do have reactions, but for the vast majority, these vaccines are given and there are no real problems.” (Man, 18-34, pharmacist, Ireland)*

*"If they have made up their mind there is not really something you can do, but you have to try to have a discussion and explain why vaccines are important, both for the child and for society. Then again, it is voluntarily, so the decision is theirs anyways." (Woman, 35-54, paediatrician, Sweden)*

*"It is a dialogue. We try to explain and try to convince them without going too far into forcing them. With elderly people, we try and touch the raw nerve. Saying things like 'you would not want to catch severe flu and not be able to see your grand-daughter' for example or 'the neighbor got vaccinated'. It is more through this kind of discussion that we manage to convince them than with flyers." (Woman, 35-54, nurse, France)*

Finally, **different cultural approaches** to vaccination were noted by HCPs to be a frequently occurring challenge when discussing information about vaccines/vaccination with patients:

* **Language barriers**: Language is often experienced by HCPs as a barrier in their consultations with immigrants. Although national public authorities often provide information about vaccines/vaccinations in English, HCPs noted that such English translations are not always sufficient when patients’ level of English is low. In the Polish focus group, HCPs also specified that immigrant patients’ medical records are naturally in their native language, making it difficult for HCPs to check these patients’ medical history.

*“We have had difficulties. Many pregnant women who speak Indian and communicating is complex. They do not understand either English or French, they say one or two words and do not understand what we say." (Woman, 55+, midwife, Portugal)*

* **Vaccination beliefs and standards in country of origin**: HCPs in the focus groups encountered vaccination resistance among different groups of immigrants. Resistance is mostly triggered by cultural/ideological/religious factors and/or because of the different health practices that exist in their home countries. When the vaccination program in the country of origin, for example, does not include a particular vaccine, patients often do not understand why it would be necessary to get themselves vaccinated against that specific disease. Countries or cultures that were specifically mentioned in this regard were Arab (in Polish focus group), Romani (in Italian focus group), Indian (in Portuguese focus group) and Ukrainian (in Polish focus group) immigrants.

*"We have a lot of issues with Roma people, they really do not want to get vaccinated - I think they, in general, do not want anything injected. They see it as poison. We had to work with town hall to go ourselves to them, to talk and convince them" (Woman, 55, GP, Italy)*

HCPs said to **address language barriers** by conducting the consultation in English or by providing leaflets in English. Note that such English translations can still be insufficient, as mentioned above, when the patient’s level of English is low. In Sweden, HCPs shared that they have leaflets in the most common migration languages, which might be a better alternative than English translations. Swedish HCPs in the focus group, however, suggest that, **instead of providing information materials in different languages**, it would be better to **work with ambassadors who understand the cultural context, speak the language, and could clearly explain the benefits of vaccination**. It was, further, pointed out that in Sweden, immigrants, and in particular adult immigrants, are often disconnected from the health care system and therefore difficult to reach and to convince of the need to get vaccinated. During COVID-19 such ambassadors were used in Sweden with positive effects.

*"Here I think what would be an option, would be ambassadors. Like if you have a group where there is high resistance, then you try to find some leading people in that community. It would probably be efficient to focus more on such ambassadors. However, that is easier said than done." (Woman, 35-54 years, paediatrician,Sweden)

"I also believe in ambassadors. We have seen local examples of situations where this has worked out in some groups. It is incredibly important and probably one the most efficient ways to get information out there that people will take in." (Man, 55+, GP, Sweden)*

#### Preferences for information materials

In order to better address the above mentioned information sharing challenges, focus group participants were asked what kind of information materials they would need to more effectively communicate with their patients.

With regard to the **content,** the following elements were deemed most important to include:

- Information on the disease for which the vaccine is administered

- Information on side effects

- Information on developing and testing process

- Information on vaccination schedule

- Information on practicalities

- Concise language that is not too scientific

- Translating information materials in different languages (considered useful in some countries, while no interest in others)

With regard to the **format**, the following types of materials were considered to be the most useful:

- Leaflets and brochures (considered useful in some countries, while no interest in others)

- Centralized patient record system

- Vaccination reminders

- Public campaigns

- One central website

- Screens with slideshows

- Podcasts (only mentioned in Ireland)

Discussing the **content of vaccination information materials**, HCPs in the focus groups were conflicted about the **usefulness of translating information materials in different languages**. The focus group participants in Germany had no interest in translations. They brought up that they would need translations in too many languages to address the large variety of immigration groups. Also, the Swedish HCPs indicated that instead of using translated information materials, they thought it more useful to work with ambassadors (see above). That said, participants In the other focus groups did consider translations useful to tackle cultural challenges. For instance, Latvian HCPs showed interest in Russian translations, Polish HCPs in Ukrainian, Belarussian, Russian, and Arabic translations, and Italian HCPs in Arabic, Chinese and English translations, with the caveat that translations should be reflective of the majority ethnicities in the city of interest.

**Other suggestions that related to HCPs content preferences** for vaccination information materials included:

* Information on the disease for which the vaccine is administered, including the dangers of that disease. In Ireland in particular, HCPs mentioned that they would like to have more information on the risks of hospitalisation and death because of specific diseases against which they vaccinate.
* Information on side effects of vaccination
* Information on how the vaccine was developed and tested, especially in the context of new vaccines, since these generate the most questions among patients
* Information on the vaccination schedule
* Information on practicalities, e.g., availability of vaccines, when and how to enroll, etc.
* Language should be concise and not too scientific

Note that **Romanian HCPs** specifically asked for more information on Hepatitis B and BCG vaccine. In the **Portuguese focus group**, HCPs pointed out that they are less and less visited by representatives of pharmaceutical companies as well as not being informed by public authorities. This means that if they want access to information, they usually need to seek for it themselves.

Looking at the **format**, HCPs were divided on **the usefulness of leaflets and brochures**. In the German and French focus groups, HCPs said to not really believe in the effectiveness of leaflets and brochures. In other focus groups, HCPs saw some benefit of using such printed information materials (e.g., Italy, Romania) because it allows them to immediately discuss the printed information with the patient or they were more nuanced in the sense that they thought that such materials can come in handy for older target audiences (e.g., Hungary, Latvia).

*"Practically, it depends on age whether social media or the Internet will be suitable for a target group. Whether they prefer to take home a brochure or an informative material. They receive a lot of information during face to face communication, but often questions arise after reading the related information material.” (Man, 35-54, pharmacist, Hungary)*

*"I think we all prefer printed material because we are there and we can explain it ourselves.” (Woman, 59, nurse, Italy)*

Apart from leaflets or brochures, a variety of suggestions for other formats were made by the HCPs in the focus groups:

* a centralised patient record system with patients’ vaccination history
* vaccination reminders from health authorities, sent by email, mail or via a health application.
* simple and short public campaigns on TV, radio, social media, and in public places (e.g., public transportation)

*"In Hungary, conscious health education does not exist at this level yet. But if someone would support it, either on social media or on official TV channels (for example in the format of advertising blocks, health minutes), they would provide real help to healthcare workers and those people who want or need vaccinations.” (Man, 35-54, pharmacist, Hungary)*

*“Such a massive campaign, whether it is on a billboard or just on TV, promoting vaccinations in general and encouraging individual vaccinations. I think it would do a lot of good." (Woman, 35-54, nurse, Poland)*

* one website that centralises all information on vaccines/vaccinations and could maybe be divided into a space with information for citizens and a space with information for health care professionals
* screens in hospitals and doctor’s offices with slideshows on vaccines/vaccinations

*"Doctor's practices and hospitals would do well to have digital screens. In hospitals, this would be ideal because the information would be in front of your eyes all the time. A person can take the booklets and put them aside." (Woman, nurse, 55+, Latvia).*

* podcasts (only mentioned in Ireland)

*"There are a few new-Mum podcasts we would recommend - specific episodes like breast feeding, nutrition, vaccination. Something where people hear two people discussing it and where they try to look at both sides, so then you can validate. These two people should be people who are well informed but are not just dry scientists discussing vaccines. A resource like that, because most people have Spotify these days." (Man, 35-54, GP, Ireland)*

### Socio-demographic highlights (HCPs)

HCPs reported differences between patients of different ages and education level with regard to **vaccine hesitancy**.

With regard to **vaccine hesitancy and age**, HCPs specified that young patients ask more questions than older patients. The former often tend to verify the information they found online with their HCP, whereas the latter have more of a habit of delegating the decision to get vaccinated to their GP.

When it comes to **vaccine hesitancy and education level**, HCPs seemed divided. Some explained that the more educated patients are, the easier they are to convince to get vaccinated. Others noted that the opposite is also sometimes the case with the more educated patients being more likely to have already made up their mind against vaccination, which makes it, in turn, more difficult to convince them of vaccination.

### Country highlights (HCPs)

Apart from the country variations that were already discussed above, we also noted some more substantial highlights regarding the **encountered challenges**.

The HCPs in the **Swedish focus group** stood out because they were the only HCPs that mentioned the **lack of understanding of the societal benefits of vaccines (beyond the personal advantage)**.

*"Patients only think from an individual perspective, they do not think about the society, that is what I would say. It is not like they are ready to step up and take one for the team. I think that is a general culture." (Woman, 35-54 years, paediatrician, Sweden)*

*"Absolutely, I totally agree. They accept the vaccine if they win something themselves, but nothing else. I think it is their own win they want to achieve when their children are to get vaccines that are not included in the program. That is also a type of self-interest, not accepting an approach that has worked out for the best of the general public. It is also not cheap to give RSV vaccines to too many. It costs a lot." (Man, 55+, paediatrician, Sweden)*

Additionally, and similar to the findings that are reported under Theme 1 and Theme 4, HCPs in the **Polish** focus group said to get a lot of questions about vaccination practicalities. More specifically, the Polish HCPs in the focus group reported that **patients get lost in the vaccination system** because they have trouble to understand the enrollment procedures.

### Results of general population compared with results of HCPs

The **challenges** **that focus group participants in the general population encountered were mostly aligned with the challenges that HCPs raised**. For example, both groups mentioned challenges regarding misinformation, untrustworthiness of sources, and complexity of the found information. **HCPs though also raised the challenges of vaccine hesitancy and different cultural approaches**. The fact that these challenges were not discussed in the general population focus group is probably linked to sampling: anti-vaxxers were excluded and a proper knowledge of the national language was deemed necessary for participation.

With regard to **suggestions for offline materials**, the **results on the usefulness of leaflets/brochures or posters are aligned for the most part.** French HCPs indicated to not find leaflets/brochures or posters useful, which was confirmed in the general population focus group. Also German HCPs were not interested in offline materials. Although this was not expressed that strongly in the general population focus group, participants did also not have a lot of suggestions or thoughts about leaflets/brochures, which could confirm their irrelevance as mentioned by the HCPs. Finally, in the Hungarian general population focus group, participants explicitly mentioned to not be interested in offline materials. In the Hungarian HCP focus group, a more nuanced perspective surfaced with HCPs indicating that leaflets/brochures and posters could be useful for some target groups.

When looking at **suggestions for online materials**, participants **in the general population focus groups were a bit more general** in the sense that they broadly thought of channels like websites, mass media and social media. **HCPs though thought more ‘out of the box’ and mentioned more detailed channels** such as podcasts, screens in hospitals and doctor’s practices, a centralized patient record system etc.

Finally, the **suggestions that were made content-wise** mostly aligned between the general population focus groups and the HCP focus groups. Both emphasized the importance of simple and accessible language. In the general population focus groups the importance of adding visual elements as well was also brought up.

## Theme four: Information engagement/ Information sources for HCPs and awareness of the EVIP among HCPs

Theme four discusses how information about vaccines/vaccinations impacts focus group participants’ (from the general population) decision making process about whether or not to get vaccinated, if at all. It also looks into participants’ information sharing behaviours, and thus whether they share the found information about vaccines/vaccinations with others. With regard to the HCPs, this section reports the information sources they use and, importantly, their awareness of the European Vaccination Information Portal (EVIP).

### Results general population

#### Impact of online information on vaccination decision

Online information about vaccines/vaccination is mostly perceived as **background information**. Final decision about whether or not to get vaccinated is primarily based on advice or information received from **GP**.

Although focus group participants indicated that the found information **contributed to their overall decision-making process of whether or not to get vaccinated**, their final decision was primarily made based on **conversations with their GP**. Particularly, information that was found online was more seen as background information, to prepare themselves before discussing the vaccine with their GP. Retrieved information was, thus, only a first step in the decision-making process. Any action taken would be decided based on the discussions with trusted sources, rather than the information retrieved via online searches. One focus group participant in Sweden even noted that the decision to get vaccinated was already made and the obtained information is more used to confirm what he was already thinking.

*"For me the information is just used to confirm something, but it does not have an impact. The decision has already been made, the information is secondary." (Male, 35-54, high education, Sweden)*

#### Information sharing

Information about vaccines/vaccinations is only shared within one’s **personal circle.**

In terms of **sharing behaviours**, almost all focus group participants indicated that they only share information about vaccines/vaccinations **within their personal circle** (i.e., friends, colleagues, (grand)parents). They did not mention anything about **online sharing** of information. Reasons behind this were not really discussed.

Please note that there were no general population socio-demographic nor country highlights to report on for this theme.

### Results HCPs

#### Information sources

The **main sources HCPs turn to** for information on vaccines/vaccinations are:

- Websites of national health care authorities

- Scientific sources

- Colleagues

Across countries, the **most common information sources** for HCPs in our focus groups included **(a) websites of national health care authorities, (b) scientific sources (e.g., PubMed) and (c) colleagues.** Other sources that were mentioned, but less often, were conferences**, pharmaceutical representatives and websites of pharmaceutical companies**. As discussed further, it is important to note that some sources were unique to a particular country (e.g., the information that accompanies the vaccine when the vaccines are delivered to pharmacies in Italy, (joint-hospital) fact or interest groups in Sweden that provide fact sheets with information and share contact information of experts or books of doctors who are considered to be experts on the topic of vaccines/vaccinations in Poland). A list with country-specific information sources is available below (see Country highlights section).

*"For instance, the vaccine for chickenpox is something that is debated on. In that case, I would look up scientific literature. There are a lot of good review articles and so on." (Woman, 35-54, paediatrician, Sweden)*

*"You get to know your network. You know if you have to ask the infectious disease department or an allergologist or other person with special expertise. Even within the Paediatric Association we have an interest group." (Male, 55+, paediatrician, Sweden)*

*"Mostly, we open the box and read the material inside - or we get taught when we gain our license" (Man, 33, pharmacist, Italy)*

*"I mainly use the book by Dr. Czajka. She is our pioneer in Krakow when it comes to vaccinations. And if I'm not sure about something, I always refer to the characteristics of the medicinal product. Online, "Medycyna Praktyczna", Product Characteristics. This is my base when it comes to vaccinations. Even though I vaccinate many times, I sometimes hesitate and prefer to check something because everyone is individual. There are no template cases, because everyone has different intervals. So this is my base.” (Woman, 18-34, nurse, Poland)*

#### Familiarity with EVIP

Most of the HCPs **had not heard about the EVIP**. There were exceptions, though, in Germany, Poland, Portugal and Sweden.

The following **recommendations** were made to increase awareness of the EVIP among HCPs:

- Linking the EVIP to website/newsletter of national health service/professional bodies

- Organising conferences or courses

- Improve ranking in online search results

- Include specifics on national level, not only EU level

Asked about whether HCPs had heard of the European Vaccination Information Portal (EVIP), **most of them did not**. However, there were exceptions in Germany, Poland, Portugal and Sweden. For both Germany and Portugal, one participant indicated to know the portal. In Sweden, two HCPs were familiar with the portal. In all three countries, HCPs explained that they had used the portal to look up information about travel vaccinations.

*“I have used it once during Covid in connection with travelling and to keep track of different countries requirements when it came to using masks and so on. So a small personal contact, but I do not use it professionally." (Man, 55+, paediatrician, Sweden)*

**In Poland, the majority (4 out of 6) of the HCPs indicated to know the portal**, but they deemed it not suitable for patients as the information on the website is too detailed and lengthy. As such, they also did not recommend it as an information source to their patients.

*"I think that this site is probably more directed towards people in healthcare than towards the average person. And if the site is directed towards the general population, then it still mostly understandable for people who know something about vaccinations, not a person who is completely green, so to speak. That's my feeling." (Woman, 18-34, nurse, Poland)*

Across the focus groups, HCPs made the **following recommendations to increase awareness among HCPs and patients**.

* Linking the EVIP to the website of the national health service (mentioned most often);
* Linking the EVIP to websites or newsletters of professional bodies;
* Organising video conferences or educational courses;
* Improving its’ ranking in online search results since the EVIP does not rank well according to the focus group participants, which makes it difficult for HCPs and patients to find it;
* In France, HCPs also suggested that it would help to not only present EU info, but also pay more attention to specifics on a national level.

*"It sounds reasonable and good that it would be going through the Public Health Agency of Sweden, because it is natural for us to go there to look for information. If there is a simple and good way to move on from there through a link, then that would be a natural way." (Man, 55+, GP, Sweden)*

*"The word 'Europe' generates stress, so it is key to clearly distinguish what is applicable to France. Recommendations and vaccines are not the same for all European countries." (Man, 35-54, paediatrician, France)*

Please note that no socio-demographic highlights were observed among the HCPs for this theme.

### Country highlights (HCPs)

Below, a detailed list is provided per country of the most prominent information sources which HCPs in our focus groups consulted to gather information on vaccines/vaccination.

It should be noted that the focus group in Poland stood out from the other countries because Polish HCPs reported to mainly consult sources of recognized doctor/professors or institutions. For example, books by Dr. Czajka and Dr. Bernatowicz were mentioned as well as information from the University of Gdańsk.

Country differences regarding the European Vaccination Information Portal were already discussed above.

* **Germany**
	+ Stiko or Robert-Koch-Institut
	+ Mail newsletter of KV (association of statuary health insurance physicians)
	+ Amboss (medical learning platform, a bit of a Google for physicians)
	+ Representatives of pharmaceutical companies
	+ Colleagues
* **France**
	+ BEH (Bulletin Epiémologique Hebdomadaire)
	+ Infovac
	+ HAS (Haute Autorité de Santé)
	+ PubMed
	+ Discussions with colleagues during seminars
* **Hungary**
	+ NNGYK (National Center for Public Health and Pharmacy)
	+ OGYEI (National Pharmaceutical and Food Health Institute)
	+ WHO (World Health Organization)
	+ Yearly vaccination conference
* **Ireland**
	+ NIAC (National Immunisation Advisory Committee)
	+ NHS (National Health Service) Ireland
	+ HSE (Health Service Executive)
	+ Websites of pharmaceutical companies
	+ SPC (Summaries of Product Characteristics)
	+ PIL (Patient Information Leaflet)
	+ Consultants
	+ Mass vaccination centres (refer complex patients to doctors in these centres)
	+ Training through IOP
* **Italy**
	+ Ministry of Health
	+ NHS (National Health Service) Italy
	+ EMA (European Medicines Agency)
	+ AIFA (Agenzia Italiana del Farmaco)
	+ Pharmaceutical companies
	+ Federpharma (Pharmacists association)
	+ PubMed
	+ Vaccine box
* **Latvia**
	+ National information websites/websites of state institutions
	+ Vaccine manuals
	+ Google
	+ Conferences or recordings from conferences on YouTube
* **Poland**
	+ Book by Dr. Czajka
	+ Books "Vaccinations in Questions and Answers" and "Protective Vaccinations" by Dr. Ewa Bernatowicz
	+ Professor Wysocki
	+ Dr. Rajewski on YouTube
	+ University of Gdańsk
	+ Websites of medical universities
	+ Academic website
	+ Characteristics of the product are looked up in "Medycyna Praktyczna"
	+ ChPL
	+ Sanitary inspection website
* **Portugal**
	+ Website of DGS (Direção-Geral da Saúde, general health department)
	+ European guidelines
* **Romania**
	+ pediatru.ro
	+ medscape.com
	+ Mediately (mobile app)
	+ NAMMDR (National Agency for Medicines and Medical Devices of Romania)
	+ The National Paediatric Congress
	+ Specialists that HCPs collaborate with
* **Sweden**
	+ website of Public Health Agency of Sweden
	+ PubMed
	+ Colleagues
	+ Paediatric association
	+ Fact groups consisting of GPs and hospital physicians

# Summary of key findings

Here we present the summary of key findings from the general population and health care practitioner (HCP) focus groups.

## Awareness interest in vaccines and vaccinations

When discussing current awareness and knowledge of vaccinations amongst general population participants, and general interest in the topic, key findings from the groups are.

#### General population participants

* For general population participants the first top of mind thought about vaccinations was COVID-19. Another key element when thinking about vaccines and vaccination for general population participants was the idea of protection and (individual/collective) immunity.
	+ In Poland participants also spontaneously mentioned difficulty to access vaccines, this came top of mind due to the experience of long ques to access COVD-19 and Flu vaccines.
* The lens through which focus group participants in the general population focus groups saw vaccines/vaccinations can be generally divided into two perspectives:
	+ An individual perspective, in which focus group participants perceive vaccines/vaccinations as a means to protect themselves against diseases and, thus, help them to obtain individual immunity; and,
	+ A collective perspective, in which focus group participants pointed out that by getting yourself vaccinated, you contribute to a collective immunity that keeps the population as a whole safe.
* When asked about general interest in vaccines and vaccinations, the responses were mixed with approximately half of participants in the general population focus groups reporting that they do not have a strong personal interest in the topic. Rather, only when a situation arises when vaccines and vaccination become personally relevant (e.g. travelling or child vaccinations) would they look into the topic. On the other hand, half of the focus group participants indicated a strong interest in the topic of vaccines and vaccinations. The main reason for this interest was again the idea that vaccination is a way to take care of your own health as well as protect the society as a whole, and particularly those members of society that have a weaker immune system.
	+ Older participants, those with young children and participants with underlying health conditions reported a greater degree of interest in vaccines and vaccinations.
	+ Almost all participants in Hungary, Poland and Romania expressed a strong personal interest in the topic, which differs from other countries included in the study where feelings were more mixed.
* Overall participants felt that they generally understood the purpose and basics (in terms of how vaccinations work) with the exception of Italy where participants reported feeling overwhelmed by the amount of information available. However, generally participants reported feeling less well informed of the content of vaccines. This became more prominent following COVID-19 when participants became more hesitant to vaccination due (in part) to conflicting stances on vaccine safety in available public information. As such, overall participants felt they would like to learn more about the content/ingredients of vaccines.
* General population participants tend to obtain information on vaccines and vaccinations from GPs, news outlets and internet/online sources. Other key sources include word of mouth via friends and family with information channels such as printed sources being less frequently reported.
	+ However older participants, particularly those in Italy, felt they did not need to look up information on vaccines and vaccinations as they have a clear purpose and are recommended by your GP.

In regard to the types of questions HCPs receive from patients about vaccinations and vaccines key findings from the HCP focus groups were.

#### Heath care practitioners

* Questions HCPs receive regarding vaccines and vaccinations generally relate to COVID-19 and flu/influenza across all focus group countries. There were some country specific differences for example, Pneumococcal vaccine (mentioned in Germany, Hungary, Portugal, Sweden), and Human papillomavirus (HPV) vaccine (mentioned in France, Poland, Portugal, Romania; mainly questions from students) (refer to section 4.1.4).
* Questions received can be grouped into three key themes:
	+ Necessity e.g. if vaccination is required after having contracted a disease or why vaccination is required for diseases no longer prevalent in society (e.g. diphtheria).
	+ Safety including side effects, often within the context of childhood vaccines.
	+ Practicalities including guidelines regarding when to have a vaccine, when to have a booster and length of protection against the relevant disease.
* Misinformation (or absence of information) regarding vaccines and vaccinations was reported as one of the most important reasons HCPs receive questions. HCPs in particularly the German, Hungarian, Italian, Latvian and Polish focus groups explained that the general knowledge of their patients is low because there is little (good/scientific) information available or patients show a lack of interest to inform themselves. While in Ireland, HCP participants reported that questions generally do not arise due to patients being poorly informed, but rather due to actively looking up information and wanting to verify it with their GP.

## How information on vaccines and vaccinations is found and shared, and the types of information sought including trusted sources

How the general public participants find information and share information on vaccines and vaccinations, and what they are looking for, key findings are.

#### General population

* When searching for vaccine/vaccination information online participants reported searching for (a) COVID-19 vaccines, (b) travel vaccines, (c) HPV vaccines, (d) and flu vaccines.
* The specific type of information searched for included:
	+ Side effects (short and long-term)
	+ Age-specific recommendations
	+ Benefits and risks
	+ Practical information to get vaccinated (e.g., location)
	+ Effectiveness period/ repeat intervals/ when to get vaccinated before travel
	+ Working mechanism and ingredients (e.g. COVID-19 MMR vaccines)
* Motivations or triggers to search for information are reported as twofold by participants (i) fact checking information they have come across via different channels e.g friends, in the news or on social media; and, (ii) obtaining practical information after a decision was made (e.g. side effects, where/ when to get vaccinated).
* Most focus group participants explicitly mentioned that the information they looked up about vaccinations rarely determined their decision to get vaccinated. This decision was more likely to be influenced by the discussions they have with their personal GP, who is also up to date with their medical history.
* Trust in the messenger is key defining factor in how and where participants search for information.
	+ General practitioners are the most important and influential source for information.
	+ Online, key sources for information are websites from trusted national public health authorities.
	+ The common denominator in deciding whether a source was evaluated as trustworthy was that it needs to be tied to a recognised/ legitimate public authority (e.g., a government ministry, body or agency) or a recognised/ legitimate scientific health institution or actor (e.g. a university or well-known research centre, a hospital, a medical doctor).
	+ While social media, and Chat GPT, were occasionally mentioned as sources for information in specific focus group countries (i.e., Poland, Hungary, Romania, Latvia and France), generally these sources were perceived by many participants as unreliable and therefore to be avoided entirely.

#### The types of information shared by HCP participants with patients, key findings are.

#### Heath care practitioners

* When conveying information about vaccines and vaccinations HCPs reported generally talking face-to-face with patients and that this was the most effective way to share information. This was based on trust in the relationship between HCP and patient, the guiding role of the HCP to hep patients navigate information, the opportunity to tailor information to the patients’ context and understanding, interactive nature of face-to-face conversations, and being more suited to specific target groups such as the elderly.
* The type of information HCPs share with patients and how they approach the topic generally includes:
	+ Explaining side-effects and/or effectiveness of vaccines and vaccination. Including sharing statistics on effectiveness and that vaccination does not provide 100% immunity.
	+ Striking a balance between convincing and considering patients thoughts and feelings regarding vaccines/ vaccinations.
	+ Referring to trusted online sources as an additional source of information. For example, Germany (STIKO website), Poland (ChPL, szczepienia.info), Ireland (Health and Safety Executive website, National Health Service website (UK)), Portugal (DGS (Direção-Geral da Saúde) website).
	+ The consequences of not being vaccinated.
	+ Taking into account and clarifying contraindications: complications a vaccine/ vaccination may have with other diseases or medical conditions a patient has.
* Printed communications such a leaflets and brochures were generally considered as secondary means of communication, being used to support face-to-face interactions. HCP participants reported that patients themselves rarely ask for written information and that in many countries these materials are not always available among HCPs (specialised doctors such as paediatricians and pharmacists tend to have these more available).Printed communications often come from pharmaceutical companies and HCPs are wary of being perceived as sales people for these companies by patients which would impact trust in the HCP patient relationship.
* HCPs rarely recommend websites to their patients for information about vaccines/ vaccinations (with the exception of the Polish, Swedish and Irish focus groups). The main reasons for this are that HCPs question patients’ capabilities to (a) navigate online information and (b) understand the often complex and medical terminology that is used in websites of, for example, national public health authorities.
* However, HCPs themselves do use websites of public health authorities and scientific/health institutions to stay informed about vaccines/ vaccinations.

## Main issues regarding access to information on vaccines and vaccinations

The main issues regarding access to information, quality and barriers for the general population participants are.

#### General population

* Participants raised five key challenges when seeking information on vaccines and vaccinations.
	+ Feeling overwhelmed by the abundance of information.
	+ Knowing what sources to trust and turn to.
	+ Difficulty understanding information due to its technical nature and framing.
	+ Understanding how to make use of conflicting information.
	+ Distinguishing factually correct information from incorrect.
* Approaches used to tackle these challenges include.
	+ Speaking to their GP to verify the information.
	+ Speaking to family and friends
	+ Relying on information on websites of public health institutions
* When thinking about preferred channels for future online searches participants mentioned websites of public health institutions, mass media and social media. Their preferred format for online information was a combination of textual and visual elements. This includes:
	+ Simple language, not too much expert terminology;
	+ Summary at the beginning of the webpage that mentions the key takeaways;
	+ Structuring information in Q&A format;
	+ Structuring information with clear subheadings;
	+ Using the same structure for each vaccine/vaccination that is discussed;
	+ Gathering all relevant information in one website so there is no need to click through other websites.
* When asked what public health authorities can do to help citizens find and make sense of information the following suggestions where mentioned.
	+ Organise (online) info sessions or webinars (e.g., a webinar in which a HCP explains details about vaccines/vaccinations).
	+ Improving search results in search engines so that the first results are also the most trustworthy sources.
	+ Invest in quick formats with easy to digest information.
	+ Run more public campaigns on vaccines/vaccination.
	+ Improve one’s presence on social media platforms.

For Heath Care practitioners the barriers and challenges when sharing inform and informing patients are.

#### Health care professionals

* The main challenges raised by HCP participants were:
	+ Limited or inaccurate understanding of information by patients due to the uptake of incorrect information.
		- The principal strategy via which HCPs in the focus groups reported to address these misinformation challenges among their patients is by having a conversation with them in which they counter inaccurate information with accurate information about vaccines/vaccinations.
	+ Hesitancy and scepticism towards vaccination.
		- To mitigate hesitancy, HCPs reported that rather than trying to forcefully convince patients about the importance of vaccination, HCPs said they mainly address vaccine hesitancy by giving patients factual and reliable information. This may include discussing with patients the consequences of not getting vaccinated, the individual benefits of getting vaccinated, and the collective/societal benefits of getting vaccinated.
	+ Language barriers and difference in standards/approaches to vaccines between the patient’s country or residence and country of origin.
		- Resistance is mostly triggered by cultural/ideological/religious factors and/or because of the different health practices that exist in their home countries. Countries or cultures that were specifically mentioned in this regard were Arab (in Polish focus group), Romani (in Italian focus group), Indian (in Portuguese focus group) and Ukrainian (in Polish focus group) immigrants.
* To address information challenges identified by HCP participants the following was raised.
	+ Information content should include:
		- Information on the disease for which the vaccine is administered
		- Information on side effects
		- Information on developing and testing process
		- Information on vaccination schedule
		- Information on practicalities
		- Concise language that is not too scientific
		- Translating information materials in different languages (considered useful in some countries, while no interest in others)
	+ Information format should be:
		- Leaflets and brochures (considered useful in some countries, while no interest in others)
		- Centralised patient record system
		- Vaccination reminders (e.g. via email, mail, health apps)
		- Public campaigns (e.g. radio, TV, social media)
		- One central website
		- Screens with slideshows on vaccines/vaccinations (e.g. in doctors’ offices)
		- Podcasts (only mentioned in Ireland)

## How they engage with information on vaccines and vaccinations

#### General population

* Overall online information about vaccines/vaccination is mostly perceived as background information. Final decision about whether or not to get vaccinated is primarily based on advice or information received from GP.
	+ Participants reported that their final decision regarding vaccination was made based on conversations with thier GP, and information online was used to prepare for discission with their GP.
* Participants in the groups did not mention sharing information regarding vaccines and vaccinations online. Instead, almost all, indicated that they only share information about vaccines/vaccinations within their personal circle (i.e., friends, colleagues, (grand)parents).

#### Health care providers

* Across countries, the most common information sources for HCPs in our focus groups included (a) websites of national health care authorities, (b) scientific sources (e.g., PubMed) and (c) colleagues.
* Asked about whether HCPs had heard of the European Vaccination Information Portal (EVIP), most of them did not. However, there were exceptions in Germany, Poland, Portugal and Sweden. For both Germany and Portugal, one participant indicated to know the portal. In Sweden, two HCPs were familiar with the portal. In all three countries, HCPs explained that they had used the portal to look up information about travel vaccinations. In Poland, the majority (4 out of 6) of the HCPs indicated to know the portal, but they deemed it not suitable for patients as the information on the website is too detailed and lengthy.
* Recommendations to increase awareness of the EVIP among HCPs and patients were.
	+ Linking the EVIP to the website of the national health service (mentioned most often);
	+ Linking the EVIP to websites or newsletters of professional bodies;
	+ Organising video conferences or educational courses;
	+ Improving its’ ranking in online search results since the EVIP does not rank well according to the focus group participants, which makes it difficult for HCPs and patients to find it;
	+ In France, HCPs also suggested that it would help to not only present EU info, but also pay more attention to specifics on a national level.

# Communication recommendations

Based on the results from the focus group study, recommendations for communicating with patients on vaccines/ vaccinations can be made with regard to **three elements of communication**:

* Recommendations on **what** is communicated to patients (content and framing of content)
* Recommendations on **how** information is communicated to patients (format and channel use)
* Recommendations on **who** is communicating to patients (messenger/ source)

## Recommendations on content and framing

Following the findings from the general public as well as the HCPs focus groups, communication materials aimed at informing the general public are advised to **include the following content/ information**:

* **Necessity**/ importance of getting vaccinated;
* **Safety** of vaccine, including information on side effects and ingredients of the vaccine/ how the vaccine works;
* **Practicalities**, including information about the vaccination scheme, age-specific recommendations, price and logistics (e.g., where to get vaccinated).

This information is preferably shared using **simple and accessible language** that does not contain too many medical terms, and with specific **reference to the national vaccination context and guidelines**.

**When creating informational materials for specific vaccines**, it might be relevant to focus more on **COVID-19 vaccines, influenza vaccines, HPV vaccines, pneumococcal vaccines, and travel vaccines** since focus group participants indicated that they are most likely to search for information on these specific vaccines.

Beyond the topic of information, the focus group results also showed that the effectiveness of information about vaccines/ vaccinations often depend on the **content framing strategies** that are used to convey a message, and the **discourse and tone of the communication**. As pointed out by the HCPs in the German focus group, when developing **awareness raising campaign materials**, it is particularly important that content **catches people’s attention in a meaningful way**, enabling patients to relate the message to their personal life. Using images, and keywords or slogans that speak to them **emotionally** could be effective here. The example of a German vaccination campaign that targeted the elderly was given, in which messaging connected the benefits of vaccination to living a longer life and, therefore, being able to enjoy as much time as possible with grandchildren.

Note that for European health authorities, it was specified that it is important that the information shared by these authorities is **country-specific and in the local language**.

## Recommendations on format and channel use

For both digital and printed information, results showed that it is important to present information in a **well-structured format**. For **online information**, this includes:

* Summarising the key takeaways at the beginning of the webpage;
* Using clear subheadings;
* Providing Q&A formats;
* Implementing the same structure for each vaccine/ vaccination that is presented;
* Collating all relevant information on one website;
* Including hyperlinks to (other) scientific websites for more information (increasing perceived reliability of the provided information).

Additionally, an **attractive layout** is indispensable to catch people’s attention, for both digital and printed information. When developing information materials, it is good to think of including the following **visual elements**:

* Tables and graphs presenting simple statistic data;
* Infographics;
* Relevant images that speak to the target audience;
* Short videos;
* Logo of messenger (to add credibility);

With regard to **channel use**, our findings show that a **distinction** needs to be made **between channels** that are deemed useful **for raising awareness** (e.g. traditional mass media and posters), **and channels** that are being used **to get more information** about specific vaccines/ vaccinations (websites from public health authorities, leaflets, social media accounts from health experts and doctors).

Additionally, **younger target groups** are more likely to be informed through their parents and teachers, which implies that communication efforts should be dedicated to these information mediators (e.g. developing school materials and information leaflets for parents).

When it comes to **digital channels**, Google was the key starting point for most participants in the general population focus groups when searching for information about vaccines/ vaccinations, after which most would land on websites of national public health authorities. The idea was raised int he focus groups that, to increase reach of the EVIP, website of national public health authorities could clearly refer to the EVIP.

Focus group results further showed that **social media accounts of health experts and doctors** also play an important role for spreading information about vaccines/ vaccinations, at least in specific countries (i.e., Hungary, Romania, and Poland).

## Recommendations on the messenger

Results showed that **GPs and (national) public health authorities are the** vaccine/ vaccination **messengers** **with the largest influence and reach**. Patients tend to be overwhelmed by the abundance of public information on vaccines/ vaccinations, and assessing the credibility of all this – sometimes conflicting, inaccurate, and difficult to understand – information can be challenging. Consequently, they often rely on the counsel from their GPs or they turn to trusted sources of public information.

Using these trusted sources to distribute information can significantly amplify the effectiveness of communication. Our findings indicate that it might be beneficial to **use GPs as spokespersons** and support them by **providing them with information materials they can implement in their current communication and information approaches**. For example, some GPs indicated that they mostly receive printed materials from pharmaceutical companies which they reluctantly use as they do not want to come across to their patients as salesmen, which could jeopardise the trust relationship with their patients. There is, therefore, an opportunity here for public health institutions to **provide GPs with leaflets/brochures or posters about vaccines/vaccination** **that are branded with a non-commercial messenger.**

Furthermore, when it comes to **digital information**, the present study observed a **gap between information materials GPs use themselves for informing patients about vaccines/ vaccinations and what most public health authorities** **are providing**. For example, the findings from this study showed that, with the exception of some countries (i.e., Poland, Sweden, Ireland), GPs rarely refer patients to websites of public health authorities, notwithstanding the fact that these websites contain factually correct and nationally relevant information on vaccines/ vaccinations. Yet, a number of GPs reported to use **rolling presentations (e.g., in PowerPoint) that are shown on screens in corridors and waiting rooms**. Additionally, GPs reported to inform their patients via their **personal doctor’s website or social media account**. Following this finding, public health authorities could, thus, increase the reach and effectiveness of their communication materials by developing flexible, ready-to-use slides or visuals that can be integrated in slide presentations used by HCPs to inform their patients on vaccines/ vaccinations. In this regard, one HCP in the focus group study suggested to use a Q&A format that addresses the most important vaccination questions patients may have.

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Annexes

1. Focus group guides
	1. General public

**Flow – 60 min**

|  |
| --- |
| 1. Introduction – setting the scene and warm up (8 mins)
2. Section one: Interest, knowledge and information needs (10 mins)
3. Section two: Information acquisition: sources, channels, type of information and search strategies (25 mins)
4. Section three: Information-seeking challenges (10 mins)
5. Section four: Information engagement: discussing, sharing, and acting on information (5 mins)
6. Wrap-up (2 min)
 |

**Introduction (8 mins)**

**Objective**: To introduce participants to the moderator and each other, to introduce the topic of discussion and set a common framework for discussion, and to remind participants of confidentiality.

* Welcome participants and thank them for taking part.
* Introduction of Ipsos and moderator
* Present the topic of the discussion: *this focus group is about vaccinations, which includes all types of vaccinations that aim to protect humans against diseases (e.g., childhood vaccines, vaccines against the flu, vaccines against Covid-19).*
* Introduce the client: *We are conducting this focus group on behalf of the European Centre for Disease Prevention and Control, a public health agency of the European Union.*
* Explain that the discussion will last about 60 minutes.
* There is no need to have specific prior knowledge on the topic and there are no right or wrong answers – all are right and welcome, whatever you think and feel is interesting to us.
* Describe how the focus group will be conducted and demonstrate key features of the platform that will be employed, including the hand-raise function.
* Explain confidentiality (see details recruitment instructions – specifically mention that the topic of discussion is sensitive as it relates to participants’ personal health), video-recording, and obtain informed consent for (i) participation and (ii) collecting and processing personal data on a sensitive topic.
* If the client is observing the focus group: please mention this and ask permission from the participants for the client to observe.
* Any further questions before starting?
* Introduction of participants.
* Finally, request permission to record both audio and video of the discussion. Explain that this is for analysis purposes [START RECORDING **AFTER PARTICIPANT INTRODUCTIONS**]

**Section 1: Interest, knowledge and information needs (10 mins)**

**Objective**:

* To understand which participants may potentially seek out information on vaccination and why,
* To identify level of interest of participants, self-assessment of own level of knowledge, and the areas where more information might be needed
1. *What were the first things that came to mind when I introduced the topic of this discussion: vaccinations?*
	1. *Can you say a bit more about this?*

For moderator: If participants struggle to come up with ideas, explain that they can share anything that comes to mind, like specific feelings they associate with vaccinations, things they heard about vaccinations, specific vaccines/diseases they are thinking of, personal experiences related to vaccination, etc.

* 1. *Why is this the first thing you thought about?*
1. IF PARTICIPANTS MENTION INFORMATION/SHARE KNOWLEDGE ABOUT VACCINES/VACCINATIONS, FOLLOW WITH: *You mentioned that you know/heard/read about* [information about vaccines/vaccinations], *can you say a bit more about where you heard/read about* [information about vaccines/vaccinations]/ *how you know about* [information about vaccines/vaccinations]?
2. *Thinking about vaccines and vaccinations (including all vaccines, e.g., childhood vaccines, vaccines against the flu, vaccines against Covid-19), is this is a topic which personally interests you?*

For moderator: Please make sure to have a response for all participants and note the answer down per participant.

* 1. *Can you say a bit more about why this topic interests you personally?*

For moderator: ask about specific situations/conditions that may trigger interest:

* Specific vaccines/diseases
* Specific situations/conditions like a public health crisis
* The person for whom the vaccination is administered (for respondent him/herself, a child, an elderly family member, etc.)
1. *How would you overall evaluate your own knowledge/understanding of vaccines/vaccinations? Do you feel well informed about the purpose of vaccinations? Why vaccinations are used? Or do you feel that you are not very familiar with this topic?*

For moderator: we do not want to directly ask participants about their knowledge (like explaining how vaccines work), but we do want to indirectly get a sense of what participants know or not know about the importance of vaccinations. Please probe in this direction:

* 1. IF FEELING WELL INFORMED: *You said that you feel well informed about the purpose of vaccinations, can you give an example/can you explain a bit further?*
	2. IF FEELING WELL INFORMED: *Are there still aspects of vaccines/vaccinations you would like to know more about? What specific aspects of vaccines/vaccinations would you like to know more about?*

For moderator: We ideally want to capture spontaneous responses, but the following probes can be used if participants find it difficult to give an answer:

* How vaccines/vaccinations work
* What they contain
* What common side effects are
	1. IF NOT FEELING WELL INFORMED: *You indicated that you do not feel very familiar with vaccines/vaccinations. Is this because you have no interest in this topic, or would you like to know more about vaccines/vaccinations?*
		1. IF WANTING TO KNOW MORE:What specific aspects of vaccines/vaccinations would you like to know more about?

**Section 2: Information acquisition: sources, channels, type of information and search strategies (25 mins)**

**Objective**:

To understand how participants acquire information on vaccines/vaccinations:

* Which participants have actively searched for information on vaccines/vaccinations in the past,
* Which sources/messengers, channels/media, and type of information are deemed valuable and are trusted,
* If and when the European Information Vaccination Portal is mentioned by participants as a valuable/trusted source (the EVIP is an information website on vaccines/vaccination from the European Centre for Disease Prevention and Control),
* If and when participants actively search for information on vaccines/vaccinations (ask their health care provider/pharmacist about this; look up information online), or if they are primarily incidentally exposed to information (e.g., on the news, heard from family, etc.).
1. *Can you think of a moment or a situation where you searched for information on vaccines/vaccinations online?*

For moderator: Please make sure to have a response for all participants and note the answer down per participant. Please also note that we are only interested in online information. We have a dedicated question later in the focus group discussion for participants that cannot think of such a moment or situation.

* 1. IF PARTICIPANTS CAN THINK OF SUCH A MOMENT: *Can you say a bit more about what specific information you were looking for and why? What prompted you to look for information online?*

For moderator: please, first reassure participants that they do not have to answer a question they personally do not feel comfortable answering. Answers are given voluntarily, and participants are free to decide which information they would like to share and how.

FOR PARTICIPANTS THAT ARE WILLING TO ANSWER, probe as follows:

* Specific vaccine/disease?
* Specific purpose: for travel?
* For yourself, a child, a family member?
* What specific information? E.g., side effects, benefits, how vaccine works, practical information of where to get the vaccine/vaccination, when to get the vaccine, etc.
	1. *And how did you search for this information online?* *Did you immediately go to a specific online source which you already had in mind, like a specific website, app, social media account of a person you follow, or AI tool like Chat GPT, or did you use a search function like Google to find more information?*

For moderator: In what follows, we are interested in both the source/messenger of information as well as the platform/channel via which this information is distributed. Sometimes this is evident, for example” a governmental website” (source/messenger: government, channel: website), but sometimes participants may say something like “on Instagram” or “from The New York Times”), in that case please ask about the specific social media account/source (like a health influencer) they are referring to (first example), or the specific platform (website, app, print paper) they used (second example).

* + 1. IF SPECIFIC ONLINE SOURCE: *Can you say a bit more about which online source you consulted for this information?*

For moderator: first capture spontaneous responses, then probe:

* Online news site from newspaper, television news broadcaster, news magazine
* Scientific database, like PubMed, or science website
* Social media account, for example from influencers, doctors, researchers, wellness influencers
* Website from a public (health) authority, which one? Please make sure this source is covered.
* AI tool like Chat GPT
	+ 1. *What was important for you in deciding on this source?*

For moderator: first capture spontaneous responses, then probe: Do they evaluate this source in terms of:

* Reliability/trustworthiness of source? If so, how do they evaluate the reliability, what do they look for to assess reliability (e.g., scientific source or from a public authority)?
* Familiarity with source? If so, is this a source they often turn to for other information/content?
* Type of information provided by source? E.g., very detailed information, scientific information, personalised information which is easy to relate to (e.g., from influencer), etc.
* Information format provided by source? E.g., video, infographic, scientific report, etc.
	+ 1. IF GENERAL SEARCH: *how did you go about this? Did you use specific search terms? Which ones?*
		2. *And which online source, like a specific website, app, social media account, or AI tool like Chat GPT, did you in the end rely on for getting the information you needed?*

For moderator: first capture spontaneous responses, then probe:

* Online news site from newspaper, television news broadcaster, news magazine
* Scientific database, like PubMed, or science website
* Social media account, for example from influencers, doctors, researchers, wellness influencers
* Website from a public (health) authority, which one? Please make sure this source is covered.
* AI tool like Chat GPT
	+ 1. *How did you decide on the selection of this source?*

For moderator: first capture spontaneous responses, then probe: Do they evaluate this source in terms of:

* Reliability/trustworthiness of source? If so, how do they evaluate the reliability, what do they look for to assess reliability (e.g., scientific source or from a public authority)?
* Familiarity with source? If so, is this a source they often turn to for other information/content?
* Type of information provided by source? E.g., very detailed information, scientific information, personalised information which is easy to relate to (e.g., from influencer), etc.
* Information format provided by source? E.g., video, infographic, scientific report, etc.
	1. FOR (1) SPECIFIC ONLINE SOURCE AND (2) GENERAL SEARCH: *Did you also consult other online or offline sources in addition to this first source? Which ones and why?*

For moderator: see above probes, but also probe further:

* *Were you not satisfied with the information received from the first online source you consulted? Why was this the case?*
* *Did you receive the needed information from the second source you consulted?*

For offline sources ask about which ones:

* General practitioner
* Pharmacist
* Friends/family
* Press/TV
* Leaflets/posters, such as at a clinic, doctor’s office or pharmacy, or other places
* …
1. FOR ALL PARTICIPANTS: *Now, imagine that you in the future would be in a situation where you would want to get more information about a vaccine – this could be for yourself, for a child, for travel purposes, etc.:*
	1. *What specific information would you most likely be interested in?*

For moderator: first record spontaneous responses, then probe:

* Side effects
* Benefits for your health
* How vaccine works
* Practical information of where to get the vaccine/vaccination, when to get the vaccine, etc.
	1. *And say you were to look up this information online, how would you most likely go about it? Would you immediately go to specific online sources, or would you use a search function like Google to find more information?*

For moderator: Note that participants might want to look elsewhere for information instead of online, in that case, please note down without further probing at this point. We are primarily interested in online information searching.

* + 1. IF SPECIFIC ONLINE SOURCE: *Can you say a bit more about which online source(s) you would most likely consult for this information?*

For moderator: first capture spontaneous responses, then probe:

* Online news site from newspaper, television news broadcaster, news magazine
* Scientific database, like PubMed, or science website
* Social media account, for example from influencers, doctors, researchers, wellness influencers
* Website from a public (health) authority, which one? Please make sure this source is covered.
* AI tool like Chat GPT
	+ 1. *What would most likely be important for you in deciding on this source or these sources?*

For moderator: first capture spontaneous responses, then probe: Would they evaluate this source in terms of:

* Reliability/trustworthiness of source? If so, how would they evaluate the reliability, what would they look for to assess reliability (e.g., scientific source or from a public authority)?
* Familiarity with source? If so, is this a source they often turn to for other information/content?
* Type of information provided by source? E.g., very detailed information, scientific information, personalised information which is easy to relate to (e.g., from influencer), etc.
* Information format provided by source? E.g., video, infographic, scientific report, etc.
	+ 1. IF GENERAL SEARCH: *how would you most likely go about this? Would you use specific search terms? Which ones?*
		2. *And how would you most likely decide which source(s) to choose from the search list?*

For moderator: first capture spontaneous responses, then probe: Would you most likely evaluate sources in terms of:

* Reliability/trustworthiness of source? If so, how would they evaluate the reliability, what would they look for to assess reliability (e.g., scientific source or from a public authority)?
* Familiarity with source? If so, is this a source they often turn to for other information/content?
* Type of information provided by source? E.g., very detailed information, scientific information, personalised information which is easy to relate to (e.g., from influencer), etc.
* Information format provided by source? E.g., video, infographic, scientific report, etc.
	1. *Would you also look for other sources apart from online sources?*

For moderator: capture spontaneous responses and then probe:

* General practitioner
* Pharmacist
* Friends/family
* Press/TV
* Leaflets/posters, such as at a clinic, doctor’s office or pharmacy, or other places
* …
	1. IF PUBLIC HEALTH AUTHORITIES WERE NOT YET MENTIONED BY PARTICIPANTS AS A RELEVANT SOURCE: *Would you potentially consider sources from public health authorities, for example national, local, or European health organisations?*
		1. *Why yes/no?*

For moderator: first capture spontaneous arguments, then probe to see whether sources from public health authorities are trusted or not, and why.

* + 1. *Which public health authorities, if any, would you potentially consider as a source for information on vaccines/vaccination?*

For moderator: it might be difficult for participants to come up with specific names, so it is fine if participants say “national health authority” or “European health authority”.

* + 1. IF NOT MENTIONED BY PARTICIPANTS: Have you heard of the European Vaccination Information Portal, a website from the European Centre for Disease Prevention and Control in cooperation with the European Commission and European Medicines Agency which provides information about vaccines/vaccinations, and is available in all EU/EEA languages?
		2. IF YES: Have you consulted this website in the past, and for which purpose?

For moderator: ask participants to provide a bit more context:

* How did they know about this portal?
* What specific information were they looking for?
* Were they satisfied with the information found?

**Section 3: information seeking challenGes (10 mins)**

**Objective**:

* To map and understand challenges participants have in finding and getting access to online information they need about vaccines/vaccinations.
1. FOR PARTICIPANTS THAT HAVE SEARCHED FOR INFORMATION ABOUT VACCINES ONLINE: *Thinking about a situation or moment in the past when you searched for information online on a specific vaccine/vaccination, did you ever encounter any challenges in finding the information you needed?*
	1. IF YES: *Can you say a bit more about the challenges that you encountered?*

For moderator: first record spontaneous responses, then probe: Were challenges related to:

* + 1. Knowing where to find information: Which sources to consult to get reliable, accurate, trusted information.

For moderator: please note that participants notions of “reliable, accurate, trusted information” may vary.

* + 1. Being able to find your way through the abundance of different sources that are online available and to make sense of the variety of online information on vaccines/vaccination.
		2. Getting access to this information.

For moderator: accessibility will probably be less of an issue, given that all participants have a pc with access to the internet, and that health care providers are easily accessible within the EU. Still, participants might have challenges accessing scientific publications that are only available with paid subscriptions, or have disabilities that make accessing information challenging.

* + 1. Understanding the information:
		- Was information too complex, e.g., using scientific terms
		- Too long, e.g., large text documents
		- Too varied, e.g., if participants consulted multiple different sources that presented contradicting facts
		- Were there specific informational aspects that were particularly difficult to understand: e.g., how vaccines work, what they contain?
		1. Evaluating the trustworthiness of information: Do participants feel confident in evaluating claims, statements, facts on vaccines/vaccinations which they come across when looking up information, or do they experience challenges in distinguishing incorrect information from correct information?
	1. *When you encountered these challenges, was there anything you did to get around them?*
		1. IF YES: *can you say a bit more about what you did?*
1. FOR ALL PARTICIPANTS: *Say that you in the future would search online for information about vaccines/vaccinations, what would help you to find and understand the information you need?*

For moderator: First capture spontaneous answers, then probe:

* 1. *Which online channels would be most accessible and useful for you when looking for online information on vaccines/vaccination?* *E.g.:*
		+ - Website
			- App on mobile phone (e.g. from public health organisation or government)
			- Specific social media platforms: TikTok, Instagram, X (Twitter), Snapchat, Facebook, YouTube
			- AI tool/website like Chat GPT

For moderator: it might be helpful to ask participants about the online channels they tend to use most often in daily life for informational purposes, as these will probably also be the ones they will reach for in case they want to look up online information on vaccines/vaccination.

* 1. *In which format would you like to receive the information?*  E.g.:
		+ - Written text
			- Video
			- Infographic
1. And thinking specifically about offline information materials such as leaflets/brochures and posters about vaccines/vaccinations
	1. *Where would you most likely come across these information materials, or look for these information materials, if at all?*

For moderator: first capture spontaneous responses, than probe:

* FOR LEAFLETS/BROCHURES: doctor’s office, pharmacy, public library, other specific public places, etc.
* FOR POSTERS: train station, shopping mall, other specific public spaces
	1. *And thinking about how information is presented in these information materials, how should posters and leaflets/brochures be designed to make them appealing/engaging to you?*

For moderator: first capture spontaneous responses, than probe:

* Specific pictures/visuals to attract attention/create engagement
* Figures/charts that present information on vaccines/vaccination
* Infographics
* Amount of information
* Colours
* Logo of specific trusted messenger
* …
1. In your personal opinion, what could public health organisations do to help focus group participants find and understand the information they are seeking on vaccines/vaccinations?

**Section 4: information engagement: discussinG, sharing and acting on information (5 mins)**

**Objective**:

To understand what participants do with the acquired information on vaccines/vaccinations:

* Whether, how and with whom participants share/discuss this informationand why,
* How information is used in their daily life and relevant decision-making (e.g., vaccination of themselves, children).
1. FOR PARTICIPANTS THAT SEARCHED FOR OR CAME ACROSS INFORMATION ON VACCINES/VACCINATIONS IN THE PAST: *Thinking about when you searched for or came across information on vaccines/vaccinations, did this information influence your decision on whether you were going to get vaccination for yourself or a child?*

For moderator: please, reassure participants that they do not have to answer a question they personally do not feel comfortable answering. Answers are given voluntarily, and participants are free to decide which information they would like to share and how.

* 1. IF YES: in what way? Can you say a bit more about the context, which specific information was informative, and how this information affected the decision?
	2. IF NOT: in what way? Can you say a bit more about the context, which specific information was informative, and how this information affected the decision?
1. *Did you share the information which you came across/looked up with other people?*
	1. IF YES: *With whom did you share this information and why?* E.g.:
		* To inform other people
		* To get other people’s opinion to fact check certain information
		* …
	2. IF YES: *What specifically about the piece of information made you share it?* E.g.:
		* The reliability of the information
		* The specific format of the information
		* The information was very informative
		* …
	3. IF YES: *And did you share this information online or offline?*
		* IF ONLINE: *Was this on a public online platform (e.g., discussion forum of a news platform) or a personal social media account that is publicly visible, or was this on a private online platform such as a personal social media account that is only visible for users with access (e.g., Facebook, Instagram, WhatsApp group, etc.)?*

*We have now come to the end of the focus group.*

*Is there anything else on this topic which we have not discussed but which you would like to share?*

**Wrap up (2 mins)**

* Thank participants for their engagement with this focus group and their contributions.
* Explain that their thoughts and opinions will be used to inform the vaccination information dissemination strategy for the European Vaccination Information Portal, the EU website managed by the European Centre for Disease Prevention and Control (ECDC), in partnership with the European Medicines Agency (EMA) and the European Commission (EC).
* Reiterate that privacy will be guaranteed throughout data processing and that only aggregated findings from which participants cannot be identified, will be shared with the European Centre for Disease Prevention and Control.
* Ask whether participants have any remaining questions.

**THANK PARTICIPANTS AND CLOSE**

* 1. Health Care Providers

**Flow – 60 min**

|  |
| --- |
| 1. Introduction – setting the scene and warm up (8 mins)
2. Section one: What do patients/customers want to know about vaccines/vaccinations? (15 mins)
3. Section two: How do HCPs share information about vaccines/vaccinations with patients/customers? (15 mins)
4. Section three: What are the main challenges HCPs face when sharing and discussing information about vaccines/vaccinations with patients/customers? (15 mins)
5. Section four: Information sources for HCPs and awareness of the EVIP among HCPs (5 mins)
6. Wrap-up (2 min)
 |

**Introduction (8 mins)**

**Objective**: To introduce participants to the moderator and each other, to introduce the topic of discussion and set a common framework for discussion, and to remind participants of confidentiality.

Important: this focus group will include health care professionals (HCPs) that are, in some way, involved in administering vaccinations. They may, however, come from different health sectors/domains (e.g., medicine, pharmacy) and perform different health care roles/jobs (doctor, pharmacists, nurse). It will be important that participants not only introduce themselves but also clarify in which health care sector/domain they work and which health care role/job they perform.

Depending on composition of professionals, there might be a sense of hierarchy, so it is important to ensure everyone is able to share their thoughts.

* Welcome participants and thank them for taking part.
* Introduction of Ipsos and moderator
* Present the topic of the discussion: *this focus group is about vaccinations, which includes all types of vaccinations for humans* *(e.g., childhood vaccines, flu vaccine or Covid-19 vaccine).*
* Introduce the client: *We are conducting this focus group on behalf of the European Centre for Disease Prevention and Control, a public health agency of the European Union.*
* Explain that the discussion will last about 60 minutes.
* There are no right or wrong answers – all are right and welcome, whatever you think and feel is interesting to us.
* Describe how the focus group will be conducted and demonstrate key features of the platform that will be employed, including the hand-raise function.
* Explain confidentiality (see details recruitment instructions – please note that, contrary to the general population focus group, the topic of discussion is not sensitive as it does not relate to participants’ personal health but to how HCPs share and discuss information about vaccines/vaccination with patients, as part of their work as HCP), video-recording, and obtain informed consent for participation.
* If the client is observing the focus group: please mention this and ask permission from the participants for the client to observe.
* Any further questions before starting?
* Introduction of participants.
* Finally, request permission to record both audio and video of the discussion. Explain that this is for analysis purposes [START RECORDING **AFTER PARTICIPANT INTRODUCTIONS**]

**Section one: What do patients/customers want to know about vaccines/vaccinations? (15 mins)**

**Objective**:

* To understand how HCPs are involved with administering vaccinations,
* To understand which HCPs regularly receive questions for information about vaccines/vaccinations from patients,
* To understand the context and types of questions HCPs receive from patients.
1. *All participants in this focus group are health care professionals that are, in some way, involved with administering vaccines/vaccinations. Can you say a bit more about your involvement? For example, what is your specific role and how are you involved, is this an important part of your job, how often are you involved in administering vaccines/vaccinations etc.?* *Just to reiterate: we are interested in all types of vaccines, e.g. childhood vaccines, HPV, flu or COVID-19 vaccines.*

For moderator: please ensure that we capture this information for all HCPs in the focus group, as responses may vary depending on specific job role/context of work.

To be taken into account for the entire focus group discussion: If the responses are only or mainly about COVID 19, ask specifically about other vaccines too, like childhood vaccines or HPV.

1. FOR DOCTORS/NURSES: *Do you have patients of all ages or only adults/ only children?*
2. *Do you, as part of your job, often get questions from patients* (for doctors/nurses) or *customers* (for pharmacists) *about vaccines/vaccinations?*

For moderator: please make sure that we capture this information for all HCPs in the focus group.

IF YES:

* + 1. *About which vaccines do you primarily receive questions?*
		2. *What are the specific questions you usually receive about vaccines?*

For moderator: first capture spontaneous responses, then explore what specific questions they received about the vaccines they mentioned earlier.

* 1. Why are patients/customers asking these questions? In what situation or context are they asking it?

For moderator: first capture spontaneous responses, then probe: Is it because:

* + - * They are thinking of getting themself/child vaccinated but have doubts/hesitate
			* They already decided to get themselves/child vaccinated and want to get (some more) information
			* They recently received a vaccination and have follow-up questions, potentially because of a side-effect they are experiencing
			* They want to verify information about vaccines which they picked up elsewhere
			* They want to know which online sources they can consult for receiving reliable information on vaccines/ vaccinations

**Section two: how do HCPs share information about vaccines/ vaccinations with patients/ customers? (15 MINS)**

**Objective**:

* To understand how HCPs share information about vaccines/vaccinations with patients/customers.
1. *Thinking about the questions you most often get from patients/customers about vaccines/vaccinations, how do you convey the information? Do you talk to them? Do you make use of information materials or online sources? what information do you share with them?*

*Just to reiterate: we are interested in all types of vaccines, e.g. childhood vaccines, vaccines against the flu, vaccines against Covid-19, etc.*

For moderator: first capture spontaneous responses, thenprobe: *Do you (also) share information about vaccines/vaccinations with patients via leaflets/brochures, posters, videos or do you recommend online sources?*

* 1. IF YES for LEAFLETS/ BROCHURES, first capture spontaneous responses, then follow with:
		1. *Do patients/customers often ask for a brochure or leaflet with information on vaccines/vaccinations?*
		2. *How do you share these leaflets/brochures with them?*
			+ Offline, e.g.: in waiting room of doctor’s office, in pharmacy store, etc.
			+ Online, e.g.: in email communication, on website of hospital/ doctor’s office/ pharmacy?
		3. *What information do these leaflets/ brochures contain?*
		4. *Who is the distributer/source of these leaflets/brochures/posters?*
	2. IF YES for POSTERS, first capture spontaneous responses, then follow with:
		1. *Where are these posters displayed? E.g. in hospital, doctor’s office, waiting room, pharmacy etc.*
		2. *What information do these posters contain?*
		3. *Who is the distributer/source of these leaflets/brochures/posters?*
	3. IF YES FOR ONLINE SOURCES, first capture spontaneous responses, then ask if any of the following online sources are recommended:
		1. *National health organisations/authorities: which specific websites are recommended, if any?*
		2. *European health organisations/authorities: which specific websites are recommended, if any?*
		3. *Wider (beyond EU) international health organisations/authorities: which specific websites are recommended, if any?*
		4. *Other online sources? E.g., website of hospital/ doctor’s office/ pharmacy?*
* *What information do these online sources contain?*

	1. IF YES for VIDEOS, follow with:
		1. *Where do people watch these videos? Online, at screens in a waiting room or pharmacy…*
		2. *What information do these videos contain?*
		3. *Who is the distributer/source of these videos?*
1. *From your experience, are there particular brochures/ leaflets/ posters/ videos or other information materials which you think are especially effective for informing patients/customers about vaccines/vaccinations?*

*Just to reiterate: we are interested in all types of vaccines, e.g. childhood vaccines, vaccines against the flu, vaccines against Covid-19, etc.*

IF YES: *can you say a bit more about these* *brochures/ leaflets/ posters?*

* + 1. *What information do they contain?*
		2. *Who is the distributer/source of these* *leaflets/brochures/posters?*
		3. *What do you find particularly effective about these leaflets/brochures/posters?*

**Section three: What are the main challenges HCPS FACE when discussing and sharing information about vaccines and vaccinations with patients/customers? (15 mins)**

**Objective**:

* To understand any challenges HCPs may have when discussing and sharing information about vaccines and vaccinations with patients/customers.
* To understand how HCPs approach challenges related to vaccine hesitancy and misinformation among patients/customers.
1. *What are some of the main challenges you face, if any, when discussing and sharing information about vaccines/vaccinations with patients/customers?* *As mentioned, we are interested in all types of vaccines, e.g. childhood vaccines, vaccines against the flu, vaccines against Covid-19, etc.*

For moderator: please first capture spontaneous responses, and then follow-up with the following probes. We expect that challenges will primarily relate to (a) conveying complex information to patients/customers, (b) vaccination hesitancy, (c) misinformation about vaccines/vaccinations among patients/customers, and (d) cultural approaches.

* 1. IF RELATED TO COMPLEXITY OF INFORMATION:
		1. *What are aspects of vaccines/vaccinations that patients/customers find particularly difficult to understand? Are there topics that your colleagues might not properly understand?*
		2. *Is this a challenge which you encounter with various patients/customers, or rather with a specific socio-demographic group (e.g., older people, lower educated, ethnic minorities etc)?*
		3. *How do you approach this challenge? Are there specific strategies you use to convey this information to patients/customers? Can you give an example?*
		4. *Do you use specific materials, like brochures, leaflets, visuals, infographics, websites to help you explain this information? IF YES, which materials? What is their source?*
	2. IF RELATED TO VACCINE HESITANCY:
		1. *What are common reasons patients/customers give for not wanting to vaccinate themselves/their children?*
		2. *How do you approach vaccine hesitancy among patients/customers? Do you try to convince patients/customers?*
		3. IF HCPS TRY TO CONVINCE PATIENTS/CUSTOMERS: *is there a specific information strategy/approach that works particularly well in your experience? Can you say a bit more about this?*
		4. *Do you use specific materials, like brochures, leaflets, visuals, infographics, websites to help you explain this information? IF YES, which materials? What is their source?*
	3. IF RELATED TO MISINFORMATION:
		1. *What are common misconceptions about vaccines/vaccinations that you encountered among patients/customers?*
		2. *Are these misconceptions prevalent among various patients/customers, or rather among a specific socio-demographic group?*
		3. *How do you approach/rectify these misconceptions? And which approaches have you found to be most effective?*
		4. *Do you refer to specific (online) sources which provide, in your opinion, reliable information on vaccines/vaccinations? IF YES, which sources?*
		5. *Do you use specific materials, like brochures, leaflets, visuals, infographics, websites to help you explain this information? IF YES, which materials? What is their source?*
	4. IF RELATED TO CULTURAL APPROACHES, e.g., minorities or marginalised communities:
		1. *What are the main challenges when communicating with patients/customers from such groups?*
		2. *Are there some questions specifically asked mainly by cultural minorities/ other minorities?*
		3. *Do you use specific materials, like brochures, leaflets, visuals, infographics, websites to help you communicate with such groups? IF YES, which materials? What is their source?*
1. *What kind of support or information materials would help you better communicate with and inform patients/ customers?*

For moderator: first capture spontaneous responses then probe and ask for specific suggestions/examples:

* + 1. Providing specific information/content:
			- * *Would you need information materials in other languages, e.g. in the case of minorities and other communities?*
				* *About which vaccines/vaccinations?*
				* *What type of information, e.g. logistical (such as vaccination schedules), specific facts about vaccines/vaccinations, etc.?*
				* *Where to find trusted information on vaccines/vaccinations?*
		2. Providing specific information materials/formats:
			- * Offline: leaflets, posters, information brochures, factsheets, etc.
				* Online: infographics, videos etc, information online, etc

**Section four: information sources for hcps and Awareness of the EVIP among hcps (5 mins)**

**Objective**:

* To understand to what extent, if at all, the EVIP is being used by HCPs to inform their information dissemination towards patients/customers,
* To understand what the ECDC can do to help HCPs share information with patients/customers.
1. *When you search for information on vaccines/vaccinations what are the main sources you turn to?*

For moderator: we are interested in both the source/messenger of information as well as the platform/channel via which this information is distributed. Sometimes this is evident, for example “the website of the European Information Vaccination Platform” (source/messenger: European Centre for Disease Prevention and Control, in partnership with the European Medicines Agency and the European Commission; channel: website). But sometimes participants may say something like “the National Health Care Authority” (source/messenger). In that case please ask about the specific channel/platform (like a website or app) they refer to.

For Moderator: please make sure that we capture the main sources/platforms for all HCPs in the focus group. First capture spontaneous responses, then probe:

* 1. Other online sources
	2. Professional or public health care bodies or authorities: Ask for specific names and platforms they consult.
	3. Colleagues/peers: Ask about the role and the field of work of these colleagues/peers. It might be that these colleagues/peers work in the same domain/unit as the participant but we do not know this for sure.
	4. Scientific publications: Ask about specific scientific journals and platforms where they access these. Will be most likely PubMed.
1. IF NOT SPONTANEOUSLY BROUGHT UP BY PARTICIPANTS IN THE PREVIOUS SECTION: *Are you familiar with the European Vaccination Information Portal?*

For moderator: capture spontaneous responses then probe as follows:

1. IF NOT FAMILIAR, EXPLAIN: *The European Vaccination Information Portal is an EU website managed by the European Centre for Disease Prevention and Control (ECDC), in partnership with the European Medicines Agency (EMA) and the European Commission (EC), which provides information about all types of vaccines/vaccinations, including an overview of official sources for information, as well as factsheets, videos and infographics about vaccines/vaccinations.*
	* 1. *What could EU public health authorities do to raise awareness among HCPs about the portal?*
2. IF FAMILIAR: *Have you recommended the European Vaccination Information Portal as an information source to patients/customers?*
	* 1. If NOT RECOMMENDED: *Is this because of a specific reason?*
		2. *Can you say a bit more about the specific reason for why you did not recommend the EVIP to patients/customers?*
		3. IF RECOMMENDED*: Which information did you find most useful on the portal?*

*We have now come to the end of the focus group.*

*Is there anything else on this topic which we have not discussed but which you would like to share?*

**Wrap up (2 mins)**

* Thank participants for their engagement with this focus group and their contributions.
* Explain that their thoughts and opinions will be used to inform the vaccination information dissemination strategy for the European Vaccination Information Portal, the EU website managed by the European Centre for Disease Prevention and Control (ECDC), in partnership with the European Medicines Agency (EMA) and the European Commission (EC).
* Reiterate that privacy will be guaranteed throughout data processing and that only aggregated findings from which participants cannot be identified, will be shared with the European Centre for Disease Prevention and Control.
* Ask whether participants have any remaining questions.

**THANK PARTICIPANTS AND CLOSE**

1. Aggregated focus group analysis sheet

The aggregated focus group analysis sheet is included as a separate document (Excel file) to this report.

1. For more details, see Ritchie, Lewis, McNaughton-Nicholls and Ormston (eds) (2013). *Qualitative Research Practice: A Guide for Social Science*. Sage. This source describes how to approach qualitative analysis in an applied policy research setting in a way that is clear, robust and defensible. [↑](#footnote-ref-2)
2. Bryman.A., 2016 Social Research Methods, Oxford University Press. [↑](#footnote-ref-3)