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Service contract to identify obstacles of physical, practical and administrative nature to develop recommendations

Annex to the Final Report

Material published on the website

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verian ifok. A CADMUS COMPANY EHMA European Health Management Association EAP

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Directorate-General for for Health and Food Safety (DG SANTE)

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Introduction

The European Health and Digital Executive Agency (hereinafter "HaDEA") appointed Verian, in collaboration with European Health Management Association (EHMA), ifok GmbH, European Academy of Paediatrics (EAP) and the European Regional and Local Health Authorities (EUREGHA), to carry out a Service Contract to identify obstacles to vaccination of practical, physical, and administrative nature and develop recommendations (HaDEA/2021/OP/0010).

This document is an annex to the final report and contains all the material published on the project website, overcomingobstaclestovaccination.eu. Table 1 provides an overview of all the material published on the website and included in this annex.

Table 1 Material published on the project website by type of publication

Material	Description	Page range
Deliverable 9	Overcoming obstacles to vaccination: five selected practices	7-34
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	Practice factsheet: Mobile vaccination units to increase COVID-19 vaccination uptake (Netherlands)	37-38
	Practice factsheet: Offering the flu vaccine to children in three primary schools (Ireland)	39-40
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Overcoming Obstacles to Vaccination

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Service contract to identify obstacles to vaccination of physical, practical or administrative nature and develop recommendations

Deliverable 9 (D9)

HADEA/2021/OP/0010

02/03/2023

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1. Introduction

The objective of Task 3 was to collect and evaluate national, regional, and local vaccination practices submitted by Member States' health authorities on the Best Practice Portal[1] of the European Commission's Directorate-General for Health and Food Safety (DG SANTE) to identify five best or promising practices. This report presents the methodological approach taken, the evaluation results, and the five selected practices.

To collect practices, a call was launched on the Best Practice Portal in collaboration with European Health and Digital Executive Agency (HaDEA) and DG SANTE and remained open to Member State health authorities from 29 September until 27 November 2022, including an extension of two weeks to allow health authorities to refine their submissions and encourage additional health authorities to submit a practice. The consortium closely collaborated with health authorities before and during this period to inform them of the project and its scope, guide them through the submission process, provide answers to their questions, and highlight timelines and deadlines.

The requirement of deliverable 9 (D9), as per Tender Specifications, was to collect "at least five best practices to overcome obstacles to vaccination of physical, practical and administrative nature, from at least two different EU Member States". A revised set of evaluation criteria was agreed by the Steering Group on Health Promotion, Disease Prevention and Management of Non-Communicable Diseases (SGPP) during a long revision process aiming to make the criteria more inclusive. As a result, 'promising practices' were also included alongside 'best practices' in the revised criteria.

According to the SGPP, "a best practice is a relevant policy or intervention implemented in a real life setting and which has been favourable [*sic*] assessed in terms of adequacy (ethics and evidence) and equity as well as effectiveness and efficiency related to process and outcomes. Other criteria are important for a successful transferability of the practice such as a clear definition of the context, sustainability, intersectorality and participation of stakeholders."[2] Promising practices follow the same evaluation criteria as best practices, however for some of the sub-criteria the requirements are less strict for promising practices, specifically by:

- Requiring less detail than the best practice criteria. For instance, a best practice criterion was *'An evaluation plan was designed including elements of effectiveness and/or efficiency and equity'*, while the corresponding promising practice criterion was *'The practice presents ideas on how it can be evaluated in the future'*.
- Eliminating some evaluation criteria. For instance, a best practice criterion was '*The practice has been evaluated with a sufficient level of independency and takes into account social and economic aspects from both the target population and the perspectives of relevant other stakeholders concerned (e.g. formal or informal caregivers, health professionals, teachers, health authorities)*' while the promising practice criterion was *'Not yet required / can be left empty'*.
- Requiring less points in the quantitative scoring to pass the evaluation thresholds, as further elaborated in Chapter 3.5 on scoring thresholds.

[1] https://webgate.ec.europa.eu/dyna/bp-portal/

[2] European Commission,Directorate-General for Health and Food Safety (n.d.), *Criteria to select best practices in health promotion and disease prevention and management in Europe*, available at: https://health.ec.europa.eu/system/files/2021-01/sgpp_bestpracticescriteria_en_0.pdf

The rationale behind including promising practice criteria was to ensure that practices, which are relevant and purposeful to overcome vaccination obstacles but are not as fully developed as best practices, could be included in the selection. For instance, during the COVID-19 pandemic, Member States designed and implemented some relevant, effective COVID-19 vaccination practices; however, because these practices are relatively recent, evaluations of these practices may not have been initiated yet by the practice owners. Since the best practice criteria require an evaluation of the practice, these COVID-19 practices would not have been included in the selection if it was not for the introduction of the promising practice criteria. For this project, it was regarded important to give promising practices the opportunity to be considered for the final selection, as they offer useful measures and lessons learnt that other Member States can benefit from. To this extent, the evaluation also examined closely whether the practices could be deemed fit for mutual learning (Task 4) and piloting (Task 5).

Finally, the five selected practices are promising practices from five different Member States; hence, the requirement for D9 was achieved.

2. Overview of received practices

Overall, a total of 24 practices were submitted by 16 regional or national health authorities via the Best Practice Portal[3]. Submissions came from Northern, Southern, Eastern, and Western Europe. France, Spain, and Portugal submitted three practices each, followed by two practices each from Croatia and Ireland. The majority of participating Member States submitted one practice.

Four main target groups were identified in the submitted practices: elderly, adolescents, children, and all age groups. The most mentioned target groups are ‘all age groups’ and ‘children’. Some received practices covered multiple target groups. Further, some practices covered ‘all age groups’ but also focussed on a certain target group; in these cases, both ‘all age groups’ and the relevant specific target group were assigned to the practices to highlight this focus. The result of this analysis is presented in Figure 1 below.

Figure 1. Target groups addressed by submitted practices

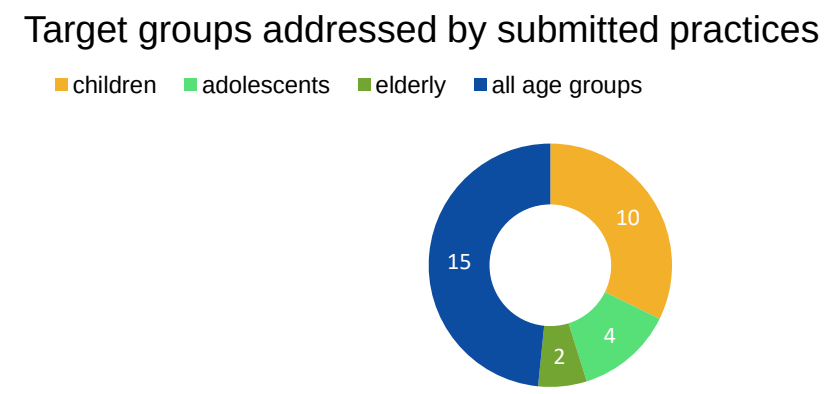
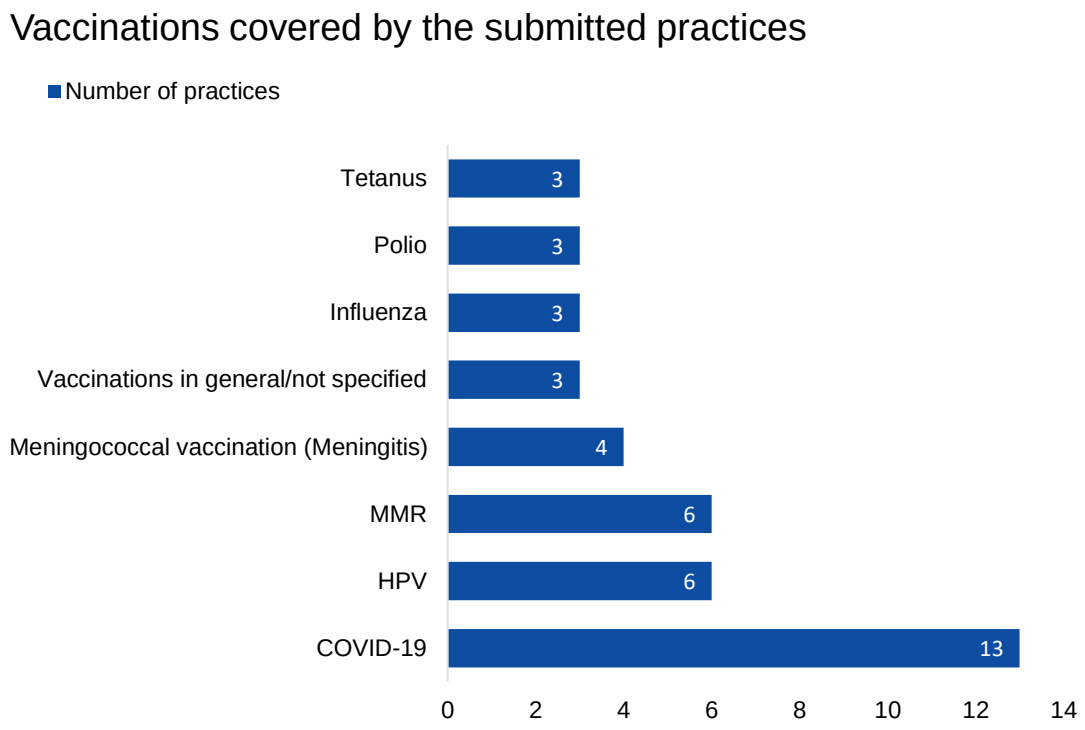


Figure 2 demonstrates the coverage of vaccines by the practices. It shows the number of times each vaccination under the scope of the project is covered by all received practices. Some practices focus on multiple vaccinations, which is why the numbers in the figure below exceed the total number of practices. The vaccination most covered by the practices is for COVID-19, presumably because the COVID-19 pandemic is very recent, and all Member States were affected by it. Other vaccinations that

[3] https://webgate.ec.europa.eu/dyna/bp-portal/

are well covered by the practices are the Human papillomavirus (HPV) and Measles, Mumps, and Rubella (MMR) vaccines.

Figure 2. Vaccinations covered by the submitted practices



3. Methodological approach

3.1. Overview of the methodological approach

Figure 3 presents the methodological steps which were taken to carry out the evaluation and includes a timeline for each step.

Figure 3. Methodological steps of evaluation

3.2. Evaluation team

The evaluation team consisted of eleven experts: eight evaluators from Fisabio, ifok, the European Association of Paediatricians (EAP), and Kantar Public who also assumed the role of the three rapporteurs. The eight evaluators covered essential areas of expertise for this evaluation, namely public health, paediatrics, capacity building and mutual learning, as well as policy and evaluation expertise. The three rapporteurs are specialists in policy and evaluation at the European level and ensured that the results of the evaluation were in line with the expectations of HaDEA, DG SANTE, and the European Centre for Disease Prevention and Control (ECDC).

The role of the evaluators was to review all received practices based on the revised evaluation criteria provided by DG SANTE. After evaluators had reviewed the practices, the role of the rapporteurs was to revise the evaluations for quality, coherence, completeness, and accuracy. This distribution of roles followed the one employed for DG SANTE's best practice evaluations on the Best Practice Portal.

3.3. Implementation of the evaluation

Due to longer-term ongoing technical updates on the Best Practice Portal, it was not possible to conduct the evaluation on the Portal in a timely manner. As a result, HaDEA and Kantar Public agreed on 8 December 2023 to carry out the evaluation outside the Best Practice Portal. For this, Kantar Public prepared Excel evaluation forms which integrated the revised evaluation criteria, which include best practice and promising practice criteria as agreed by the SGPP. The evaluation encompassed exclusion, core, and qualifier criteria, each covered by a set of sub-criteria.

Based on the information provided in the practice submissions, the evaluators then assessed the practices using either the best or promising practice criteria to evaluate the practices assigned to them. The evaluation comprised a quantitative scoring and a qualitative assessment:

- The quantitative scoring for all evaluation criteria was the average score that was given by the two to three evaluators assigned to each practice.
- Evaluators also gave individual qualitative assessments on all sub-criteria and the practice overall. The qualitative assessments of the sub-criteria highlighted key points, missing or unclear information, and justifications for the scoring. The assessment of the practice overall focused on main conclusions and recommendations about whether the practice should be taken forward for an onsite visit (Task 4) and the piloting (Task 5), taking into consideration innovative, creative or unique elements of the practice that can be transferred to other settings. This overall qualitative assessment ensured that the selected practices would be meaningful and engaging for health authorities to secure their buy-in for the following stages of the project.

After the evaluators had completed their assessment, the entire evaluation team (including the rapporteurs) determined in a final meeting on 12 January 2023 the practices which were the most interesting to take forward. For these interesting candidates, further information was collected via interviews and email exchanges with the relevant health authorities in January 2023 to complement and/or clarify information. Afterward, the rapporteurs reviewed all practices based on the information collected, the practices submitted, and the qualitative and quantitative assessments done by the evaluators. The rapporteurs' scoring was considered the final scoring as it includes the complementary information collected in January 2023.

3.4. Scoring

Quantitative scores ranged between 0 and 10, with 0 being the lowest and 10 the highest scoring. The evaluation team followed the scheme adopted by the SGPP:

Table 1. Scoring scheme

Points	Rating	Description
0-1	Very poor	The practice fails to address the criterion or cannot be judged due to missing or incomplete information.
2-3	Poor	The criterion is inadequately addressed, or there are serious inherent weaknesses.
4-5	Fair	The practice broadly addresses the criterion, but there are significant weaknesses.
6-7	Good	The practice addresses the criterion well but has a few shortcomings.
8-9	Very good	The practice addresses the criterion very well but has a few shortcomings.

10	Excellent	The practice successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

3.5. Scoring thresholds

The evaluation is sequential, starting with the exclusion criteria. Threshold levels apply to all sub-criteria under each of the three criteria groups: exclusion, core, and qualifier criteria.

Altogether a best practice can reach a maximum of 300 points. By comparison, a promising practice can reach a maximum of 250 points. All practices that receive at least 206 points are considered "best". Practices that receive at least 171 points are considered "promising". In sum, the thresholds for best practices are higher than those for promising practices, as follows:

Table 2. Scoring thresholds for best and promising practices

Criteria	Best practice	Promising practice
Exclusion criteria	81 out of 120 points	81 out of 120 points
Core criteria	58 out of 80 points	36 out of 50 points
Qualifier criteria	67 out of 100 points	54 out of 80 points
Total	206 out of 300 points	171 out of 250 points
Criteria	Best practice	Promising practice
Exclusion criteria	81 out of 120 points	81 out of 120 points

3.6. Selecting five practices

After the completion of the evaluation, the 11 practices with the highest number of points according to the evaluation were presented to health authorities during the validation workshop on 16 February 2023. During the workshop, health authorities were asked to vote on the practices that they would like to learn more about during an onsite visit. Participation from Member States was relatively high: 33 representatives of health authorities from 19 Member States joined. The workshop was also attended by HaDEA, DG SANTE, and the ECDC. Further workshop details and the results of the polling are presented in chapter 4.

The objective of the workshop was to validate details on the presented practices to Member State health authorities, give them the opportunity to ask each other questions about the presented practices, and collect their feedback about vaccination barriers they encounter and their interest in other Member States' practices. To meet these objectives, the aim of the workshop was to create an interactive environment that allowed health authorities to actively participate and freely exchange views and information among each other. Therefore, the 2-hour time planning was rigorously designed and planned to avoid participant fatigue. The detailed agenda is available in Annex 2.

The workshop activities included:

- **an introductory segment** with remarks by HaDEA and Kantar Public, presentations on the evaluation team (evaluators and rapporteurs), a step-by-step explanation of the evaluation approach, and a presentation of the preliminary vaccination barriers identified through Task 1.
- **presentations of the 11 practices**. The rapporteurs were selected to present the practices since they had an in-depth understanding of the practices through the evaluation but could also maintain an objective view when presenting.
- **3 question and answer (Q&A) sessions** in which health authorities could pose questions about the presented practices and the practice owners (health authorities) would be given the

floor to answer these questions. These sessions were key moments for health authorities to provide further insight into their practices and connect with each other.

- **2 polls**: at the beginning and the end of the workshop. The polls provided valuable data for the final selection but also encouraged active participation.

The final selection of practices is based on the evaluation results (number of points) balanced by Member State interest. The Member States' interest in the practices was determined through a poll in the validation workshop: the final five practices received the highest number of votes in the poll. Cases in which multiple practices received the same number of votes, those practices which had a higher quantitative scoring in the evaluation were selected.

4. The five selected practices

The tables in this chapter present each of the five selected practice in detail, including the:

- title;
- country of origin;
- governance level;
- vaccine(s) covered;
- barriers that can be removed by the practice;
- target group(s);
- approach;
- vaccination journey(s) addressed;
- justification for selection;
- quantitative scoring.

All the five selected practices surpassed the best practice threshold in total scoring. Many of them, however, only achieved the promising practice threshold for the core criteria. Therefore, all five selected practices are classified as **promising practices**, missing the mark to qualify as best practices by a maximum of only 6 points.

As detailed in the sections below, the five selected practices cover all vaccines under the scope of the project (MMR, meningitis, polio, HPV, tetanus, COVID-19, influenza) and broadly cover all five vaccination journeys, namely:

- Journey 1: A parent/legal guardian getting their child vaccinated for MMR (measles, mumps, rubella), meningitis, or polio;
- Journey 2: A parent/legal guardian getting their child vaccinated for HPV (human papillomavirus);
- Journey 3: An adult getting vaccinated for COVID-19;
- Journey 4: An adult getting a booster vaccine for tetanus;
- Journey 5: An elderly or medically vulnerable person getting vaccinated for seasonal influenza.

They also offer a wide variety of interesting, creative interventions that can be transferred to other Member States and target different population groups, including hard-to-reach groups. Finally, the selected practices are regional and national approaches from Spain, the Netherlands, Ireland, Italy, and Denmark.

Table 3. Legend - threshold signifiers

Legend: Threshold signifiers	
For a better illustration of the quantitative scoring results (total score, exclusion criteria, core criteria, qualifier criteria), symbols are used in this report. Star symbols denote that the practice passed either the promising practice or the best practice threshold. If the practice did not pass a threshold, it is marked with an x.	
★	The practice passed the best practice threshold.
☆	The practice passed the promising practice threshold but did not surpass the best practice threshold.
×	The practice did not pass any thresholds.

4.1. Practice 1: School vaccination programme in Murcia region (Spain)

Table 4: Practice 1: School vaccination programme in Murcia region (Spain)

School vaccination programme in Murcia region	Spain
	**Governance level**: regional
	**Funding source:** regional funding
	**Vaccine(s) covered**: HPV, meningitis
	**Barriers that can be removed by the practice**: lack of information/awareness; digital skills gap among public; digital skills gap among health professionals; lack of (accessible) information for public; shortages of health care professionals; limited opening hours of vaccination points; contacting hard-to-reach groups.
	**Target group**: children, 11 years of age
	**Approach of the practice**: this is a school programme for HPV and meningococcal vaccines intended to increase vaccination rates. It transfers the adolescent vaccination against HPV and meningococcus (given at age 11) from health centres to schools, thereby promoting accessibility and equity. A letter is sent to the parents telling them about the vaccines and their importance, and requesting their consent to vaccinate their children (minors) in the school environment in their absence. School staff collect the consent letters and forward them to the health centre professionals to schedule the day when the vaccination will be carried out. To increase outreach, information about the vaccination has been translated into several languages including Arabic for the Arabic-speaking population in the region. The practice shows that the administration is no different from any other vaccine performed outside a health centre, but the process before and after requires organisational support. This is set out in a protocol detailing the responsibilities of each participant in the vaccination process, from circulating information to parents, through obtaining consent to administering the vaccine. The protocol also defines the necessary resources, the activities that need to be carried out, and an approximate schedule for the deployment of the campaign.
	**Vaccination journey(s) covered:** ◆ Journey 1 for meningitis: a parent/legal guardian getting their child vaccinated for MMR, meningitis, or polio.

	◆ Journey 2: a parent/legal guardian getting their child/teenager vaccinated for HPV.
	**Reasons for selection**: ◆ Removes barriers for parents struggling with booking systems or the opening hours of vaccination centres. ◆ Vaccines offered at school are easily accessible, and parents are informed directly by school staff thus removing barriers to accessing vaccination information. ◆ Well implemented, clear assessment of key problems and solutions (i.e., hesitancy of parents, lack of (accessible) information about vaccination). ◆ The practice considers the local context – the Arabic-speaking population was identified as a hard-to-reach group in the region and was targeted with information in Arabic to enhance accessibility. ◆ Continuity of care between the health, social, and education sectors in the public domain with a multidisciplinary approach ◆ Collaboration and participation are promoted among all stakeholders including teachers and healthcare professionals, with the appropriate preparation and skills; and parents and children, with easily understood health information, encouraging their empowerment and self-care.

4.2. Practice 2: Mobile vaccination units to increase COVID-19 vaccination uptake (Netherlands)

Table 5: Practice 2: Mobile vaccination units to increase COVID-19 vaccination uptake (Netherlands)

MV units to increase COVID-19 vaccination uptake	Netherlands
	**Governance level**: national and regional
	**Funding source:** national funding
	**Vaccine(s) covered**: COVID-19
	**Barriers that can be removed by the practice**: restricted opening hours at vaccination points; difficulties in contacting hard-to-reach groups, and under-served areas, both rural and urban; digital skills gap among the public; digital skills gap among health professionals; and the lack of (accessible) public information.
	**Target group**: general population (neighbourhoods with low vaccination uptake)

	Approach of the practice: vaccines were offered in vaccination buses on a drop-in basis with no appointment needed. This practice was developed through cooperation between national and regional stakeholders. The buses were centrally procured and coordinated by a national organisation and made available to regions with identified needs. The practice also relied on leaflets, flyers, and posters which were disseminated in the neighbourhood, and personal conversations between local people and health care workers and trusted neighbourhood role models (often in multiple languages and in culturally appropriate ways) to increase knowledge of and trust in vaccination.
	Vaccination journey(s) covered: Journey 3: adult vaccination for COVID-19
	Justification for selection: ◆ Well developed, documented and evidence-driven. Practice has been evaluated and showed its effectiveness. ◆ Useful example for pandemic preparedness.

4.3. Practice 3: Offering the flu vaccine to children in three primary schools (Ireland)

Table 6: Practice 3: Offering the flu vaccine to children in three primary schools (Ireland)

Offering the flu vaccine to children in three primary schools	Ireland
	Governance level: national
	Funding source: national funding
	Vaccine(s) covered: influenza (for children)
	Barriers that can be removed by the practice: shortages of health care professionals; limited opening hours at vaccination points; lack of information accessible to the public
	Target group: children and young people, 2-17 years of age

	Approach of the practice: all children and young people aged 2-17 are eligible for the free HSE nasal flu vaccine in Ireland. It is usually given by GPs or pharmacists; however, vaccination uptake has been very low. To increase uptake, a pilot was launched in three primary schools to administer the vaccine in a school setting. For this pilot, comprehensive information packs (leaflet, consent form, template letters) were circulated among parents by operational community health teams. The teams reviewed the returned documents and the health condition of the children, and then recommended personalised vaccination routes via GP, pharmacy, or the school.
	Vaccination journey(s) covered: Journey 5: an elderly or vulnerable person getting vaccinated for seasonal influenza – *Note: the practice does not directly cover this journey since it focuses on influenza vaccination for children rather than elderly and vulnerable people. However, due to the great interest of health authorities in this practice and flu vaccinations for children, it is included in the final selection.*
	Justification for selection: ◆ Well-designed and effective – the results of the pilot show that vaccination uptake in schools increased significantly compared with uptake outside the school setting. ◆ Includes a description of resources needed to guide future pilots. ◆ Relatively easy to transfer to other settings because the approach is straightforward and could be replicated by many other Member States.

4.4. Practice 4: Su.Pr.Eme (Italy)

Table 7: Practice 4: Su.Pr.Eme (Italy)

Su.Pr.Eme	Italy
	Governance level: regional
	Funding source: national and regional funding
	Vaccine(s) covered: COVID-19
	Barriers that can be removed by the practice: lack of (accessible) information for public; reaching hard-to-reach groups; out-of-pocket payments; digital skills gap among public; digital skills gap among health professionals
	Target group: undeclared migrants, seasonal workers

	Approach of the practice: The Su.Pr.Eme project targets undeclared and seasonal workers from third countries to overcome stigma and address the vulnerability of these migrant workers. Su.Pr.Eme is an integrated action plan to overcome all forms of labour exploitation, marginalisation, and vulnerability among migrant workers. It offered the Apulian Regional Agency for Health and Social Care (AReSS) the opportunity to define and develop a model of health and social care in informal settlements ('ghettos'). In this practice, mobile outpatient units were organised at which health care and vaccinations are provided to workers. It focuses on prevention and health care, as well as health and social status monitoring. The practice is implemented in close collaboration with NGOs which act as the front office, offer guidance, remain in contact with the migrants, and also support GPs.
	Vaccination journey(s) covered: Journey 3: an adult getting vaccinated for COVID-19
	Reason for selection: • Effectively targets a hard-to-reach, vulnerable population group. • Innovative, unique approach in collaboration with NGOs on the ground.

4.5. Practice 5: Communication initiatives including reminder schemes to support childhood immunisation (Denmark)

Table 8: Practice 5: Communication initiatives including reminder schemes to support childhood immunisation (Denmark)

Childhood immunisation/vaccination programme	Denmark
	Governance level: national
	Funding source: national funding
	Vaccine(s) covered: 3 months: diphtheria, tetanus, whooping cough, polio and Hib and pneumococcal disease 5 months: diphtheria, tetanus, whooping cough, polio and Hib and pneumococcal disease

12 months: diphtheria, tetanus, whooping cough, polio and Hib and pneumococcal disease

15 months: MMR: measles, mumps and rubella

4 years: MMR: measles, mumps and rubella

5 years: diphtheria, tetanus, whooping cough, polio booster

12 years: HPV (2 doses)

Barriers that can be removed by the practice: inefficient or ineffective data collection; inefficient/lack of unified immunisation monitoring and information system; lack of (accessible) information for public.

Target group: parents to children aged 3 months to 12 years.

Approach of the practice: this vaccination programme includes a reminder scheme, vaccination ambassadors, communication campaigns, and a research study to demonstrate the effectiveness and outcomes of the practice. In Denmark, all recommended childhood vaccinations are administered free of charge by general practitioners. However, vaccination rates for MMR and diphtheria-tetanus-pertussis-polio have been below 90%, mainly due to parents forgetting the vaccination. Therefore, reminder schemes based on data from civil registries and public health databases have been introduced for all childhood vaccinations.

Through digital reminders, parents are notified when it is time for their child to get vaccinated and again if the vaccination time has passed but their child has not received the vaccination as planned. This practice is based on civil registries and public health databases data, allowing Danish health authorities to monitor vaccination uptake, including the number of vaccinations administered by general practitioners, and the type and number of side effects recorded.

Vaccination ambassadors play a key role in reaching out to local communities through dialogue-based approaches to address concerns about vaccination. Health visitors regularly meet the families and children in their district and built up a strong level of trust. They work with pregnant women and visit new-borns multiple times at home during the first year of life. They meet the children again at kindergarten and school. Health visitors are able to address concerns in a trusting atmosphere and are in a perfect position to bring up the topic of vaccination.

In 2017 the information awareness campaign *Stop HPV: get vaccinated* was launched jointly by the Danish Health Authority, the Danish Cancer Society, and the Danish Medical Association. The initiative was to provide nuanced and evidence-based information about the HPV vaccine and increase immunisation coverage following a decline in uptake. The campaign was extended to include boys in 2019, meaning that boys, like girls, now receive the HPV vaccination free of charge if they were born in the latter half of 2007 or later. The campaign ended in late 2021

	following the successful restoration of HPV immunisation coverage.
	**Vaccination journey(s) covered:** journey 1 for MMR, polio: a parent or legal guardian getting their child vaccinated for MMR, meningitis, or polio. Journey 4: An adult getting a booster vaccine for tetanus – *Note: this journey is not directly covered by the practice, which targets tetanus vaccinations among young children instead of adults. However, it is included because it is the only one of the five selected journeys covering tetanus.*
	**Justification for selection by evaluators**: • Well documented with approach and results shared in academic paper. • Effectiveness and vaccination increase demonstrated in academic paper. • Incudes tetanus and polio which have not been well covered by practices received from other Member States. • Use of database and public health data to systematically organise and implement a vaccination intervention.

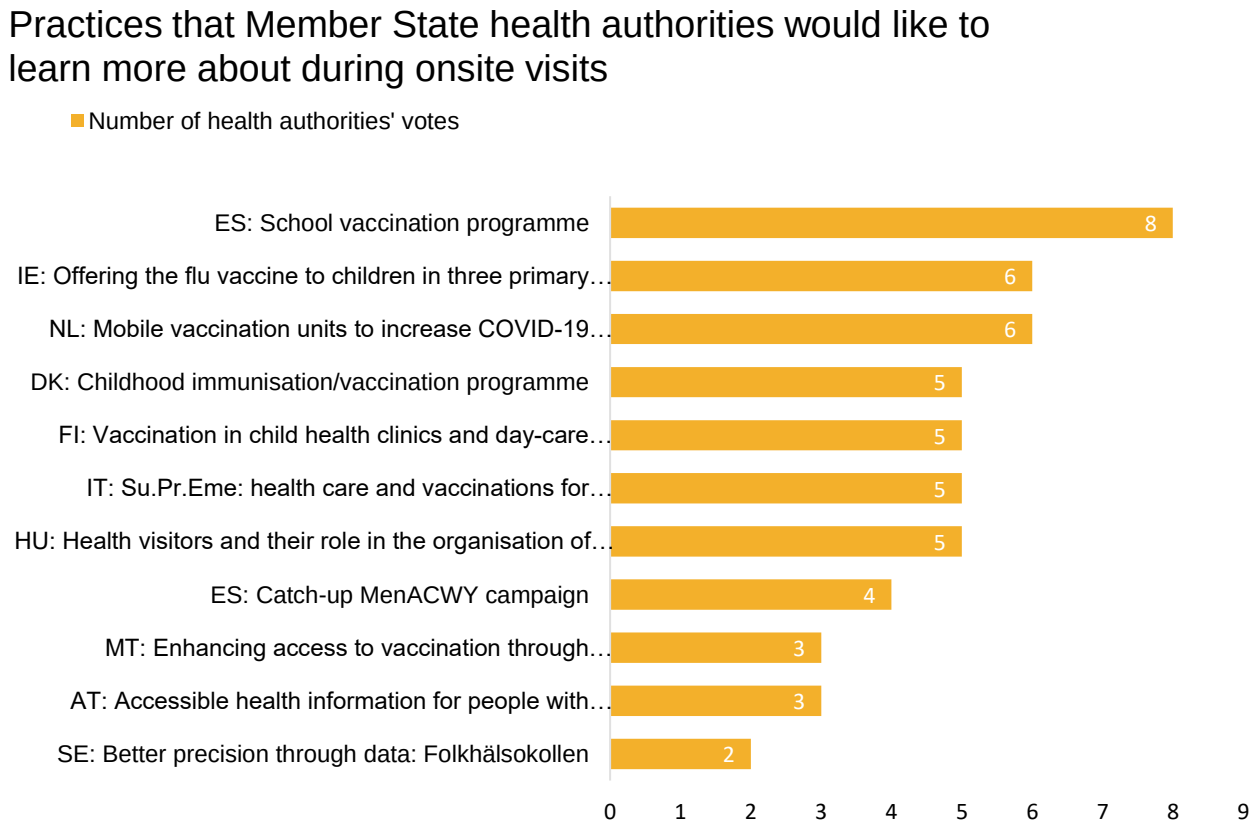
5. Workshop results and analysis

The workshop was aimed at Member State health authorities. Registration and participation rates were overall high, showing interest from the Member States. In total, 44 participants from 22 Member States registered for the workshop (AT, BE, BG, DK, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PT, RO, SE, SI, SK). Of these, 33 participants from 19 Member States attended (AT, BE, DK, EE, ES, FI, FR, HR, IE, HU, LT, LU, LV, MT, NL, RO, SE, SI, SK), achieving relatively good representation.

During the validation workshop with health authorities on 16 February 2023, two polls were launched, asking Member States health authorities about their most pressing barriers to vaccination and the presented practices that they would be most interested in learning more about during an onsite visit (Task 4). Overall, 11 practices from 10 Member States were presented in the workshop. All target mentioned groups (all age groups, children, adolescents, elderly) plus hard-to-reach groups were covered by the 11 practices. All seven vaccinations under the project scope (MMR, meningitis, polio, HPV, tetanus, COVID-19, influenza) were also covered by the 11 practices.

The figure below shows the results of the poll on the practices that health authorities would like to learn about most during the onsite visits. Health authorities could vote for their two top choices. A total of 26 votes were recorded. The most voted for practices came from Spain, Ireland, and the Netherlands. These results are important because they fed into the decision-making process to select the final five practices, confirming buy-in from the Member States. Both the poll results and the scores from the evaluation influenced which practices were selected. The practices with the highest number of votes in the poll were first preliminarily determined as finalists. Cases in which several practices received the same number of votes among the finalists, those practices which had a higher scoring in the evaluation were then selected as the top five. The selected five practices received some of the highest scores in the evaluation, as demonstrated in chapter 4 on the five selected practices and chapter 7 on the practices which were not selected.

Figure 4. Practices that Member State health authorities would like to learn more about during onsite visits



During the workshop, health authorities were also asked which barriers are the most pressing in their countries. Health authorities could select one top choice from a list of 14 administrative, practical, and physical barriers. In total, 23 answers were collected.

The comparison between the poll results and the barriers that can be removed by the five selected practices shows that all of the most pressing barriers identified by health authorities except 'lack of training for health practitioners' (which received only 1 vote) could be removed by the five selected practices. In other words, the needs of Member States can potentially be addressed by the five selected practices. The most pressing needs of Member States are reflected in detail below in the poll results in Figure 5.

below shows the main types of barriers that can be removed by the selected five practices. Each practice can address multiple barriers. Further, all five practices can address the barrier 'lack of (accessible) information for public'.

Figure 5. Most pressing barriers for Member State health authorities

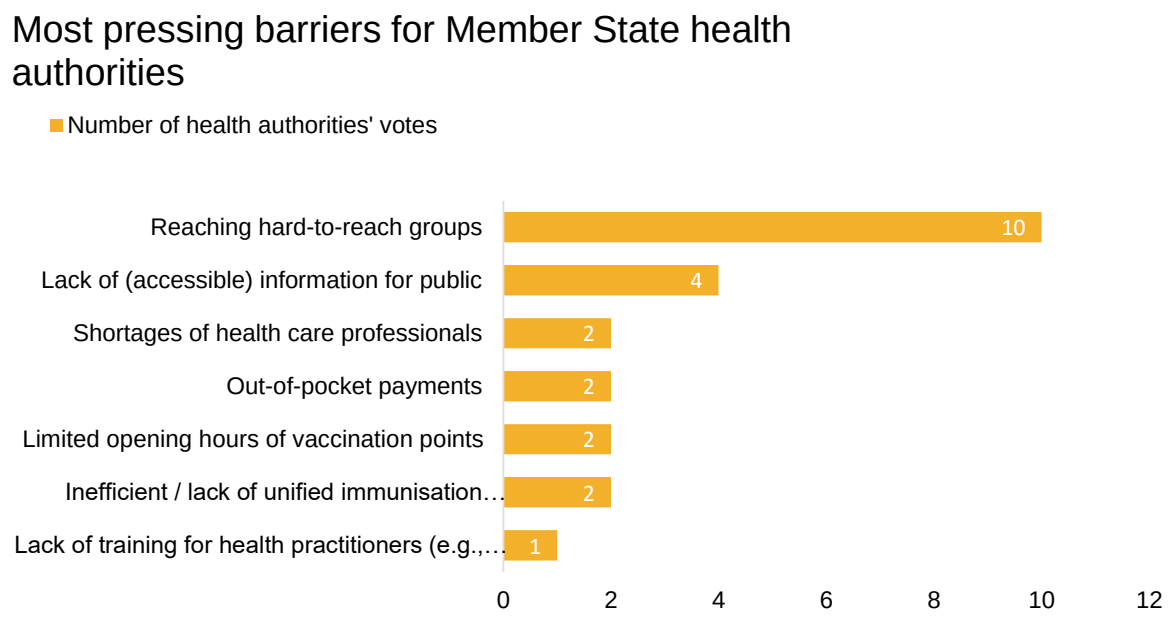
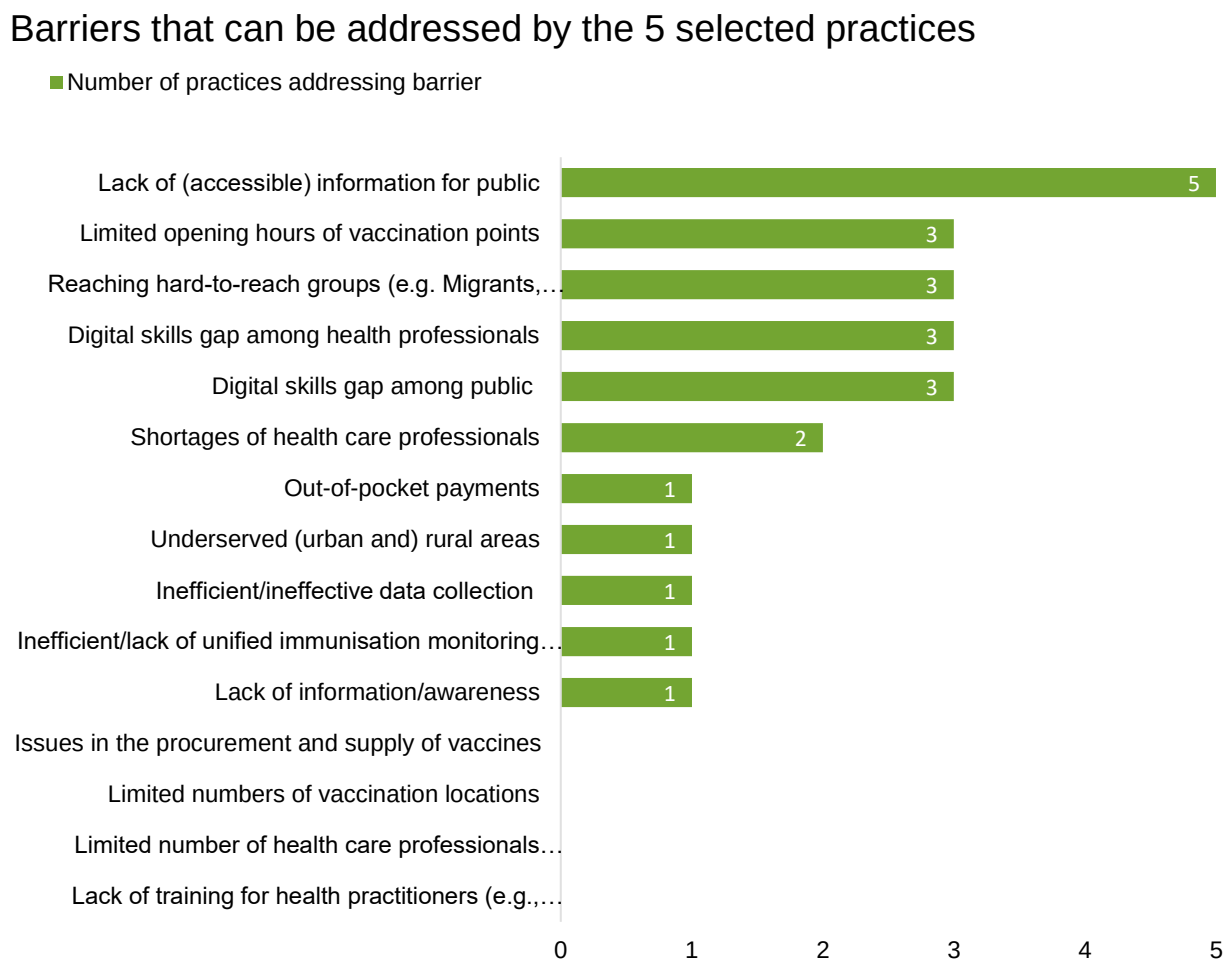


Figure 6. Barriers that can be addressed by the 5 selected practices



6. Implications and next steps for Tasks 4 and 5

Based on the results of Task 3, the next step will be organising the onsite visits (Task 4) aiming at the second quarter of 2023 for these to happen. The health authorities that will be hosting the onsite visits have been informed on 2 March 2023 and will now be fully supported by the project team in organising the visit.

While engagement by health authorities who submitted practices was relatively high so far, it is of crucial importance to keep the momentum. Therefore, the health authorities whose submitted practices have not been selected will be immediately informed individually. At the same time, they will also be given the opportunity to participate in a peer clinic to discuss their practice with colleagues following a similar approach and be invited to join the study visits.

In addition, in view of reengaging some of the health authorities who committed during the proposal stage, the project team will be reaching out more broadly again with timely save-the-dates, tailored invitations to the onsite visits, the upcoming newsletter and updated information on the website to secure interest in the participation in the onsite visits and the pilots (Task 5). However, considering that health authorities have generally signalled that they are struggling with capacity, it can be expected that attendance of the onsite visits (five visits during a period of three to four months) may be lower than initially foreseen. It is not expected that this will impact on the piloting phase, as the health authorities who are more engaged are signalling their interest in piloting a practice.

7. Practices which were not selected

This chapter provides a brief overview of the 19 practices which were not selected, justifications why they were not selected, and their quantitative scores. Practices whose titles are marked with an asterisk (*****) were candidates in the pre-final selection and presented during the validation workshop with health authorities on 16 February 2023.

The practices highlighted in **blue** could potentially be included in the onsite visits that will be arranged for the five selected practices, as they are in the same country or region as one of the five selected practices. As foreseen, these practices will be included as remarkable in the onsite visits ensuring that participants benefit from a wider learning and capacity building experience. It is to be noted, that the practices in blue also performed well in the evaluation and passed the necessary thresholds, as demonstrated below.

Table 9. Practices which were not selected

Practice title	Country	Justification	Total score	Exclusion criteria	Core criteria	Qualifier criteria
Catch-up MenACWY campaign *	Spain	This practice performed very well both in the quantitative and qualitative assessment. The total score of the practice was the second highest of all evaluated practices, making it a good candidate. By contrast, the practice did not rank among the top choices in the polls conducted with health authorities during the validation workshop which is why it is not in the final selection. However, a study visit will be arranged in Murcia, Spain, to present Practice 1 of the five selected practices. As the 'Catch-up MenACWY campaign' is also from Murcia, Spain, there is a possibility to include this practice in the onsite visit.	247 ★	108 ★	57 ☆	82 ★
Mass vaccination of the population in Ireland with COVID-19 primary course vaccinations and overcoming the physical obstacles to successful vaccination	Ireland	While an interesting, well-documented practice, there are already similar practices in the final selection which are better examples and provide more added value. However, the practice performed well in the evaluation and could enrich the mutual learning experience of health authorities. Therefore, there is a possibility to	188 ☆	82 ★	47 ☆	59 ☆

Practice title	Country	Justification	Total score	Exclusion criteria	Core criteria	Qualifier criteria
		include this practice in the onsite visit which will be arranged for selected Practice 3.				
Accessible health information for deaf people in Vienna *	Austria	While the practice performed well in the evaluation, it was not selected among the top choices by health authorities during the validation workshop.	229 ★	87 ★	60 ★	82 ★
Enhancing access to vaccination through community centres and private practices *	Malta	While an interesting practice that is well documented, it was not selected among the top choices by health authorities during the validation workshop.	224 ★	88 ★	54 ☆	82 ★
Vaccination of children in child health clinics and day-care centres *	Finland	The practice is interesting and was relatively popular among health authorities in the poll during the validation workshop. It, however, shares some similarities with the selected Irish practice (offering the flu vaccine to children in three primary schools). Further, the practice was implemented in a remote region in Finland, which would make organising an onsite visit challenging. Finally, the practice scored lower than the other selected practices in the quantitative evaluation.	210 ★	93 ★	62 ★	55 ☆
Health visitors and their role in the organisation of routine childhood vaccinations *	Hungary	The practice is interesting and was relatively popular among health authorities in the poll during the validation workshop, it scored lower than the other selected practices in the quantitative evaluation. Further, the practice could be difficult to transfer to other settings, since it is strongly embedded in the Hungarian legislation. Finally, the practice did not reach the promising practice threshold for the core criteria.	175 ☆	85 ★	21 ✕	69 ★

Practice title	Country	Justification	Total score	Exclusion criteria	Core criteria	Qualifier criteria
Better precision through data: Folkhälsokollen *	Sweden	This practice received the highest scoring in the evaluation, making it a best practice. However, this practice received the least number of votes by health authorities in the poll during the validation workshop. A reason for this could be that the data analytics-focused approach of the practice may be difficult to transfer to other settings and possibly deterred some health authorities.	253 ★	114 ★	60 ★	79 ★
Deployment of the Spanish COVID vaccination strategy in Murcia region	Spain	While an interesting strategy, there are other approaches in the selection which are similar but are better examples. Since there are also already two practices from Murcia region (Spain) in the selection, this practice was not included to avoid overrepresentation and bias. It could nevertheless be touched upon during the onsite visit to Murcia.	147 ✕	71 ✕	45 ✕	31 ✕
Promotion of vaccination against measles, mumps and rubella (MMR)	Lithuania	As this practice targets confidence barriers, and includes elements undertaken also in other countries in similar ways, this practice was not taken forward.	121 ✕	57 ✕	28 ✕	36 ✕
HPV vaccination experiment in Grand Est area	France	A lack of information in the practice submission could not be filled. This makes the practice difficult to present in an onsite visit and reproduce in a pilot. HPV is already covered well by other practices.	91 ✕	48 ✕	11 ✕	32 ✕
Several best practices on COVID-19 vaccination	France	This is a whole COVID-19 pandemic vaccination programme. There is a lack of information of the different individual actions which could not be retrieved despite an interview with health authorities. Also, many of the practices are no longer used and it is not foreseen to pursue them in any way due to lack of funds or no clear cost/benefit.	83 ✕	42 ✕	11 ✕	30 ✕

Practice title	Country	Justification	Total score	Exclusion criteria	Core criteria	Qualifier criteria
Pop-up COVID vaccination centres in Eure-et-Loire, France	France	The practice lacks some more detailed information, which could not be retrieved despite an interview with the national health authorities. The practice only ran during the pandemic and is not implemented anymore. It is also similar to other practices and does not provide innovation or added value compared to other practices.	144 ✕	85 ★	20 ✕	39 ✕
Mobile vaccination teams for vaccination in the homes of immobile, less mobile people in the City of Zagreb by the Croatian Institute of Public Health	Croatia	Although it is an interesting practice, there is no evidence of unique elements that make this practice different from those in other Member States. Hence, transferring this practice will be difficult since it does not offer a new approach that other Member States have not tried yet.	76 ✕	44 ✕	9 ✕	23 ✕
Vaccination in buses as an example of good practice in overcoming physical obstacles in vaccination	Croatia	While the practice is interesting for vaccination in remote/rural areas, there are other examples of vaccination buses in the selection which are better documented, showing evidence of effectiveness (e.g. Netherlands). By contrast, the vaccination bus practice has shown very limited effectiveness and increase in vaccination rates in Croatia. Due to this, the practice has been discontinued and therefore was not selected in the evaluation.	52 ✕	24 ✕	12 ✕	16 ✕
Supporting school health care providers in providing education info about vaccines and diseases they prevent with a special focus on HPV vaccination	Estonia	The practice has not been implemented yet. It is a planned pilot for the future and, hence, was not evaluated.	0 ✕	0 ✕	0 ✕	0 ✕
The efforts of Slovenian Society of Primary Care	Slovenia	The practice has limited relevance as it addresses vaccine hesitancy through a communication strategy	78 ✕	24 ✕	32 ✕	22 ✕

Practice title	Country	Justification	Total score	Exclusion criteria	Core criteria	Qualifier criteria
Paediatricians to increase vaccination coverage in Slovenia		involving school doctors, primary care paediatricians, and the Slovenian Ministry of Health. There is also a lack of documentation on the practice which limits its transferability significantly.				
Functional and geographical capillarity access of vaccination	Portugal	The practice is a relatively common vaccination programme, which offers only limited added value compared to other practices. While efforts were made to conduct an interview with the relevant health authority to fill information gaps, these could not be filled.	104 ✕	45 ✕	24 ✕	35 ✕
Social mobilisation for the implementation of micro-influencers	Portugal	While the practice is an innovative approach, it rather tackles confidence than convenience barriers.	106 ✕	50 ✕	11 ✕	45 ✕
Clinical guidance to substitute the need of medical prescription for access to vaccination	Portugal	While an interesting practice that had potential for further exploration, no complementary information could be collected through an interview with the relevant health authority. Hence, limited detail and evidence prevents taking this practice further for onsite visits or piloting.	50 ✕	26 ✕	3 ✕	21 ✕

8. Annexes

8.1. Annex I: Evaluation forms

The excel file containing all evaluation forms is attached separately.

The labelling of the practices in the evaluation forms includes their identification number in the Best Practice Portal[4] and corresponds to the practice titles as follows:

Table 10. Practice labelling scheme

ID in evaluation form	Practice title
1. Ireland 2198	Mass vaccination of the population in Ireland with COVID-19 primary course vaccinations and overcoming the physical obstacles to successful vaccination
2. Estonia 2180	Supporting school health care providers in providing education info about vaccines and diseases they prevent with a special focus on HPV vaccination
3. France 2192	HPV vaccination experiment in Grand Est area
4. Croatia 2195	Mobile vaccination teams for vaccination in the homes of immobile, less mobile people in the City of Zagreb by the Croatian Institute of Public Health
5. Sweden 2194	Better precision through data: Folkhälsokollen
6. Spain 2146	Catch-up MenACWY campaign
7. Spain 2189	School vaccination programme in Murcia region
8. Spain 2191	Deployment of the Spanish COVID vaccination strategy in Murcia region
9. Austria 2178	Accessible health information for deaf people in Vienna
10. Finland 2171	Vaccination of children in child health clinics and day-care centres
11. Denmark 2190	Communication initiatives including reminder schemes to support childhood immunisation
12. Italy 2185	Su.Pr.Eme
13. Malta 2162	Enhancing access to vaccination through community centres and private practices
14. Croatia 2163	Vaccination in buses as an example of good practice in overcoming physical obstacles to vaccination
15. Hungary 2183	Health visitors and their role in the organisation of routine childhood vaccinations
16. Slovenia 2166	The efforts of Slovenian Society of Primary Care Paediatricians to increase vaccination coverage in Slovenia

[4] https://webgate.ec.europa.eu/dyna/bp-portal/

ID in evaluation form	Practice title
17. Lithuania 2177	Promotion of vaccination against measles, mumps and rubella (MMR)
18. France 2158	Several best practices on COVID-19 vaccination
19. France 2203	Pop-up COVID vaccination centres in Eure-et-Loire, France
20. Netherlands 2204	Mobile vaccination units to increase COVID-19 vaccination uptake
21. Ireland 2176	Offering the flu vaccine to children in three primary schools
22. Portugal 2209	Functional and geographical capillarity access of vaccination
23. Portugal 2210	Social mobilisation for the implementation of micro-influencers
24. Portugal 2211	Clinical guidance to substitute the need of medical prescription for access to vaccination

8.2. Annex II: Validation workshop agenda

The validation workshop agenda was as follows:

Table 11. Validation workshop agenda

Time	Activity	Speakers
10:00 – 10:05	Welcome	Kantar Public
10:05 – 10:10	Opening remarks	HaDEA, Kantar Public
10:10 – 10:13	Presentation of the evaluators and rapporteurs	Kantar Public
10:13 – 10: 16	Presentation of the evaluation approach	Kantar Public
10:16 – 10:26	Presentation of the identified barriers and poll on barriers	Kantar Public
10:26 – 10:31	Presentation 1: Offering the flu vaccine to children in three primary schools, **Ireland**	Kantar Public
10:31 – 10:36	Presentation 2: Health visitors and their role in the organisation of routine childhood vaccinations, **Hungary**	Kantar Public
10:36 – 10:41	Presentation 3: Institutional communication strategy of Puglia region, **Italy**	Kantar Public
10:41 – 10:46	Presentation 4: Scholar vaccination programme in Murcia region, **Spain**	Kantar Public
10:46 – 10:52	Q&A	Kantar Public (moderation), health authorities (discussion)
10:52 – 10: 57	Presentation 4: Better precision through data: Folkhälsokollen, **Sweden**	Kantar Public

Time	Activity	Speakers
10:57 – 11:02	Presentation 5: Vaccination of children in child health clinics and day-care centres, **Finland**	Kantar Public
11:02 – 11:07	Presentation 6: Catch-up MenACWY campaign in Murcia region, **Spain**	Kantar Public
11:07 – 11:14	Q&A	Kantar Public (moderation), health authorities (discussion)
11:14 – 11:20	BREAK	Kantar Public
11:20 – 11:25	Presentation 7: Accessible health information for deaf people in Vienna, **Austria**	Kantar Public
11:25 – 11:30	Presentation 8: Enhancing access to vaccination through vaccination from community centres and private practices, **Malta**	Kantar Public
11:30 – 11:35	Presentation 9: Mobile vaccination units to increase COVID-19 vaccination uptake, **Netherlands**	Kantar Public
11:35 – 11:40	Presentation 10: Communication initiatives including reminder schemes to support childhood immunisation	Kantar Public
11:40 – 11:47	Q&A	Kantar Public (moderation), health authorities (discussion)
11:47 – 11:55	Poll on presented practices	Kantar Public
11:55 – 12:00	Closing remarks	Kantar Public

Practice 1: School vaccination programme in Murcia region (Spain)

The school vaccination programme in the region of Murcia, Spain, aims at countering low vaccination rates for HPV and meningitis. To promote accessibility and equity, the role to carry out vaccinations is transferred from health centres to schools, and an information letter and consent form is circulated to children's parents. A version in Arabic is also provided for the Arabic-speaking community of Murcia. In bringing vaccination straight to schools, the practice removes barriers for parents struggling with booking systems or health centres opening hours and provides easy access and clear information on vaccination opportunities. Through its good implementation, the practice provides solutions to key challenges.

School vaccination programme in Murcia region	Spain
	**Governance level**: Regional
	**Funding source:** Regional funding
	**Vaccine(s) covered**: HPV, meningitis
	**Barriers that can be removed by the practice**: Lack of information/awareness; Digital skills gap among public; Digital skills gap among health professionals; Lack of (accessible) information for public; Shortages of health care professionals; Limited opening hours of vaccination points; Reaching hard-to-reach groups.
	**Target group**: Children, 11 years of age
	**Approach of the practice**: The practice is a school programme for HPV and meningococcal vaccines countering low vaccination rates. It transfers the adolescent (11-year-old) vaccination against HPV and meningococcus from health centres to schools, thereby promoting accessibility and equity. A letter is sent to the parents informing them about the vaccines and their importance and requesting authorisation to vaccinate their children (minors) in the school environment. School staff collect consent or refusing letters for the school vaccination and provide them to the health centre professionals in order to schedule the day when the vaccination will be carried out. To reach the Arabic-speaking population in the

region, the authorisation letter was translated to Arabic to facilitate access to information.

The practice indicates that the administration is not different from any other vaccine performed outside the health centre, but the process before and after requires support for the organisation that is determined in a protocol. This protocol details the responsibilities of each participant in the vaccination, starting from information dissemination to parents, to consent retrieval, and finally vaccine administration. The protocol also defines the necessary resources, the activities that need to be carried out, and an approximate schedule for the deployment of the campaign.

Vaccination journey(s) covered:

- Journey 1 for meningitis: A parent/legal guardian getting their child vaccinated for MMR, meningitis, or polio.
- Journey 2: A parent/legal guardian getting their child/teenager vaccinated for HPV.

Justification for selection:

- Removes barriers for parents struggling with booking systems or opening hours of vaccination centres.
- Vaccines offered at school are easily accessible, and parents are informed directly by school staff thus removing barriers relating to accessing vaccination information.
- Well implemented, clear assessment of key problems and solutions (i.e. hesitancy of parents, lack of (accessible) information about vaccination).
- The practice considers the local context – the Arabic-speaking population was identified as a hard-to-reach group in the region and targeted with information in Arabic to enhance accessibility.

Practice 2: Mobile vaccination units to increase COVID-19 vaccination uptake (Netherlands)

In the context of the COVID-19 vaccination, the Netherlands launched a national-level initiative. Vaccination buses were coordinated by a national organisation and made available regionally. Locals were informed via flyers, leaflets, and posters in multiple languages, and they were able to drop-in without having to book an appointment. In so doing, barriers such as lack of a nearby vaccination centre, limited opening hours, and challenges in access to information, were addressed. This practice provides a good example for evidence-driven pandemic preparedness.

Mobile vaccination units to increase COVID-19 vaccination uptake	Netherlands
	**Governance level**: National
	**Funding source:** National funding
	**Vaccine(s) covered**: COVID-19
	**Barriers that can be removed by the practice**: Limited opening hours of vaccination points; reaching hard-to-reach groups; underserved (urban and) rural areas; digital skills gap among public; digital skills gap among health professionals; and lack of (accessible) information for public.
	**Target group**: General population (neighbourhoods with low vaccination uptake)

	**Approach of the practice**: Vaccines were offered in vaccination buses on a drop-in basis with no appointment needed. This practice was a cooperation between national and regional stakeholders. The buses were centrally procured and coordinated by a national organisation and made available to regions with identified needs. The practice also relied on leaflets, flyers, posters which were disseminated in the neighbourhood, and personal conversations of locals with health care workers and trusted role models from the neighbourhood (often in multiple languages and taking into consideration cultural appropriateness) to increase vaccination knowledge and trust in vaccination.
	**Vaccination journey(s) covered:** Journey 3: An adult getting vaccinated for COVID-19
	**Justification for selection**: ◆ Well-developed, documented and evidence driven. Practice has been evaluated, showing its effectiveness. ◆ Useful example for pandemic preparedness.

Overcoming Obstacles to Vaccination

Funded by the European Union

Practice 3: Offering the flu vaccine to children in three primary schools (Ireland)

In Ireland, children from 2 to 17 are eligible to the flu vaccine from HSE for free. Despite this, the vaccine uptake has been low. To address this and increase vaccination, a pilot campaign was launched in primary schools to administer the doses in a school setting rather than at the GP's practice or at the pharmacy. This was based on personalised vaccination advice after information was provided to the parents and their consent had been obtained. This practice showed excellent results by significantly increasing the uptake, and its efficient design is easily transferrable to other settings.

Offering the flu vaccine to children in three primary schools	Ireland
	**Governance level**: National
	**Funding source:** National funding
	**Vaccine(s) covered**: Influenza (for children)
	**Barriers that can be removed by the practice**: Shortages of health care professionals; Limited opening hours of vaccination points; Lack of (accessible) information for public
	**Target group**: Children and youth, 2-17 years of age
	**Approach of the practice**: All children and youth aged 2-17 are eligible for the free HSE nasal flu vaccine in Ireland. It is usually given by GPs or pharmacists; however, vaccination uptake has been very low. To increase the vaccination uptake, a pilot was launched in three primary schools to administer the vaccine in a school setting. For this pilot, comprehensive information packs (leaflet, consent form, template letters) were circulated among parents by community health operational teams. The teams reviewed the returned documents, the health condition of the children, and then recommended personalised vaccination routes via GP, pharmacy, or the school.

Vaccination journey(s) covered:

Journey 5: An elderly or vulnerable person getting vaccinated for seasonal influenza – *Note: The practice does not directly cover this journey since it focuses on influenza vaccination for children instead of elderly and vulnerable people. However, due to high interest from health authorities in this practice and flu vaccinations for children, it is included in the final selection.*

Justification for selection:

- Well-designed and effective – the results of the pilot show that the vaccination uptake in schools had increased significantly compared to the vaccination uptake outside the school setting.
- Includes a description of resources needed to guide future pilots.
- Relatively easy to transfer to other settings because the approach is straightforward and could be replicated by many other Member States.

Overcoming Obstacles to Vaccination

Funded by the European Union

Practice 4: Su.Pr.Eme (Italy)

In Italy, the Su.Pr.Eme project aims at safeguarding the rights of undeclared and/or seasonal migrant workers from third countries. Covering aspects as varied as labour exploitation and marginalisation of migrant workers, Su.Pr.Eme also integrates a health and social care component, providing migrants with the necessary treatments directly within their settlements. By making available mobile outpatient units to migrant workers in situations of vulnerability, this practice provides an innovative approach to vaccination of hard-to-reach groups.

Su.Pr.Eme	Italy
	Governance level: Regional
	Funding source: National and Regional funding
	Vaccine(s) covered: COVID-19
	Barriers that can be removed by the practice: Lack of (accessible) information for public; Reaching hard-to-reach groups; Out-of-pocket payments; Digital skills gap among public; Digital skills gap among health professionals
	Target group: Undeclared migrants, seasonal workers
	Approach of the practice: The Su.Pr.Eme project targets undeclared, seasonal workers from third countries, also to overcome stigmas and address the vulnerability of these migrant workers. Su.Pr. Eme comprises an integrated action plan to overcome all forms of labour exploitation, marginalisation, and vulnerability of migrant workers. It offered the Apulian Regional Agency for Health and Social (A.Re.S.S) the opportunity to define and develop a model of health and social care in informal settlements (’ghettos’). In this practice, mobile outpatient units were organised where health care and vaccinations were provided to the workers. It focuses on prevention and health care, as well as health and social status monitoring. The practice is implemented in close collaboration with NGOs which are the front office, offer orientation, and remain in contact with the migrants, and also support GPs.

Vaccination journey(s) covered:

Journey 3: An adult getting vaccinated for COVID-19

Justification for selection:

- Effectively reaches a hard-to-reach, vulnerable population group.
- Innovative, unique approach in collaboration with NGOs on the ground.

Practice 5: Childhood immunisation/vaccination programme (Denmark)

In Denmark, despite vaccination being available freely through GPs, the vaccination rates for MMR and diphtheria-tetanus-pertussis-polio have been below 90%. To address this low intake, the childhood immunisation/vaccination programme encompasses a reminder scheme, as well as a research study to evaluate the outcomes of the practice. Through digital reminders, this initiative reminds parents of upcoming or past vaccination dates and allows the health authorities to monitor vaccine uptake. In so doing, the practice efficiently answers challenges such as inefficient data collection, lack of vaccination monitoring, and lack of accessible public information. This evidence-based approach provides a systemic approach to vaccination implementation and monitoring.

Childhood immunisation/vaccination programme	Denmark
	Governance level: National
	Funding source: National funding
	Vaccine(s) covered: MMR, tetanus, polio
	Barriers that can be removed by the practice: Inefficient/ineffective data collection; Inefficient/lack of unified immunisation monitoring and information system; Lack of (accessible) information for public
	Target group: Children between 2 and 6,5 years of age
	Approach of the practice: This vaccination programme includes a reminder scheme and a research study to demonstrate the effectiveness and outcomes of the practice. In Denmark, all recommended childhood vaccinations are administered free of charge by the general practitioners. However, vaccination rates for MMR and diphtheria-tetanus-pertussis-polio have been below 90%, mainly due to parents forgetting the vaccination. Therefore, reminder schemes based on data from civil registries and public health databases were implemented for MMR and diphtheria-tetanus-pertussis-polio vaccinations.

	Through digital reminders, parents were notified when it is time for their child to get vaccinated and when the vaccination time has passed but their child has not received vaccination as planned. This practice allows Danish health authorities to monitor the vaccination uptake, including the number of vaccinations administered by general practitioners, the type and number of side effects recorded.
	**Vaccination journey(s) covered:** Journey 1 for MMR, polio: A parent/legal guardian getting their child vaccinated for MMR, meningitis, or polio. Journey 4: An adult getting a booster vaccine for tetanus – *Note: This journey is not directly covered be the practice since it targets tetanus vaccinations among young children instead of adults. However, it is included because it is the only practice covering tetanus among the five selected practices.*
	**Justification for selection**: ◆ Well documented, with approach and results shared in academic paper. ◆ Effectiveness and vaccination increase demonstrated in academic paper. ◆ Covers tetanus and polio which have not been well covered by practices received from other Member States ◆ Use of database and public health data to systematically organise and implement a vaccination intervention.

Mapping barriers to vaccination services

New research conducted by the *'Overcoming Obstacles to Vaccination'* project reveals the key barriers faced by EU citizens when it comes to vaccination. Key barriers identified include administrative and practical steps needed to get vaccinated and availability of Health Care Practitioners (HCP). Find out more about the latest project research.

Introduction:

Recent decline in vaccination coverage across EU Member States has resulted in new outbreaks of vaccine-preventable diseases. The COVID-19 pandemic further complicated this situation, presenting challenges to the continuity of routine vaccination programmes.

To increase vaccination rates, the role of 'convenience' factors in vaccination journeys, encompassing systemic elements supporting vaccination services, is crucial. While confidence and complacency factors focus on individual behaviours and attitudes toward vaccination, convenience factors, involving physical, practical, and administrative aspects, assess the patient-friendliness of available vaccination services in facilitating uptake. The *'Overcoming Obstacles to Vaccination'* project specifically investigated administrative, practical, and physical obstacles to vaccination.

Under Task 1 *'Mapping of vaccination services in all EU Member States to identify obstacles to vaccination'* the project team worked with healthcare authorities and experts to identify barriers which citizens face to access vaccine schemes. Country-level research was carried out by national experts with relevant expertise in vaccination, immunology, health, and social research. These experts conducted literature and desk reviews using national sources and interviewed relevant health authorities, as well as interviews based on whether the country had regionalised or centralised vaccination governance.

Main findings:

- **Governance:** Vaccination programs differ among Member States, with most adopting national programs that provide standardised guidelines and schedules. The level of centralisation varies significantly between states, leading to differing competencies and variations in the design and implementation of vaccination programs in decentralised systems.
- **Provision of vaccination services:** General practitioners (GPs) are the main communicators of vaccination services. The most common booking system in place is telephone to the GP or relevant healthcare centre. However, COVID-19 led to the introduction and increase in the use of electronic booking as well as monitoring systems.
- **Financing:** Childhood vaccinations (i.e., Measles, Mumps and Rubella (MMR), Poliomyelitis, Meningococcal C (MenC/MenACWY) and Human Papillomaviruses (HPV)) for recommended groups are mostly free either at the point of delivery or through reimbursement. Similarly, adult vaccinations (i.e., seasonal influenza and COVID-19) are generally free for recommended groups, although some Member States may require out-of-pocket payments.
- **Physical, practical, and administrative barriers to vaccination:** The most common barriers identified relate to the administrative and practical steps needed to get vaccinated (e.g. monitoring systems, administrative steps for citizens), followed by availability of Health Care Practitioners (HCP), outreach of vaccination services (e.g., information and awareness to the public) and convenience of vaccination services (e.g., opening hours of vaccination services).
- **Enabling practices identified:** Public information campaigns are commonly implemented in most Member States to overcome outreach barriers related to the lack of knowledge of vaccines.

Governance and monitoring of vaccination programmes

In recent decades there has been a shift towards more digitalised monitoring systems which was accelerated by the COVID-19 pandemic. This has led to the implementation of large-scale programmes facilitating the

collection of information. Vaccination monitoring systems in Member States are transitioning towards more digitalised and efficient methods. This has facilitated the monitoring of real-time vaccination coverage data, access to data to track patients' vaccination journeys, and ability for citizens to check their vaccination status.

Provision of vaccination services

Mapping of vaccination services entailed identifying every step of a citizen's vaccination journey: the outreach methods used by healthcare services to notify citizens about their scheduled vaccinations, pre-administration requirements (e.g. whether a medical prescription is needed), booking procedures (e.g. appointment booked through their general practitioner or online), travel distance to the vaccination venue, and the cost if any of the vaccine and its administration.

Vaccination journeys begin when citizens are informed and reminded about their vaccination schedules. Health authorities across the EU implement different strategies to invite citizens to get their required vaccinations. These include:

- National communication campaigns to raise awareness of vaccination programmes and visual media (e.g. pamphlets and posters) at vaccine administration locations, such as well-baby clinics, hospitals, GP surgeries, etc. and digital channels (e.g. informational websites, media outlets, dedicated COVID-19 websites, etc) in response to outreach barriers such as, low levels of knowledge surrounding vaccines and vaccination programmes.
- Direct invitations by health authorities to get vaccinated, or to bring children to get vaccinated are sent digitally (through online patient platforms, SMS reminders, emails) or via paper-based channels, such as invitation letters, informational pamphlets sent to parents to overcome administrative monitoring tools within vaccination services (i.e., unified immunisation database system).

Prior to the vaccine administration, some vaccinations require prescriptions and/or parental consent, as is the case of childhood and adolescent vaccinations.

Many Member States have an electronic booking system for vaccination appointments. However, there are differences in the design and implementation of the electronic systems, especially in countries where the health system is regionalised.

COVID-19 prompted the implementation of electronic booking and monitoring systems in areas where they were previously absent. Despite variations in booking options based on vaccine types, a diverse range of choices was offered for COVID-19 vaccines to maximise uptake in a short time span. Opt-out alternatives, though less common than opt-in, have proven effective in addressing the digital gap faced by elderly and hard-to-reach groups. Similarly, school vaccinations follow an opt-out model, streamlining the process for children and their parents.

Healthcare professionals (HCPs) in the EU play a crucial role in the vaccination process, contributing through their accessibility and involvement in appointment reminders and the dissemination of reliable vaccine information. GPs and paediatricians are typically the only professionals authorised to administer vaccines in most countries, with some exceptions allowing nurses to also perform this role. During the pandemic, several countries expanded the pool of healthcare professionals authorised to administer vaccines to meet the increased demand for vaccinators. For example, in countries, where pharmacies did not play a large role in vaccination, pharmacies simplified access to vaccinations against seasonal influenza and COVID-19.

Financing

Adult vaccinations are generally free for recommended groups, although some countries may require out-of-pocket payments. Similarly, childhood vaccinations for recommended groups are mostly free either at the point of delivery or through reimbursement. Financing of the MenC vaccine varies in Europe, as its inclusion in vaccination programs depends on the prevalence of disease outbreaks.

Barriers to vaccination

Barriers to vaccination were clustered into seven categories (administrative or practical steps to get vaccinated; availability of HCPs; outreach of vaccination services; convenience of vaccination services; financial requirements of vaccine services; geographical proximity of vaccination services; supply of vaccines) englobing the main issues identified along the vaccination journey. In each cluster the team identified sub-barriers which prevent access to vaccination and range from administrative and practical steps for citizens or HCPs to availability and supply of vaccines, opening hours of vaccination services and ease of booking.

Identified barriers vary across vaccination journeys, impacting target groups or vaccines. Childhood and adolescent vaccination journeys are primarily hindered by financial obstacles, alongside a noted lack of public knowledge for example about the Human Papillomavirus (HPV) vaccine. For adult vaccinations, the main barrier is related to insufficient knowledge, for example on tetanus and COVID-19 vaccination, whilst financial barriers are an obstacle for receiving the seasonal influenza vaccine.

Administrative and practical barriers pose the primary obstacle in vaccination journeys across most Member States, including varying reporting systems hindering national data sharing and time-consuming administrative steps for healthcare professionals. Additionally, numerous Member States face outreach barriers tied to insufficient public knowledge and medical literacy, with a shortage of HCPs being seen as the main issue across Member States. Furthermore, a lack of convenience in vaccination services is noted in many Member States, while others report barriers related to geographical proximity, financial obstacles (e.g. transport costs, loss of earnings for individuals or financial costs of the provisions of vaccines for health authorities) and in some Member States, experts identified hurdles related to vaccine availability and supply.

Enabling practices identified and preliminary recommendations

Health authorities have implemented a range of practices to reduce physical and administrative barriers. Addressing system-related barriers involves multiple aspects and includes various actions taken at national level. These actions include:

- Design and roll-out of a public information campaign
- Translation of information for hard-to-reach groups
- Specific training for HCPs
- Introduction of electronic monitoring systems
- Bringing vaccination directly to the public via different initiatives
- Increasing the number of specialists authorised to vaccinate

Related to these practices, country experts have provided some preliminary recommendations based on interviews with national health authorities and literature review. These include:

- Creation and design of information campaigns
- Training HCPs in vaccination communication
- Public health education
- Introduction and roll-out of a reminder system for the public
- Introduction of mobile vaccination venues

Conclusion

This study highlights the importance of addressing barriers to vaccination with a focus on systemic elements supporting vaccination services and provides a comprehensive understanding of the obstacles faced by citizens across Member States. The findings emphasise the importance of 'convenience' factors in vaccination journeys, and the need for targeted efforts to enhance patient-friendliness of vaccination services to improve uptake.

Overcoming Obstacles to Vaccination: Key Insights from EU-Wide Surveys

Introduction:

Vaccination is one of the most effective tools in public health, yet disparities in vaccine uptake persist across the EU. These disparities are often driven by a complex interplay of behavioural, social, and systemic factors. Under Task 2 “Assessment of obstacles to vaccination” two large-scale surveys were conducted across all 27 EU Member States: one targeting the general population and another focused on healthcare professionals. These surveys aimed to capture both individual-level and system-level determinants of vaccine uptake.

Together, these surveys provide a rich evidence base for understanding the multifaceted nature of vaccine uptake in the EU. Key findings, and policy implications derived from the data, offer a roadmap for improving vaccination coverage and equity across Member States.

Methodology

General Population Survey

The general population survey collected responses from **25,889 individuals aged 16 and above**. Sampling was stratified by gender, age, and region to ensure national representativeness. The survey was conducted online to reduce social desirability bias, especially for questions related to attitudes and personal vaccination status.

The questionnaire was structured around the World Health Organization’s **Behavioural and Social Drivers (BeSD)** framework, which identifies four domains influencing vaccine uptake:

- **Thinking and Feeling**: Cognitive and emotional responses to vaccines and vaccine-preventable diseases.
- **Social Processes**: Influence of social norms and recommendations from trusted sources.
- **Motivation**: Willingness, intention, and hesitancy to get vaccinated.
- **Practical barriers**: Barriers encountered when accessing vaccination services, such as cost, location, and scheduling.

Healthcare Professionals Survey

The healthcare professionals survey gathered **2,510 responses** from general practitioners, paediatricians, midwives, nurses, and pharmacists via Kantar’s Healthcare Panel. Sample targets were set per country to reflect the diversity of vaccinators and institutional structures. While regional-level data was not captured, the survey ensured broad national coverage.

The questionnaire was developed with medical experts and covered eight thematic areas:

- Practice characteristics
- Patient attitudes and behaviours
- Professional views on vaccination
- Information systems and monitoring
- Training and competence
- Communication and recommendation practices

- Vaccine supply and logistics
- Perceived systemic barriers

Statistical Modelling

To analyse the survey data, a multilevel logistic regression approach was used, incorporating both individual-level and country-level variables. The modelling process included:

- **Bayesian Additive Regression Trees (BART)** to identify the most predictive country-level variables from over 150 indicators.
- **Post-stratification and reweighting** to align survey responses with population-level distributions.
- **Scenario modelling** to estimate potential improvements in vaccine coverage if specific barriers were addressed.

Country-level data was enriched with indicators from the World Bank, Eurostat, Transparency International, and national experts. These included metrics on governance, healthcare infrastructure, internet access, outreach methods, and vaccination financing models.

Key Findings

The analysis of the two EU-wide surveys, one targeting the general population and the other healthcare professionals, revealed a complex landscape of behavioural, systemic, and logistical factors influencing vaccine uptake. These findings are structured around individual-level determinants, healthcare system characteristics, and the impact of policy interventions.

1. Individual-Level Determinants

The general population survey identified within the four key domains of the BeSD framework, several factors and determinants shaping vaccination decisions:

- **Thinking and Feeling**: Confidence in vaccine safety, trust in healthcare professionals, and fear of side effects were major predictors of vaccine intent and uptake.
- **Social Processes**: Recommendations from healthcare providers and perceived social norms (family, peers, religious leaders) significantly influenced decisions.
- **Motivation**: Willingness to vaccinate varied between vaccine types, with higher willingness observed for seasonal influenza and COVID-19 boosters.
- **Practical Issues**: Barriers such as unclear booking procedures, limited clinic hours, and transportation costs were frequently cited.

Demographic factors such as age, education, employment status, and health literacy also played a role, with younger and more educated individuals generally showing higher vaccine acceptance.

2. Healthcare Professionals' Perspectives

The survey of healthcare professionals highlighted several systemic challenges:

- **Administrative Burdens**: Fragmented monitoring systems and lack of centralised registries hindered efficient vaccine delivery.
- **Training and Communication**: Many professionals reported insufficient training in vaccine communication and hesitancy management.
- **Supply and Access**: Limited availability of vaccines and vaccinators, especially in rural areas, was a recurring issue.
- **Outreach and Reminders**: Inadequate reminder systems and outreach campaigns were seen as missed opportunities to boost uptake.

3. Country-Level Insights and Modelling

Using Bayesian Additive Regression Trees (BART) and multilevel regression models, the study identified 20 significant country-level predictors of vaccine uptake. These included:

- **Governance and Trust**: Countries with higher government effectiveness and social trust showed better vaccination outcomes.
- **Digital Infrastructure**: Internet access and use of digital health platforms correlated positively with uptake.
- **Health System Preparedness**: Availability (i.e. number) of curative care beds and health awareness levels were strong predictors.

4. "What-If" Scenarios and Policy Impact

Scenario modelling demonstrated that targeted policy interventions could lead to measurable improvements in vaccine coverage. For example:

- **Financing Childhood Vaccines in Primary Care**: In countries without this support, predicted MMR coverage ranged from 85.2% to 93.7%. Introducing financing could raise coverage by 1–2 percentage points.
- **Outreach and Reminder Systems**: Countries with robust outreach measures, including reminder schemes (e.g. Denmark) showed higher uptake, especially when combining digital and paper-based outreach.

However, the overall effect of single interventions was modest, underscoring the need for multi-pronged strategies tailored to national contexts.

The findings from the EU-wide surveys and modelling exercises point to a clear conclusion: improving vaccine uptake requires targeted action to remove persistent barriers. These barriers, specifically administrative, practical, financial, systemic, and informational—are not isolated issues but interlinked challenges that demand coordinated responses.

News article: Piloting of exemplary practices in EU Member States

1. Introduction

Momentum from last year's project onsite visits leads us to the next phase of the Overcoming Obstacles to Vaccination project: Piloting of exemplary practices in selected EU Member States.

The onsite visits, which took place in Spain, Italy, Denmark, the Netherlands, and Ireland, brought together health authorities who analysed practices and potential applications in their country or region. Entering 2024, the project is now in the stage of adapting and implementing these exemplary practices in other EU Member States.

Pilot projects will test the relevance and transferability of selected practices under three clusters: school vaccination programmes, mobile vaccination units, and vaccination reminder schemes. The pilots will last 12 months and take place in nine EU Member States.

The identification of the clusters and the selection of the volunteering EU Member States for piloting are based on previous tasks and activities of the project, including:

- mapping of vaccination services and identification of obstacles to vaccination across the European Union,
- large-scale surveys among citizens and among health professionals across all Member States,
- selection of five best practices to overcome vaccination obstacles of physical, practical, and administrative nature, and
- active engagement with health authorities.

2. Methodology

To ensure suitability of the selected practices and meeting the objectives of participating health authorities in the piloting phase, the project team undertook a step-by-step approach in building a list of volunteering EU Member States:

Step 1

As part of Task 1, national health experts conducted desk research and interviews to identify and map obstacles to vaccination in all Member States. The goal was to map vaccination services in all Member States and identify the main physical, practical and administrative barriers in citizens' vaccination journey (i.e., outreach methods, pre-administration requirements, booking procedures, travel distance).

Step 2

As part of Task 3, an open call for health authorities was launched to submit promising practices. A total of 24 practices from 16 health authorities were submitted through the Best Practice Portal of the European Commission's Directorate-General for Health and Food Safety (DG SANTE). A team of evaluators identified five promising practices to be taken forward for onsite visits based on the evaluation framework developed by the European Commission's Steering Group on Health Promotion, Disease Prevention and Management of Non-Communicable Diseases (SGPP). The five promising practices selected:

- School Vaccination Programme in the Region of Murcia, Spain
- Reminder schemes to support childhood immunisation, Denmark
- Su.Pr.Eme, Health Care Service for Seasonal Workers, Bari, Italy
- Mobile Vaccination Units, The Netherlands
- Offering the Flu Vaccine to Children in Three Primary Schools, Ireland

Step 3

As part of Task 4, health authority representatives from across the EU were brought together in five separate onsite visits during which participants came together to analyse the selected practice and reviewed the potential applications in their country or region. These exchanges allowed health authorities facing similar barriers and having similar interests to interact and share views and opinions. Their participation was key in pairing the practices and health authorities who had an interest in piloting.

Finally, the selected five practices were grouped in clusters (with similar typology of practices) with similar characteristics and barriers in order to facilitate their adaptability to different national or regional contexts. In that regard, some elements of the practices will be adapted, transferred, and piloted.

3. Typology of practices

The conceptualisation of the pilots is clustered in three typologies:

School Vaccination Programme

The two practices on school vaccination programme in Spain and Ireland are grouped into one typology. They both focus on outreach to children through vaccination programmes in schools, providing efficient access to vaccination for children, while optimising staff resources. Health authorities in Estonia and the Netherlands will pilot the school vaccination programme practice.

Mobile Units

Both mobile vaccination unit practices in the Netherlands and Italy tackle barriers faced by hard-to-reach groups and geographical proximity to vaccination services. These two practices are grouped as one practice type. This pilot project will be implemented by health authorities in Austria and Sweden.

Reminder schemes

The reminder scheme in the Danish practice, enabling more efficient communication with citizens and improvement of outreach of vaccination services, is the third practice type. Health authorities

in Croatia, Lithuania, Slovenia, and the Spanish regions of Catalonia and Murcia will pilot the transfer of this exemplary practice.

4. Identification of suitable candidates for pilots

Once the typologies of practices were identified, health authorities had the chance to express their interest to participate in a pilot in one of the three clusters via the submission of pilot fiches (i.e. a formal expression of interest and piloting ideas).

For the purpose of implementing a pilot within the frame of this project, some pre-conditions apply to the selection of pilots:

- The presence of barriers addressed by the practice;
- The desire/intention of the health authority to address these specific barriers and therefore an active engagement and involvement during the onsite visits;
- The appropriate legal framework and technical infrastructure supporting the implementation of the pilot.

For example, the implementation of the school vaccination practice requires that school vaccination programmes are already active in the country/region. The piloting of elements of the mobile units require that mobile units are/were already used in the country/region and the piloting of reminders requires the presence of an IT infrastructure.

Based on the piloting proposals received by health authorities and the assessment of elements above nine pilots will be implemented in Austria, Croatia, Estonia, Lithuania, the Netherlands, Sweden, Slovenia, and the Spanish regions of Catalonia and Murcia.

5. Next steps

The next steps of the project involve three phases:

- *Preparation:* From March to May 2024, the project team will conduct a coordination meeting with the piloting health authorities and in-depth visits to each host country (namely, Denmark, The Netherlands and Murcia (Spain)) to gain extensive insights on the practical set up of the pilots and exchange expertise. During this period, the team will collaborate on co-creating materials and establishing site protocols, continuing through April to June 2024.
- *Implementation:* Pilots will take place from April to October 2024. This phase includes online peer support and conducting a midterm review of the pilots in June-July to assess progress as well as make any necessary adjustments.
- *Evaluation:* The evaluation of the pilots will be integrated into the pilot approach, including on-going data collection. The in-depth data analysis is scheduled between October 2024 to March 2025, where the transferability and impact of the pilots will be assessed. As part of task 5, recommendations will be developed which will feed into *task 6 - Develop recommendations on how to overcome "convenience" obstacles to vaccination*.

Interested in following the pilots' developments? Subscribe to the newsletter

Fighting the resurgence of measles with reminder messages

In 2024, the resurgence of measles' cases peaked in Europe with 127,000 cases, undermining herd immunity and putting both children and adults at risk. In Catalonia, a pilot aimed to increase the mumps, measles and rubella (MMR) vaccination coverage of children to reach the 95% target set by the WHO (World Health Organization). The initiative responded to barriers such as the lack of large-scale outreach method, or insufficient knowledge on MMR vaccination importance and vaccination schedule among the general population.

Different SMS messages were sent to a total of 14 358 families of children who had not received the recommended two doses of the MMR vaccine. Thanks to the intervention, complete vaccination coverage of 4-year-old children increased by 1.86% between May and June 2024. The pilot, supported through the 'Overcoming Obstacles to Vaccination' project, funded by the European Union, was rolled out in phases, starting with the development of two different reminder messages to test which one solicited more responses, followed by the sending of these messages, and evaluation of their impacts over the vaccination rate It was observed that on the short run the most assertive message prompted earlier vaccine administration, but that on the long run both messages led to similar results.

Mutual learning and collaboration as a key driver

Collaboration between the Catalan health authority and local healthcare providers, as well as data engineers and statisticians, was essential to ensure the effective delivery of the SMS reminders. Support from the existing IT infrastructure notably played a crucial role in the success of the pilot.

The mutual learning activities provided an invaluable space for the health authority to exchange best practices with other European countries, notably Denmark, and gain valuable insights into the effectiveness of different reminder schemes in other countries. A key factor for the design and implementation of the pilot was the existing cooperation framework among stakeholders in Catalonia, as well as the involvement and dedication of the representative from the health authority who led the project. In addition, the pilot contributed to the improvement of the vaccination registry database, which will lead to better monitoring and more targeted vaccination campaigns.

The pilot has a strong potential for replication in other regions facing similar challenges. Given its success, the approach could be scaled up by other health authorities, building on lessons learnt in Catalonia, as well as Croatia, Lithuania, Murcia and Slovenia where the pilot has also been piloted. The pre-existing IT infrastructure used for the Catalonian pilot can be applied to other interventions. In other regions, stakeholders recommended the use of online health applications to limit the costs and avoid saturating the general population with SMS messages.

Overcoming Obstacles to Vaccination across the EU

”Overcoming Obstacles to Vaccination” is a three-year EU-funded project that aims to boost vaccination coverage by tackling physical, practical, and administrative barriers to seven key vaccines, including COVID-19, HPV (Human Papillomavirus), and MMR (Measles, Mumps, and Rubella). The project identified effective practices across EU Member States, piloted them in countries facing similar challenges, and developed tailored recommendations for policymakers, health authorities, professionals, and citizens.

Boosting MMR vaccination through parent-centred reminders in Murcia

Many parents in the Region of Murcia face practical barriers when scheduling their children's routine health check-ups, which include the second dose of the measles, mumps, and rubella (MMR) vaccine. These check-ups, required at 12 months and 4 years of age, are longer than standard vaccination visits and must be booked in advance, either in person or by phone – but not online. This often leads to appointments being overlooked or forgotten, resulting in gaps in vaccination coverage.

To address this, Murcia's health authorities brought vaccination services closer to families through a targeted reminder system, aiming to increase uptake of the second MMR dose among 4-year-olds.

As part of the EU-funded 'Overcoming Obstacles to Vaccination' project, an initiative was piloted where parents received SMS reminders prompting them to book their child's appointment.

The target population of the pilot was composed of 13,804 children born in 2020, among whom 2,744 (19.9%) were not vaccinated with the second dose of MMR. The target population was divided into three groups randomised according to the month of birth:

- Group 1: Parents of children born in January, April, July and October received the SMS reminder.
- Group 2: Parents of children born in February, May, August and November received the SMS reminder and the informative SMS (containing a link to additional information about the MMR vaccine).
- Control group: Parents of children born in March, June, September and December received no intervention.

The distribution of unvaccinated children across the three groups prior to the intervention shows variation, with 17% in group 1, 19% in group 2, and 25% in the control group. This pre-intervention disparity in vaccination uptake is influenced by the month of birth. Due to scheduling delays, when the administrative data were collected children born in the last months of the year were less likely to have attended their 4-year vaccination appointment, compared to those born early in the year, who presented significantly higher vaccination rates prior the intervention (90.24% in January, 88.90% in February vs. 65.30% in November and 47.25% in December).

To reduce the effect of the pre-existing differences in vaccination uptake by month of birth, the assessment of the results of the intervention was carried out considering children born in the first six months of 2020, which presented more similar vaccination coverage. Vaccination coverage increased in all three groups after the intervention: the group that received text messages with an information link recorded the highest increase (1.73 percentage points, 14.45% relative), followed by the SMS reminder group (1.33 percentage points, 12.60% relative). These increases exceeded those in the control group, which saw a smaller increase of 1.08 percentage points (7.89%

relative). The reminder initiative implemented by the pilot improved awareness and made it easier for parents to act.

The pilot also introduced a new IT reminder platform, allowing health authorities to manage vaccination reminders more efficiently. This digital infrastructure strengthens the region's capacity to reach parents and supports future vaccination campaigns.

Collaborating with partners to reach families effectively

The initiative was implemented through close collaboration between key partners, including the Directorate General of Public Health and Addictions, the Ministry of Health's IT Systems Department, the Murcia Health Service, and the Directorate of the Public Health Area of Lorca. Together, they ensured the pilot was strategically guided, technically supported, and effectively delivered.

By adapting a reminder system inspired by Danish best practices, Murcia's health authorities strengthened their vaccination strategy and addressed barriers for parents. The pilot showed how digital tools can enhance outreach, build trust, and deliver timely, evidence-based communication.

Its success highlights the potential for sustainability and transferability. The reminder system is expected to continue beyond the pilot, with the platform expandable to other vaccines or awareness campaigns, offering a scalable model for parent-centred vaccination outreach.

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Boosting HPV vaccination in Lithuania through SMS outreach

Declining HPV vaccination rates among 11- and 12-year-olds in Lithuania highlighted the need for a targeted solution. To address this challenge and to achieve an annual 4% increase in vaccination uptake, health authorities launched a pilot initiative that used SMS reminders and digital information packages to reach parents and guardians. The pilot aimed to address issues like lack of awareness and misinformation about HPV vaccination, ensuring families had timely, accurate information about HPV vaccination schedules.

This pilot initiative, funded by the European Union through the 'Overcoming Obstacles to Vaccination' project, was rolled out in phases, beginning with the collection of phone numbers and the preparation of information packages. To implement the pilot, 2,549 SMS messages were sent to families, each including a link to the citizen online health platform, which provided detailed information on HPV vaccination.

This initiative was made possible through collaboration with key partners, including the Ministry of Health, the Registry Centre, the National Public Health Centre, and Klaipeda City Municipality. The involvement of healthcare professionals and local authorities was essential to the pilot's success.

Building trust through effective messaging

One of the key lessons learnt from the observed low opening rate of the messages by citizen is that the way information is delivered is crucial for building trust and engaging the population effectively. As a result, stakeholders are considering using an online health application for future campaigns.

The *Overcoming Obstacles to Vaccination* project also enabled the health authority to gain valuable insights into implementing reminder schemes. Mutual learning activities and in-depth visits provided an invaluable space to exchange knowledge and best practices on sending vaccine reminders, inspiring the health authority to adopt similar practices in Lithuania. Insights were further strengthened through a citizen survey, which highlighted the need for more information on vaccination and schedules and improved understanding of how to communicate this information effectively to the population.

The pilot demonstrated strong potential for replication in other regions facing similar challenges. Results showed that this approach could be adapted and scaled across Lithuania. By automating the sending of reminders, healthcare practitioners could save resources typically spent on manually contacting families. Additionally, delivering information packages could help address similar barriers in other counties, potentially increasing vaccination coverage at the national level.

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Reintroducing HPV reminders in schools can significantly improve vaccination rates among Slovenian adolescents

Despite being free for adolescents and young adults up to age 26, many in Slovenia are missing out on the HPV vaccine. While schools provide information and access in 6th grade (to 11-12 years old pupils), follow-up stops soon after, leaving parents unaware that their children are still eligible. With no routine check-ups or reminders, many teens miss the window to complete the vaccination on time, risking incomplete protection against HPV.

The situation becomes even more pressing by the 9th grade (when pupils are 14-15 years old). Uptake of the second dose remains particularly low, and without routine health check-ups or reminders, teenagers often miss the chance to complete the vaccination before age 15, the cutoff for requiring only two doses for full protection. Schools continue to play a central role in delivering information and facilitating access, but the drop-off in follow-up communication highlights a critical gap in ensuring adolescents are fully immunised.

This pilot initiative, funded by the European Union through the ‘Overcoming Obstacles to Vaccination‘ project, reintroduced HPV information in the 9th grade through a simple reminder package: a printed letter and an illustrated booklet by a popular Slovenian author. Materials were handed out at the first parent–teacher meeting of the school year and also uploaded to the school–parent online platform (eAssistant). Parents were reminded that vaccination could be done by the school or their family paediatrician. The pilot initially planned to target only unvaccinated children, but due to privacy concerns, the reminder was sent to all parents of 9th-grade pupils instead.

Key partners included the National Institute of Public Health (NIJZ), regional NIJZ units, school paediatricians, and the Ministry of Education. The Local Implementation Working Group, comprising paediatricians, epidemiologists, communication experts, and parent representatives, collaborated to design materials, coordinate with schools, and monitor progress.

A school-mediated reminder strategy can effectively boost HPV vaccination coverage

In the pilot regions, HPV coverage for the 2010 birth cohort rose by 5.6%, compared with 2.4% in control regions. The pilot mainly addressed the challenge of missed second doses, while monitoring focused on first-dose coverage as a practical, short-term indicator of vaccination activity. According to local health professionals, many of the vaccinations recorded during the pilot were actually second doses, completing the series started earlier in 6th grade.

Survey results showed that 35.7% of parents who received the reminder subsequently vaccinated their child. In contrast, among the children who remained unvaccinated, 72% had parents who

reported not receiving a reminder. This indicates that broader and more consistent dissemination of reminders could improve coverage. Parents also valued the initiative, reporting that it clarified the benefits of HPV vaccination, encouraged timely action, and reassured them about vaccine safety.

The pilot showed that a school-mediated reminder strategy is feasible, low-cost, and well accepted. It strengthened collaboration between health and education sectors, produced reusable multilingual materials, and offered parents a second chance to make an informed decision. By building on existing infrastructure, the model could be scaled nationally at low cost and adapted in other countries where schools and paediatricians are trusted sources of information.

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Improving TD vaccination in Croatia through direct GP outreach

Low TD (Tetanus–Diphtheria) vaccination rates among 60-year-olds, with only about one in three people vaccinated in 2024, highlighted the need for a targeted approach. A key barrier identified by the Croatian Institute of Public Health (CIPH) was the absence of a direct, systematic communication channel with General Practitioners (GPs), which limited awareness and routine prompting in primary care.

To bridge this gap, Croatian health authorities launched a pilot initiative under the EU-funded 'Overcoming Obstacles to Vaccination' project. The pilot aimed to strengthen communication channels by sending reminder messages directly to GPs through an online platform they use daily. In total, messages were delivered to 585 GP offices across the country.

The initiative was made possible through collaboration with key partners, including the Croatian Institute of Public Health, the GP platform provider (MCS), local Public Health Institutes, and the Ministry of Health.

Driving uptake through direct, timely GP communication

The pilot demonstrated that targeted communication can significantly improve vaccination uptake. Among the intervention group, TD vaccination coverage increased by 1.17%. The reminder messages achieved high engagement, with 57% of GPs opening them, leading to 803 vaccines administered in the target group.

Beyond immediate results, the 'Overcoming Obstacles to Vaccination' project enabled authorities to establish a dedicated communication channel within the national citizen platform for future vaccination campaigns. Peer learning activities across countries, including other pilot programs, helped to navigate legal considerations for direct outreach to citizens for vaccination campaigns. The flexible design of the pilot allowed for its rapid adaptation to regulatory requirements. Importantly, the work helped catalyse a national legislative reform process to permit direct communication with citizens in future health campaigns.

The pilot's success highlights the potential for replication in other regions facing similar challenges. By leveraging existing communication channels with GPs and citizens, this approach offers a flexible, cost-effective way to improve vaccination coverage and public health communication.

Overcoming Obstacles to Vaccination across the EU

"Overcoming Obstacles to Vaccination" is a three-year EU-funded project that aims to boost vaccination coverage by tackling physical, practical, and administrative barriers to seven key vaccines, including COVID-19, HPV (Human Papillomavirus), and MMR (Measles, Mumps, and Rubella). The project identified effective practices across EU Member States, piloted them in

countries facing similar challenges, and developed tailored recommendations for policymakers, health authorities, professionals, and citizens.

Increasing vaccination uptake with accessible local sites

Declining vaccination rates among nine- and ten-year-olds in New West Amsterdam have underscored the need for a targeted solution, as this area records some of the lowest coverage in the region, particularly for HPV, MMR, and DTP (Diphtheria, Tetanus, and Pertussis) vaccines. Many families face practical barriers that make vaccination challenging, including long travel distances, limited time due to work commitments, and unfamiliar vaccination locations.

To support families in this area and reduce barriers to vaccination, local health authorities launched a pilot initiative funded by the European Union through the 'Overcoming Obstacles to Vaccination' project to relocate vaccination sites. The vaccination setting was moved from a large sports hall to a smaller, more accessible room in a building adjacent to a local school. This change aimed to reduce travel and accessibility barriers while avoiding the sensitivities associated with in-school vaccination. The new location offered a quieter, more comfortable environment for families and was already used for youth healthcare, meaning no additional staff or equipment were required. Standard procedures remained unchanged, and families received personalised invitation letters with the updated location.

This initiative was made possible through collaboration with key partners, including the National Institute for Public Health and the Environment (RIVM) and the Municipal Health Service of Amsterdam (GGD Amsterdam). RIVM coordinates the National Immunisation Programme, while GGD Amsterdam implements national vaccination policies at the local level.

Improving access through thoughtful relocation

The pilot ran from spring to autumn 2024, and its impact was assessed by comparing vaccination results from 2023 (before relocation) and 2024 (after relocation). During this period, the regular vaccination site recorded the largest improvement in vaccination uptake, supported by ongoing outreach campaigns. The pilot sites kept about the same participation levels, even though the change of location was not promoted or publicised. Importantly, vaccination rates at the pilot sites did not decrease following the relocation. In fact, during the autumn catch-up round, MMR coverage rose by 13% at one pilot site and 10% at the other, while DTP increased by up to 19%. Parents responded very positively to the new setup: 84% said they preferred the small, school-adjacent site over the large sports hall, and three in four indicated they might not have attended if vaccination had been offered elsewhere.

The Dutch pilot confirmed that proximity matters. Even without added outreach, families used the nearby service. It's important to mention that the in-depth visit to Spain and exchanges with other EU countries helped shape the pilot's design.

The pilot results demonstrate that small, practical changes like relocating vaccination sites to more convenient locations can be adapted and scaled to other regions. By using existing infrastructure and keeping vaccinations outside schools, this approach offers a flexible, affordable way to bring

vaccines closer to families, with early school engagement ensuring smooth implementation and broader national impact.

Overcoming Obstacles to Vaccination across the EU

”Overcoming Obstacles to Vaccination” is a three-year EU-funded project that aims to boost vaccination coverage by tackling physical, practical, and administrative barriers to seven key vaccines, including COVID-19, HPV (Human Papillomavirus), and MMR (Measles, Mumps, and Rubella). The project identified effective practices across EU Member States, piloted them in countries facing similar challenges, and developed tailored recommendations for policymakers, health authorities, professionals, and citizens.

Promoting HPV vaccination in Estonia with targeted video lectures

Limited awareness and knowledge of HPV vaccination among the population continue to hinder coverage among 14-year-olds in Estonia. To address this challenge, Estonian health authorities have developed an innovative approach: leveraging the fact that most school-age children are vaccinated at school, they created an educational video lecture on HPV vaccination for distribution to students, parents, and teachers.

Since the vaccine was added to the national immunisation programme, HPV coverage has steadily increased - but it remains below the World Health Organization (WHO) target of 90% by 2030. In 2023, only 62.7% of 14-year-olds had received the vaccine.

This pilot initiative, funded by the European Union through the ‘Overcoming Obstacles to Vaccination‘ project, was rolled out in phases. It began with a needs assessment of the school vaccination context in Estonia, followed by the design of the pilot. The health authority then collaborated with key health experts and the education authority to develop a video lecture tailored to students, parents, and teachers. Once deployed through classrooms, emails, and dedicated information sessions led by school nurses, the video lecture increased knowledge and awareness of HPV vaccination among its target audiences. By delivering clear, science-based information in an accessible format, the pilot introduced a new communication tool that differed from previous outreach strategies in Estonia and helped ensure that students, parents, and teachers were better informed and more confident in their vaccination decisions. The video was delivered to 1,022 students across eight schools and encouraged active engagement among students and parents, increased awareness, and created more opportunities for information exchange between nurses and the target population.

Learning from best practices to strengthen school vaccination

A critical element of the project was mutual learning. Through five on-site visits to countries with best practices in overcoming vaccination obstacles, Estonian health authorities gained insights into how school vaccination is organised elsewhere, learned about different vaccination systems, and adapted successful strategies. This cross-country exchange allowed them to refine their approach and implement proven solutions.

The HPV video lecture, tailored for the school vaccination context, holds great potential for replication in other Estonian schools and for other vaccines. Its digital format makes it a reusable, accessible resource that can easily be adapted to support broader vaccination efforts.

Overcoming Obstacles to Vaccination across the EU

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Working with vocational schools to increase MMR vaccine uptake

Limited opening hours of vaccination services, financial barriers - including taking time off work or school - and lack of reliable and accessible information make it difficult for young people to get vaccinated. In Upper Austria, healthcare professionals brought vaccination services directly to students in six vocational schools, making it easier and more convenient for them to get vaccinated; they aimed to tackle low vaccination coverage against measles, mumps and rubella (MMR) and pertussis (DTaP/IPV) vaccines among young people.

The barriers addressed by this initiative are particularly prominent among students in vocational schools. They become independent at a younger age, as their professional education places them directly into the working world. This independence leads them to make their own vaccination decisions earlier than their peers. Additionally, after the age of 15, routine vaccinations are no longer administered during school medical visits, creating a gap in access. Young people are also more exposed to misinformation and lack reliable scientific information about vaccination.

Through the 'Boost to Go' campaign, students over 14 years of age received reliable and engaging information via brochures, pocket cards and videos, helping them make informed decisions about vaccinations and their health more broadly. The mobile vaccination team delivered interactive talks in classrooms to around 1 400 students, using videos and visuals to explain the importance of vaccinations. After the interactive talk, 34% of students (473) chose to attend a one-to-one consultation to review their vaccination history and receive tailored advice. Following these sessions, on-site vaccinations were offered to students who were missing or due for vaccines. As a result, 174 students chose to get vaccinated, demonstrating the impact of convenience and the removal of practical barriers such as booking appointments, taking time off work, since vocational students alternate between school and professional work, or covering costs.

This pilot initiative, funded by the Europe Union through the 'Overcoming Obstacles to Vaccination' project, was rolled out in phases. First, Upper Austria's health authorities secured the support of the heads of vocational schools and designed the intervention. Then, from December 2024 to February 2025, 'vaccination info days' were held at six vocational schools.

Working with peers and new partners to reach out to young people

Vocational schools had not previously participated in health initiatives, so this project gave Upper Austria's health authority an opportunity to forge new connections. Close collaboration with school heads was essential: they distributed invitations and informational materials prepared by the project team for both students and parents, and helped organise the information days.

The mobile vaccination team included a peer with a similar background and close in age to the students. This peer facilitated direct, face-to-face communication, making the topic of vaccination more relatable and encouraging open dialogue.

The initiative gave the Austrian Health Ministry and Upper Austrian health authority opportunities for capacity building and mutual learning through on-site visits, study trips and online exchanges with peers. It introduced evidence-based practices not commonly used in Austrian public health campaigns, including designing initiatives with built-in evaluation to assess impact. It also helped develop a deeper understanding of how to communicate with hard-to-reach groups and which messages to prioritise to build trust, providing insights that will be valuable for future vaccination campaigns.

Overcoming Obstacles to Vaccination across the EU

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Improving vaccination coverage in Skärholmen (Sweden) by bringing services closer to the community

In Skärholmen, a Stockholm district with a large migrant population, many seniors faced barriers such as difficulties with digital booking systems, limited mobility and language challenges. Administrative requirements and linguistic obstacles further discouraged participation, contributing to low influenza and COVID-19 vaccination rates among residents aged 65 and older.

To enhance accessibility, a mobile vaccination unit was set up in the central square of Skärholmen for seven consecutive Saturdays. This provided an easily accessible vaccination option and served as a convenient alternative to the standard digital booking system.

This pilot initiative, funded by the European Union through the 'Overcoming Obstacles to Vaccination' project, also placed strong emphasis on outreach to raise awareness. This included collaborations with local and national media, distributing postcards to residents in the target age group, and engaging with local stakeholders in elderly care services. To better serve the community, posters and flyers were also translated into multiple languages.

Bringing vaccination closer to residents through a mobile unit

The pilot was implemented through close collaboration between the Stockholm regional health authority, the Health and Medical Service Administration, and six local health centres. The mobile unit was staffed with a diverse team, including nurses to administer vaccines, healthcare professionals supporting non-Swedish speakers, and multilingual health informers trained in health and wellbeing. These informers actively engaged with residents, raising awareness and encouraging uptake of the mobile unit's services.

The initiative contributed to a 3% increase in influenza vaccination coverage among the target group in Skärholmen. Importantly, it also reached individuals who had not been vaccinated the previous year: 27% of those vaccinated for influenza and 46% of those vaccinated for COVID-19 through the mobile unit had not received the same vaccines in 2023.

The pilot fostered new collaborations among local stakeholders, both within and beyond the Stockholm region. It strengthened partnerships between primary healthcare providers facing similar challenges and built closer cooperation between the health authority, municipal social workers, and elderly care services.

For the health authority, the initiative provided valuable insights into integrating stakeholders with diverse expertise into vaccination services. It also underscored the importance of effective community engagement and helped identify key partners for future outreach efforts.

Overcoming Obstacles to Vaccination across the EU

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Overcoming Obstacles to Vaccination: Set of final recommendations

Designing effective vaccination programmes requires a multifaceted approach that addresses the multiple practical barriers hindering vaccine uptake: logistical, administrative, informational barriers and barriers linked to the limited availability of medical staff and services can represent a major obstacle towards achieving vaccination coverage targets.

Reminder schemes, mobile vaccination units, and school vaccination programmes can help lifting these barriers and increasing vaccine uptake.

The following recommendations provide a framework for refining vaccination strategies to make them more impactful and sustainable.

Reminder schemes

Reminder systems (SMS, email, digital notifications) help improving awareness of vaccination schedules, reducing forgetfulness, and addressing information barriers. They can also support the improvement of vaccination service supply, by making vaccine demand more predictable. Evidence from pilot reminder schemes implemented in Catalonia, Murcia, and Croatia shows statistically significant increases in vaccine coverage when reminders are sent. Key elements for the success of reminder schemes include:

- Integrating automatic reminder systems with administrative databases.
- Offering easy access to information materials, e.g. via links to official websites or mobile applications embedded in the reminder message.
- Using multilingual communication to ensure accessibility for linguistic minority groups.
- Engaging general practitioners in the reminder process, by providing them with tools to track their patients' vaccination status.

Mobile vaccination units

Mobile vaccination units can help overcoming geographical and convenience barriers by bringing vaccines closer to underserved or hard-to-reach communities, including rural or underserved urban areas. Pilot mobile units activated in Upper Austria and Skärholmen (Stockholm) obtained good results in engaging with vulnerable adolescents and elderly population. Lessons learned through the pilots indicate that the impact of mobile units can be strengthened by:

- Flexible opening hours, including non-conventional opening hours such as evenings and the weekends.
- Engaging with local communities through collaboration with community leaders, organisations and influencers.
- Involving multilingual healthcare professionals and providing information in multiple languages.
- Combining the offer of a range of vaccines with other relevant healthcare services.

School vaccination programmes

School vaccination programmes can improve vaccination coverage rates by reducing logistical and proximity barriers. The integration of vaccination sessions within regular school activities and school hours can minimise disruption of everyday routines for busy parents and ensure higher uptake. The pilot projects

implemented in Estonia and the Netherlands show that involving schools in vaccination awareness activities and moving vaccination premises closer to the school are associated with increased families' engagement, convenience and accessibility of vaccination services. The success of school vaccination programmes can be facilitated by:

- Engaging with parents, by providing them with clear and comprehensive information on the vaccination programme, explaining the benefits of vaccines, and addressing concerns on their safety.
- Streamlining processes, e.g. by using digital consent forms.
- Implementing targeted, age-appropriate and culturally sensitive communication strategies, including the development of information materials and the delivery of information and Q&A sessions.
- Collaborating with school nurses, teachers, and school administrators on different aspects of the vaccination programme.

Designing tailored and sustainable programmes

To develop vaccination programmes that are tailored to the needs of the target population and ensure buy-in, it is important that the programme design is supported by:

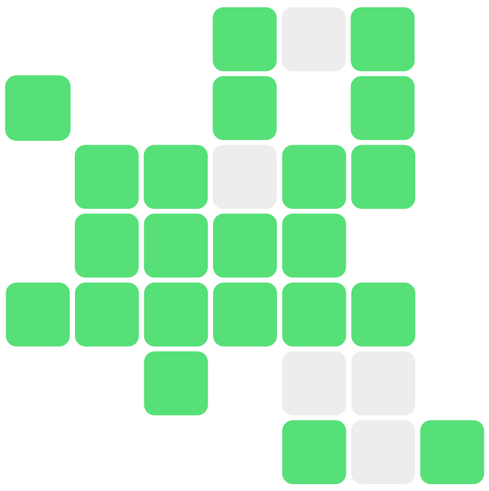
- A thorough needs assessment, to collect and organise evidence on specific needs and barriers faced by the target group.
- Building of an enabling environment through the involvement, consultation, and coordination with stakeholders (healthcare providers, institutions, organisations, community leaders), to ensure a unified approach.
- Engagement with community leaders, influencers and gate keepers to promote vaccination messages, help building trust, and address concerns within the communities.

Embedding new programmes in existing infrastructure and established routines, securing political and financial support, facilitating the involvement of local actors from the onset, and encouraging stakeholder ownership can help ensuring the sustainability of the practices beyond the pilot phase. Leveraging EU and cross-country support to organise structured mutual learning activities and benefit from exchange opportunities can facilitate innovation and enable transfers of innovative practices to different contexts.

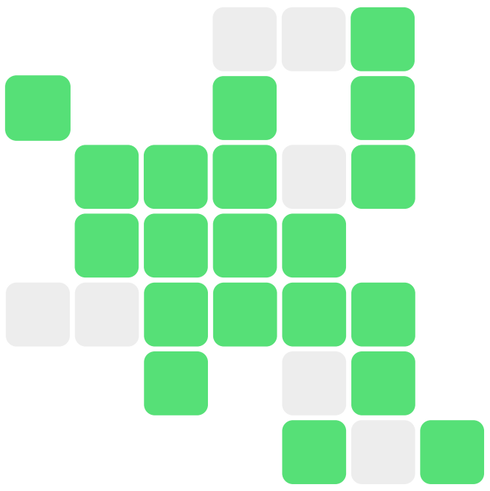
VACCINATION BOOKING SYSTEMS IN MEMBER STATES

VACCINATION LOCATIONS IN MEMBER STATES

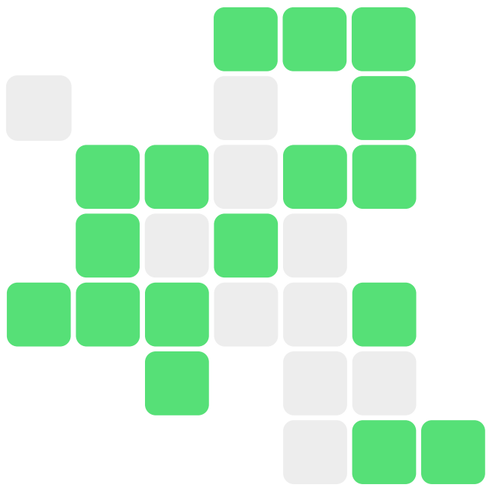
VACCINATION CENTRES



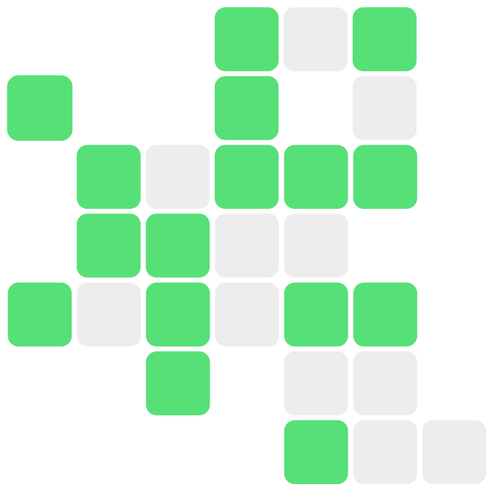
GENERAL PRACTIONIONER'S PRACTICE



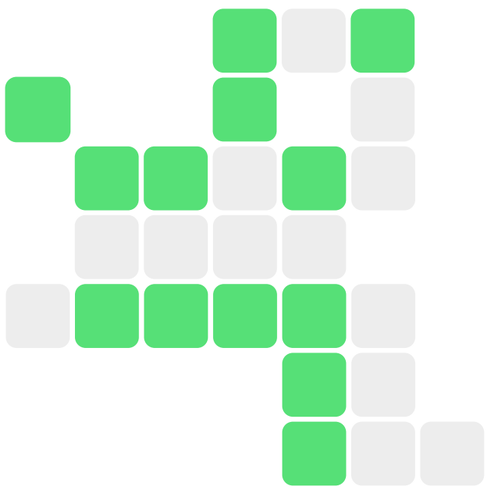
HEALTH CENTRES



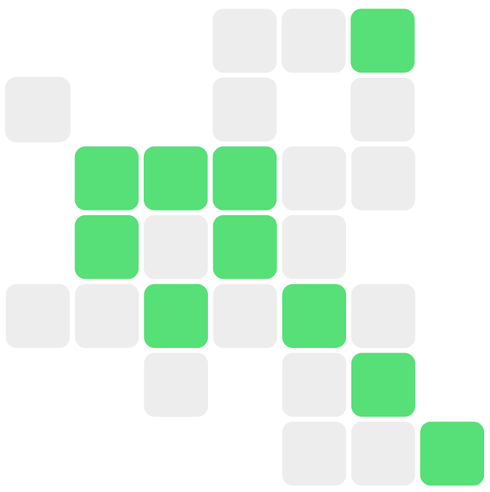
PHARMACIES



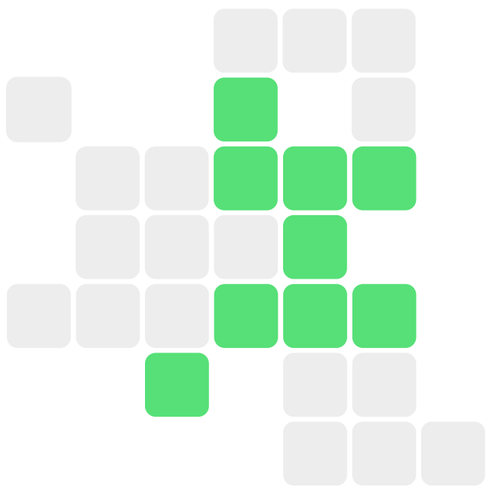
SCHOOLS



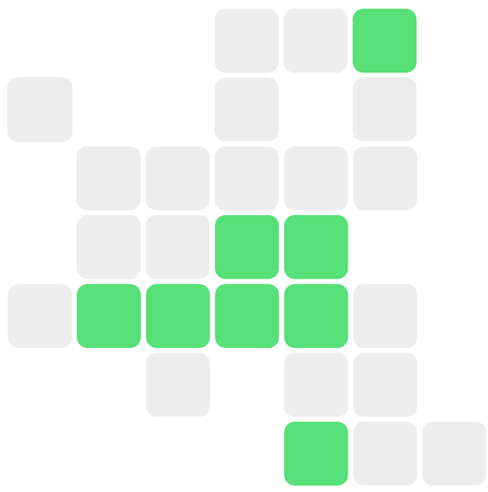
HOSPITALS/CLINICS



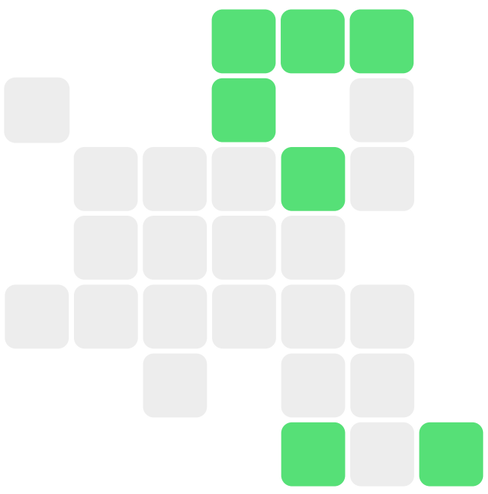
WORKPLACES



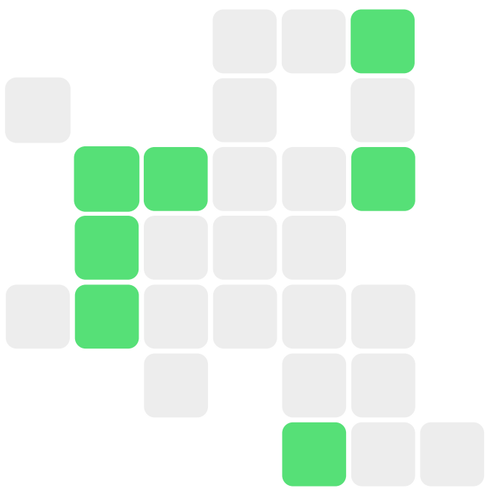
PRIMARY CARE PAEDIATRICIAN'S PRACTICE



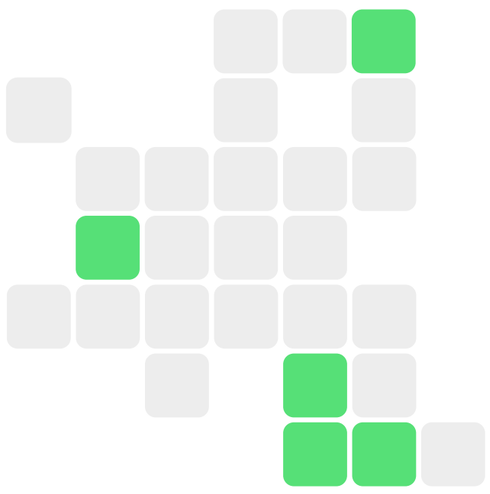
MOTHER & CHILD SERVICES



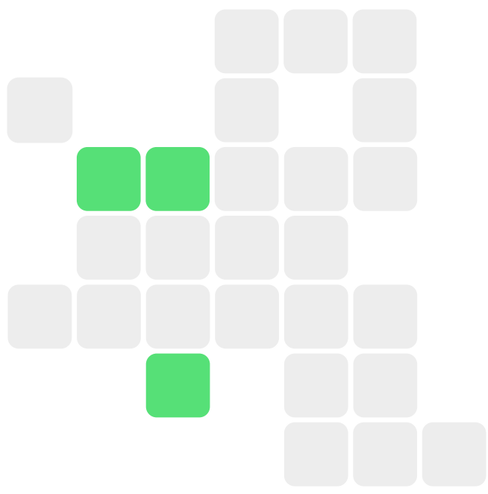
NURSING HOMES



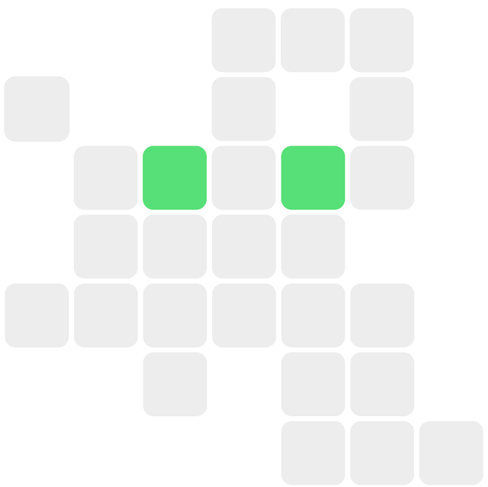
PRIVATE PRACTICE



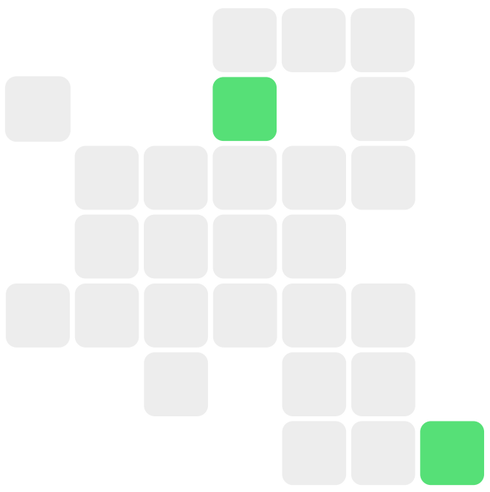
WELL BABY CLINICS



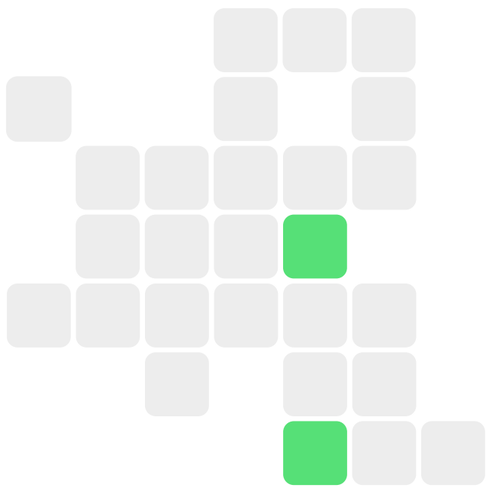
COMMUNITY CENTRES



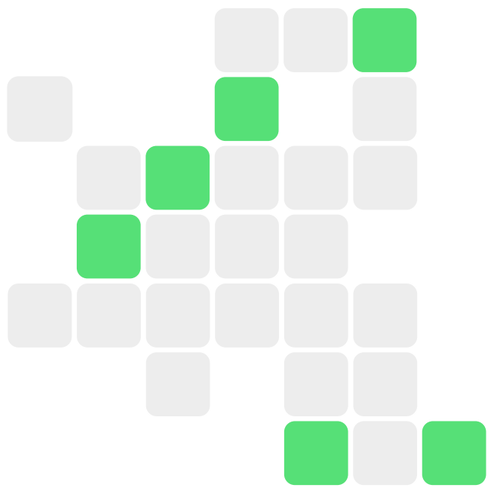
ACCIDENT & EMERGENCY DEPARTMENT (ER)



GYNAECOLOGISTS



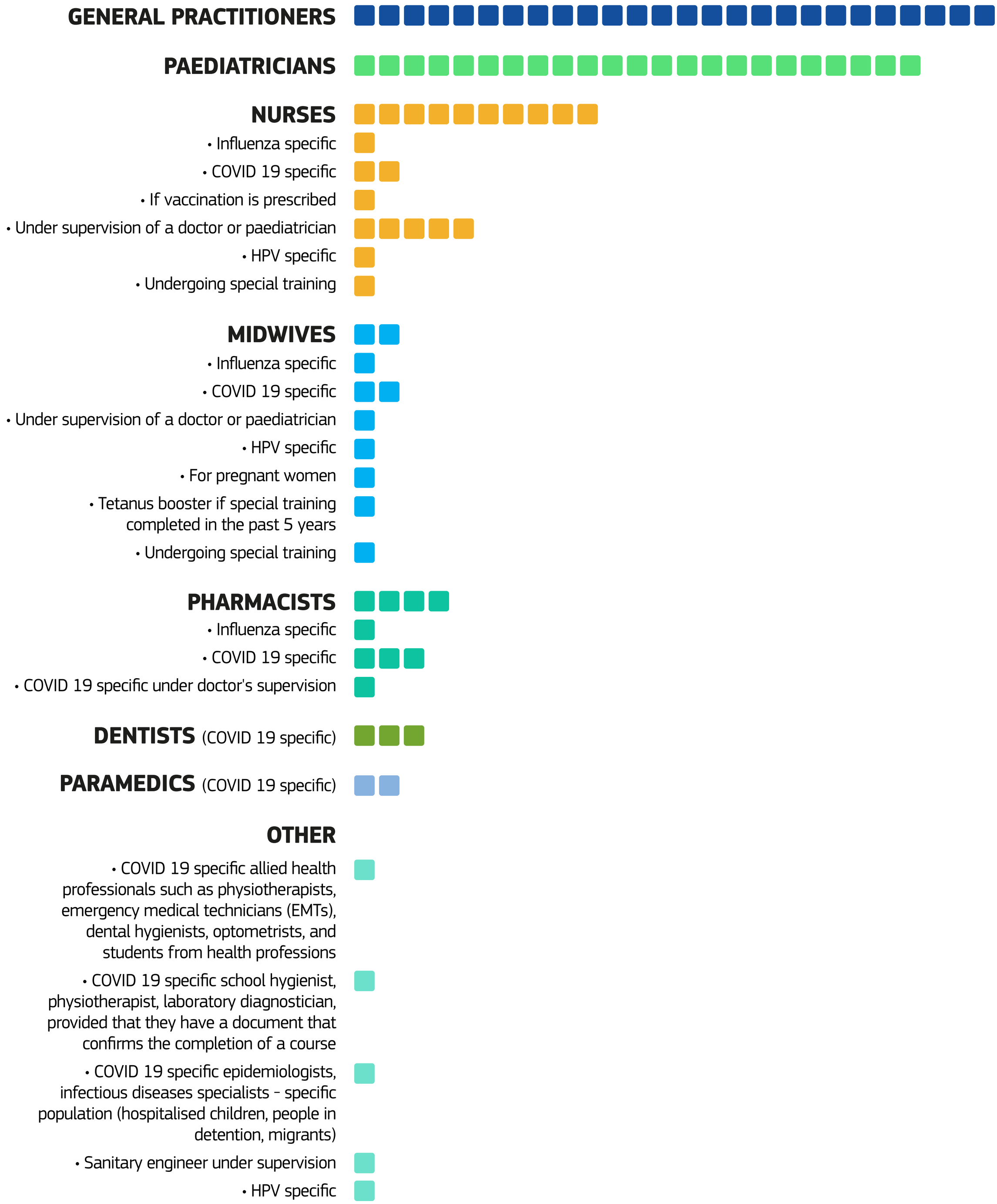
OTHERS



Overcoming Obstacles to Vaccination

Funded by the European Union

VACCINATION ADMINISTRATORS IN MEMBER STATES



PRIMARY BARRIER	SECONDARY BARRIERS	1 EU MEMBER STATE
ADMINISTRATIVE OR PRACTICAL STEPS TO GET VACCINATED 25	**MONITORING SYSTEMS** 18 **ADMINISTRATIVE STEPS FOR CITIZENS** 15 **ADMINISTRATIVE STEPS FOR HCPs** 6 **FRAGMENTED SYSTEMS** 5	
AVAILABILITY OF HEALTHCARE PROFESSIONALS (HCPs) 24	**SHORTAGES OF HCPs** 20 **RESTRICTIONS ON AUTHORISATION TO VACCINATE** 13	
OUTREACH OF VACCINATION SERVICES 24	**INFORMATION & AWARENESS TO THE PUBLIC** 21 **INFORMATION, AWARENESS OF & TRAINING PROVIDED TO HCPs** 15 **INFREQUENCY OR ABSENCE OF REMINDERS** 15 **INSUFFICIENT STAFF TRAINING IN SOFT SKILLS & COMMUNICATION** 7 **LIMITED LARGE-SCALE OUTREACH ACTIVITIES** 6	
CONVENIENCE OF VACCINATION SERVICES 23	**OPENING HOURS OF VACCINATION SERVICES** 16 **EASE OF BOOKING** 13 **LIMITED VACCINATION LOCATIONS** 10	
FINANCIAL REQUIREMENTS OF VACCINE SERVICES 21	**VACCINATION COST(S) FOR THE PUBLIC** 20 **FINANCIAL CHALLENGES FOR HCPs OR HEALTH AUTHORITIES** 3	
GEOGRAPHICAL PROXIMITY TO VACCINATION SERVICES 21	**GEOGRAPHICAL PROXIMITY OF VACCINATION SERVICES** 21	
SUPPLY OF VACCINES 15	**BOTTLENECKS IN SUPPLY CHAIN** 5 **INEFFICIENCIES IN DISTRIBUTION SYSTEMS (LOGISTICS)** 5 **COMPLEXITY OF ADMINISTRATIVE PROCEDURES & REGULATION** 4 **SHORTAGES OF VACCINATION EQUIPMENT** 2	

Promoting a Healthy Europe: Overcoming Obstacles to Vaccination

1. Welcome!

Welcome to the first edition of the 'Overcoming Obstacles to Vaccination' newsletter!

Our first publication includes a recap of achievements of the project and the ones to come in 2024, feedback from health authorities on the activities carried out within this project including an interview with the Chief Specialist of the Finnish National Institute for Health and Wellbeing and a summary of our latest publications on the project.

We – the project team - invite you to join us on the journey towards overcoming obstacles to vaccination: keep informed on important news and updates in the field and on our project by signing up and sharing the newsletter. This quarterly publication allows you to discover all the insights stemming from the project and the tools designed and used throughout on how best to overcome obstacles to vaccination across the EU.

2. Overcoming Obstacles to Vaccination: The project so far

Launched in 2022, the 'Overcoming Obstacles to Vaccination' project identified physical, practical, and administrative barriers to vaccination faced by citizens across the EU and identified exemplary practices in overcoming them; we also developed multi-lingual communication website to inform citizens, practitioners and policy makers about recent developments in the field and in the project. All these activities were carried out with the support, consultation, and involvement of health authorities across Europe and experts on the topic.

So far, we have:

Mapped obstacles to vaccination faced by citizens across all EU Member States. This exercise was carried out to better understand the vaccination services in Member States and the convenience-related barriers faced by citizens in each country. The active participation of health authorities was key in understanding national specificities and identifying promising practices.

Carried out two large scale surveys with EU citizens and healthcare professionals. The surveys allowed us to gather insights from two perspectives: we asked citizens themselves what prevents them from getting vaccinated, and we gathered insights from healthcare professionals who have hands-on experience of talking about vaccination with patients, parents and legal guardians.

Identified exemplary practices. Health authorities from across the EU were invited to submit and share their most promising practices to overcome convenience-related obstacles. Using criteria developed by the European Commission for the Best Practices Portal, from the 24 practices submitted, the five most promising ones were selected for onsite mutual learning visits.

Launched a multilingual website. In order to keep you up to date with relevant news in the field and the latest updates on the project, our team has developed a user-friendly online presence that allows the public to easily navigate all the stages of the project and follow recent developments in the field of overcoming obstacles to vaccination.

Completed five onsite visits.
Experts from health authorities had the opportunity to visit five exemplary practices, namely the school vaccination programmes in Murcia and Ireland, the reminder schemes in Denmark and the mobile vaccination units in Italy and the Netherlands. The visits also aimed to enhance collaboration and explore synergies among health authorities.

Murcia, Spain

We were welcomed by the Directorate General for Public Health and Addictions and the Municipal Services of Health of Murcia and learnt about the **"School Vaccination Programme in the Murcian Region".** It has made significant strides in improving accessibility by reaching children directly in schools for vaccination against human papillomavirus (HPV) and meningitis.

Copenhagen, Denmark

The Danish Health Authority introduced us to the **"Communication initiatives including reminder schemes to support childhood immunisation"**. It has successfully increased vaccination coverage in Denmark amongst children aged five weeks to 12 years through reminder schemes and immunisation ambassadors.

Bari, Italy

Representatives of the city of Bari, AReSS Puglia and of the Regione Puglia familiarised us with the "**Su.Pr.Eme programme".** It aims to increase access to healthcare services in rural and decentralised territories through the deployment of Medical Mobile Units supporting vaccinations efforts and effectively containing the spread of COVID-19 in areas with a prominent share of underserved groups, and particularly seasonal migrant workers.

Amsterdam, The Netherlands

We were welcomed by the RIVM National Institute for Public Health and the Environment and learnt about the **"Mobile Vaccination Units"** programme. It aims to reach neighbourhoods with low vaccination rates and offers easily accessible vaccination opportunities. Aside from getting vaccinated, residents can receive information and ask healthcare professionals and trusted key figures from the neighbourhood questions about their concerns.

Dublin, Ireland

The Health Protection Surveillance Centre and HSE National Immunisation Office introduced us to the **National Immunisation Advisory Committee (NIAC) pilot programme "Offering the Flu Vaccine to Children in Three Primary Schools".** It aims to administer the recommended influenza vaccination for children in schools, highlighting the effectiveness of school-based vaccination in improving vaccine uptake, which increased from 12.4% to 76.3% among the participating schools' populations.

Coming soon…

All the knowledge and know-how acquired during the initial phases of the project will now be put in practice and tested at the national or regional level with nine pilots. Sign up to the newsletter and stay updated on how the pilots roll out from preparation and implementation to their evaluation (from March 2024 to March 2025):

Preparation **Implementation** **Evaluation**

Based on the outcomes of the project so far, including the pilots, we will develop a set of recommendations on how best to overcome obstacles to vaccination. In fact, this project was mentioned as an example of a vaccination-related action under the EU4Health Programme in the Commission's recent proposal for a Council Recommendation on vaccine-preventable cancer.

3. Feedback from health authorities

We are happy to share that the 27 different health authorities involved in the onsite visits are as excited as we are about this project! When asked about their experience on the onsite visits, representatives from the health authorities got back to us with many positive points regarding the organisation, logistics, networking, and content of the presentations during the onsite visits. Furthermore, the vast majority of respondents stated that:

- engaging with the project had been valuable for them and their respective colleagues and health authorities.

- they were well-informed about project activities and opportunities for their health authority to participate.
- they felt the project team has been transparent with regards to the information about the piloting process.

Some respondents mentioned talking about this project to their colleagues back home and even on other events such as congresses on preventive medicine and would be happy to participate in similar activities in the future. Mia Kontio, Chief Specialist at the Finnish National Institute for Health and Welfare told us more.

Interview: Mia Kontio, Chief Specialist at the Finnish National Institute for Health and Welfare

"One of the best things of the visits of course is to meet other people from other countries and hear their opinions and how they do things in their countries […] Informal exchanges are extremely important. And now I can just contact them and we can help each other."

"From each visit, both the ones where I was familiar with the practices and the ones I was not, there has been "smaller" things that I can take home and utilise […] to make our vaccination programme better".

"These visits have been excellently organised and really well structured. I really liked that there has been a mixture of first introducing the vaccination and health systems of countries and then going more into detail on the vaccination schemes and good practices."

4. Publication

Our website has been updated with the latest publications from the project. Discover the exemplary practices!

- Practice factsheet: Offering the flu vaccine to children in three primary schools (Ireland)
- Practice factsheet: Mobile vaccination units to increase COVID-19 vaccination uptake (Netherlands)
- Practice factsheet: Communication initiatives including reminder schemes to support childhood immunisation (Denmark)
- Practice factsheet: Su.Pr.Eme (Italy)
- Practice factsheet: School vaccination programme in Murcia region (Spain)

5. Stay updated

2024 will see the start of the piloting of practices across eight Member States. Our newsletter will provide the latest information about the pilots and will feature interviews with different health authorities' representatives.

You know someone in the field of health interested in the topic of vaccinations? Circulate the subscription link for all the latest updates of the project.

Promoting a Healthy Europe: Updates from Our Project Pilots and Peer Learning

Welcome to the latest edition of our newsletter!

In this issue, we provide an update on our efforts to enhance vaccination access across Europe. The focus is on nine pilot projects being implemented in multiple Member States, where we're testing promising practices to overcome vaccination barriers and boost coverage rates. We also highlight new infographics from the Mapping Vaccination Services initiative, offering a clearer picture of the EU's vaccination landscape.

Updates on pilots

In 2024, we started nine pilots in eight volunteering EU Member States. The focus was on three promising practices: reminder schemes, school vaccination programmes, and mobile vaccination units.

Reminder Schemes: Piloted in Catalonia, Murcia, Croatia, Lithuania, and Slovenia, reminder systems were tested using SMS, letters, and other methods to inform parents and people with chronic conditions about upcoming vaccinations – increasing vaccination rates, reducing missed doses and supporting timely immunisation.

School Vaccination Programmes: In Estonia and the Netherlands, authorities launched school-based vaccination programmes to improve vaccine uptake by reducing logistical barriers. Additionally, HPV information campaigns within schools helped raise awareness and encouraged participation.

Mobile Vaccination Units: In Austria and Sweden, mobile units reached underserved areas, bringing vaccination services directly to communities, with the goal of overcoming logistical, administrative and financial barriers.

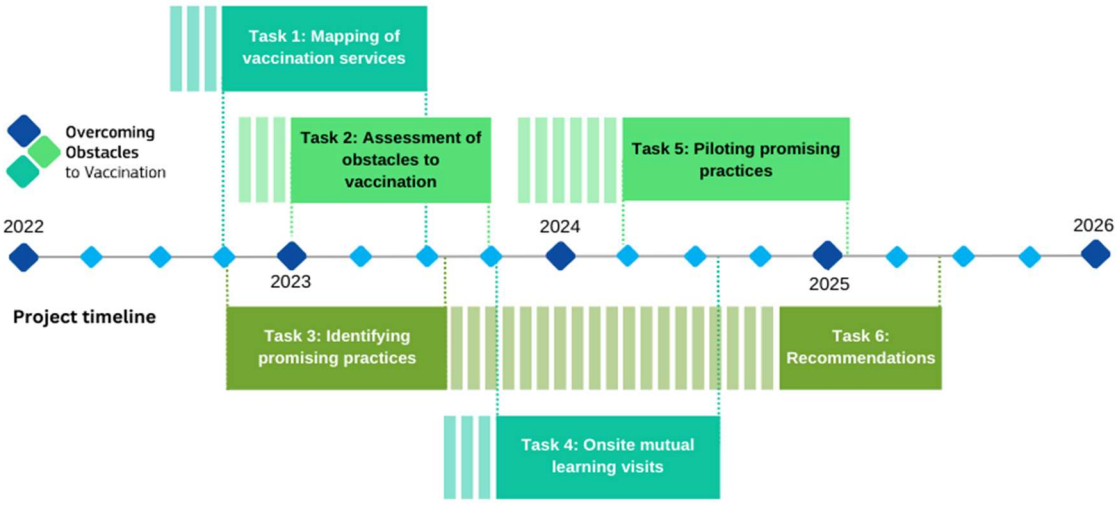
More details about the pilots:

Reminder schemes	*Catalonia*	**Target group**	Children aged 4 years who missed the **1st or 2nd dose of the MMR** vaccine, as well as their parents and caregivers, while involving healthcare professionals in vaccination outreach.
		Topic	Addresses the **growing number of missed doses**, improving public knowledge about vaccines and illnesses, overcoming barriers like language and literacy issues, and enhancing access to vaccination services.
		Design	A **multi-disciplinary team of 20 experts**, implementing reminder schemes **through SMS** and collaborating with paediatricians, schools, and general practitioners to promote vaccines.
	Murcia	**Target group**	**Parents of 4-year-old children** who missed the 2nd MMR dose.

		**Topic**	**Increasing MMR vaccination** rates by testing different reminder messages and their impact.
		Design	**Two types of SMS reminders** are sent to parents, and vaccination uptake is **monitored over 6 weeks** to compare effectiveness. A control group (no reminder) is included for evaluation.
	Lithuania 	**Target group**	Parents of **11-year-old children**.
		Topic	Increasing HPV vaccination rates by introducing a reminder system, improving **public awareness**, and enhancing **IT support**.
		Design	A data-driven reminder system is developed and tested, with focus groups, surveys, IT system improvements, and targeted communication to **increase parental awareness and trust**.
	Slovenia 	**Target group**	Parents of children entering **9th grade** (approximately 14 years old).
		Topic	Increasing HPV vaccination rates by reaching children who missed or opted out of initial vaccination through **parental reminders**.
		Design	Reminder letters and information packages are distributed during **parent-teacher conferences**, with coordinated efforts between teachers, healthcare professionals, and paediatricians to facilitate vaccination.
	Croatia 	**Target group**	**60-year-old** patients in Croatia.
		Topic	Increasing TD vaccination rates through better **general practitioner – patient communication.**
		Design	A data-driven reminder system is tested to **inform general practitioners** of their patients' vaccination status, enhance their **engagement**, and ensure timely TD vaccination for 60-year-old individuals.
School vaccinations 	*Netherlands* 	**Target group**	Parents of **9-year-olds** (eligible for DTP and MMR) and **10-year-olds** (eligible for HPV) in underserved areas of New West Amsterdam.
		Topic	Increasing vaccination uptake by **reducing logistical barriers** and understanding parental **drop-off points** in the vaccination journey.
		Design	Vaccination sites are relocated to school buildings, with focus groups for healthcare providers, on-site parent interviews, and **personalised outreach via letters and SMS reminders**.
	Estonia 	**Target group**	**Boys and girls aged 12-18** in eight schools across four regions.
		Topic	Increasing **HPV vaccination** rates by improving vaccine literacy through a **targeted information campaign**.
		Design	Schools receive **HPV vaccine information packages** for students, parents, and teachers before the vaccination campaign, alongside **video lectures** to educate and encourage participation.
Mobile Units	*Austria* 	**Target group**	The pilot seeks to **increase MMR uptake** among young people (15+) and fill vaccination gaps by focusing on those still in apprenticeship schools.
		Topic	Addresses **logistical and financial barriers** by bringing vaccination services directly to schools, eliminating the

			need for appointments, travel, or out-of-pocket expenses.
		Design	The Upper Austria health department, federal health ministry, and school leaders collaborate to **promote vaccine awareness through family and peer networks**, using the "Fit for School" campaign, pre-announced vaccination days, and age-appropriate communication.
	Sweden	**Target group**	This initiative is designed to **increase flu and COVID-19 vaccination rates** among residents, particularly those with a migration background.
		Topic	This pilot seeks to remove **administrative and logistical** hurdles by eliminating the need for appointments, travel, and costs while ensuring clear and accessible health communication.
		Design	Introducing a welcoming and accessible approach to vaccination with the **'Cozy House' initiative** driven by regional and local health authorities, community leaders, nurses, and community health service workers, all working together to **build trust and improve access to health information**.

Once the pilot implementation is complete, we will move into the final phase (Task 6: Recommendations). Insights from the previous phases will feed into a set of final recommendations to overcome physical, practical, and administrative vaccination barriers across EU Member States. The recommendations will be tailored to stakeholders, including policymakers, health authorities, professionals, patients, citizens, and relevant organisations at both EU and national levels.



Pilots' implementation: Learning from peers

As part of the implementation phase of the pilot programmes, a series of online peer support meetings were organised to facilitate mutual learning and exchange among the eight participating countries. These sessions enabled participants to share experiences on the rollout of pilots in their own contexts and to draw on lessons from other EU countries—such as Denmark and Ireland—that had previously implemented similar initiatives.

The discussions centred on three types of pilots: mobile vaccination units, school vaccination programmes, and reminder schemes. Each meeting offered practical insights into best practices, challenges encountered, and solutions tested, with a shared aim of improving pilot implementation.

Mobile Vaccination Units
Countries explored strategies to improve outreach in underserved areas. Examples included Sweden's use of ambulances for vaccination and multilingual communication strategies. Peer exchanges helped countries like Austria and Sweden adapt their outreach, drawing on insights from the Netherlands and Murcia.

School Vaccination Programmes
Discussions focused on addressing barriers such as parental resistance and operational logistics. Estonia, informed by experiences from Ireland and Spain, refined its approach through targeted focus groups. Ireland's use of weekend clinics and Catalonia's direct SMS and call centre outreach were highlighted as effective practices.

Reminder Schemes
Countries trialled SMS and digital reminders, emphasising message tone and GDPR compliance. Catalonia's approach of framing reminders as public health messages was particularly valuable. Continuous exchange on pilot evaluation allowed for dynamic refinement—such as Austria's consideration of pocket cards to improve accessibility.

Through this collaborative process, the peer meetings proved essential in enhancing local adaptations and fostering innovation across contexts.

Mapping vaccination services: Key insights in infographics

A key milestone in the project was the completion of the Mapping Vaccination Services across all EU Member States to identify physical and administrative barriers to vaccination. This exercise offered valuable insights that have shaped the project's next steps by highlighting key challenges.

To make these findings more accessible, four informative infographics are now available, offering a clear overview of the mapped vaccination landscape.

- **Barriers to vaccination** – Key physical and administrative challenges impacting access.
- **Vaccination administrators** – Overview of the various actors responsible for vaccine delivery.
- **Vaccination locations** – A look at where vaccination services are provided across Member States.
- **Vaccination booking systems** – Different approaches to scheduling vaccinations. View infographic

Visit our website here to explore these findings and see how they continue to inform the next phases of the project!

Stay updated

2025 will see the final step of the project with the evaluation of the pilots and recommendations. Our newsletter will provide the latest information about the pilots and will feature insights on the evaluation design, results and the recommendations for future pilots.

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EU law and related documents

For access to legal information from the EU, including all EU law since 1951 in all the official language versions, go to EUR-Lex (eur-lex.europa.eu).

EU open data

The portal data.europa.eu provides access to open datasets from the EU institutions, bodies and agencies. These can be downloaded and reused for free, for both commercial and non-commercial purposes. The portal also provides access to a wealth of datasets from European countries.

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