



TECHNICAL REPORT

Overview of current EU/EEA and UK deployment and vaccination plans for COVID-19 vaccines

Update 2 - 19 November 2020

Key messages

- Deployment and vaccination plans in the EU/EEA and the UK are currently under development and the information presented in this report will continue to evolve in the coming weeks.
- All EU/EEA countries and the UK have initiated the evaluation of available information with the goal to establish *interim* recommendations for first priority groups to be vaccinated. Six countries have already published their interim recommendations, while others but not all have made a list of priority groups but not published.
- Healthcare workers and elderly people (with various age limits across countries) but also with certain comorbidities were mostly considered for prioritisation. It is possible that further prioritisation among these selected priority groups will be needed if available vaccines are in short supply, a likely scenario in the initial phase of the vaccination campaigns.
- As more evidence becomes available about the COVID-19 disease epidemiology and the newly authorised vaccines including information on vaccine safety and efficacy by age- and target group, prioritisation may be updated. Modelling different options for vaccine efficacy and uptake in EU populations is an important tool and will inform decisions on vaccination strategies and estimate their possible impact.
- Regarding logistical considerations for the roll out of COVID-19 vaccination plans, many countries will, as much as possible, make use of existing vaccination structures and delivery services. However, the requirements for cold-chain storage down to -80 C may have implications for this planning.
- Electronic immunisation registries for monitoring of vaccine uptake in the individual and in the population are available at the national or subnational level in twelve countries and developments towards such national systems are on-going in eight further countries. Two countries have an insurance-based system that will facilitate monitoring of vaccine uptake. There is an interest in further countries to initiate development of immunisation registries. Documentation of which vaccine product that has been administered and when are key to the success of these programmes and essential should a safety signal arise for one of the products. Information in these registries could serve as the basis for immunisation cards.

EC request number 139

Date of first request: 15 October 2020

The EC issued a [vaccines strategy](#) for COVID-19 in June 2020 and communications on preparedness for vaccination strategies and vaccines deployment on 15 and 28 October 2020. In this framework, the Commission requested ECDC to provide an overview of the national COVID-19 vaccination strategies and vaccine deployment plans in the EU/EEA countries and the UK.

Date of second request: 6 November 2020

The Commission requested ECDC to provide an up-date of the overview of the current EU/EEA and UK deployment and vaccination plans for COVID-19 vaccines report sent on 22 October 2020.

Date of third request: 10 November 2020

Update on missing countries.

Scope of this document

This document outlines the current developments on EU/EEA and the UK deployment and national vaccination plans for COVID-19 vaccines, including interim recommendations for priority groups, evidence to be considered for the prioritisation of target groups, logistical considerations and monitoring systems for vaccine coverage, safety, effectiveness, and acceptance.

Target audience

The overview is intended for internal use, including by the European Commission, the Health Security Committee, the EU/EEA NITAG COLLABORATION and the national Public Health Institutes.

Background

In its communications of the 15 October 2020, the Commission presented the key elements to be taken into consideration by EU/EEA countries for their COVID-19 vaccine deployment and vaccination strategy plans, in order to prepare the European Union/European Economic Area (EU/EEA) and its citizens for when a safe and effective vaccine is available, as well as priority groups to consider for vaccination first [1-4]. Considerations on introduction and prioritisation of COVID-19 vaccination in the EU/EEA member States have also been documented in a recent ECDC publication [5] in addition to a WHO publication on strategic considerations in preparing for deployment of COVID-19 vaccine and vaccination in the WHO European Region [6,7].

Methods

The information provided in this report was collected from the following sources:

Survey

On 20 October 2020, ECDC sent by e-mail to the EU/EEA NITAG collaboration members (27 EU member states, 3 EEA countries and the UK) [8]. Countries were asked to provide information on their vaccine deployment plans (final or in development) and a link to the document if available, information on interim priority groups for vaccination if selected, evidence to be considered upon selection, logistical considerations and any product specific monitoring information. The six questions were open-ended. See survey questions in annex 1.

EU/EEA NITAG collaboration dialogue meeting

As a follow-up to the survey, ECDC organised a dialogue meeting on the 23 October 2020 with the EU/EEA NITAG collaboration (hereafter named NITAG collaboration) with invited observers from

public health, regulatory agencies, ministries, and the Joint Action on Vaccination (JAV) to enable countries to further share details of their vaccination plans and hold a discussion on best practices.

Bilateral follow-up contacts

Bilateral follow-up contacts were organised either through e-mails or telephone calls with the missing six countries.

Results

A response was received from 31/31 countries. All responding countries have initiated deployment and vaccination plans for COVID-19 vaccines.

Interim recommendations of priority groups

The following six countries have published *interim* recommendations/advice for priority groups to be vaccinated first: Belgium [9], Czechia [10], France [11], Luxembourg [12], Sweden [13] and the United Kingdom [14]). The rest of the countries are currently holding NITAG meetings/expert group meetings and developing recommendations for first priority groups to be vaccinated (see Table 1). Preliminary information identify that age-based recommendations (age cut off between 60 and 70 years), healthcare workers and persons with underlying conditions could be prioritised.

Table 1: Overview of priority groups in no specific order of COVID-19 vaccination interim recommendations in EU/EEA Member States and the UK as of November 16, 2020

Country	Priority groups identified				Comments
	Older persons	Adults with co-morbidities	Health care workers	Other risk groups	
Austria	Recommendations under development				
Belgium [9]	65+	People aged 45-65 years with comorbidities	Yes		This may be modified as new data and information becomes available
Bulgaria	Recommendations under development				
Croatia	Recommendations under development				
Cyprus	65+	Yes	Yes	Essential workers eg armed forces, police, security forces, social services, firemen, ambulance services, staff working in elderly people homes.	This may be modified as new data and information becomes available.
Czechia [10]	65+	Yes	Yes	Staff in social services and part of critical infrastructure	These groups are being considered
Denmark	Recommendations under development				
Estonia	70+	Yes	Yes	Social care workers	
Finland	Recommendations under development				
France [11]	65+	Yes	Yes	Social care	To be

				workers	updated as soon as the results of modelling will be available
Germany	Recommendations under development				
Greece	Recommendations under development				
Hungary	60+	Yes	Yes	Critical infrastructures	
Iceland	Recommendations under development				
Ireland	Recommendations under development				
Italy	Recommendations under development				
Latvia	Age cut-off not specified yet	Yes	Yes		These groups are being considered
Liechtenstein	Recommendations under development				
Lithuania	Yes, but age cut-off not specified yet	Yes	Yes		
Luxembourg [12]	65+		Yes	Vulnerable individuals (according to national definition for COVID-19 vulnerability)	
Malta	Recommendations under development				
Netherlands	Recommendations under development				
Norway	Recommendations under development				
Poland	Yes, but age cut-off not specified yet		Yes	Social care workers	
Portugal	Recommendations under development				
Romania	65 +	Yes	Yes	Social care workers and staff of critical infrastructure	These groups are being considered. Vaccination strategy is now in the final step of approval at the government level
Slovakia	Recommendations under development				
Slovenia	Yes, but age cut-off not specified yet		Yes	Other risk groups (especially residents in long-term care facilities and elderly)	
Spain	Recommendations under development				
Sweden [13]	70+		Yes	Risk groups for severe COVID-19 disease	
United Kingdom [14]	80+ as first priority, then 75+, then 70+ etc.	Yes (High-risk adults under 65 years of age)	Yes	Workers on older persons' care homes	

However, all countries specify that more information about the specific EU authorised vaccines are needed before any final recommendations can be made overall and it is likely that product-specific recommendations will be needed. Further, it may be necessary to prioritize further among the three priority groups selected due to limited vaccine availability.

Evidence to be considered for prioritisation of target groups

Concerning the evidence that will be or have been considered in order to prioritise the target groups for vaccination (e.g. role of impact modelling of different vaccination strategies, enhanced epidemiological surveillance, reported vaccine safety and efficacy by age and target group from phase 3 trials), a total of 22 countries provided a response (see Table 2). Major considerations include epidemiological surveillance data, analysis of country specific data (e.g. on hospitalization and mortality) and information from the literature on groups at higher risk of severe disease and death due to COVID-19 disease and its complications.

Over half of the countries responded that they will use mathematical modelling as a tool for prioritisation of target groups. Using mathematical modelling varying vaccine efficacy, vaccine uptake in the population and vaccination of different age groups can be utilized to assess the impact of chosen vaccination strategies with the different assumptions. Many countries also highlighted that information on the specific vaccine products from the phase 3 studies will be taken into consideration once available. This includes reported vaccine safety and efficacy by age and target group, how vaccines will be stored and administered as well as their availability. It is at the time of this survey unknown if any of the vaccines will be successful and received EU authorisation.

Table 2. Overview of evidence that has been or will be considered for the prioritisation exercise of target groups to be vaccinated by country

Country	Modelling	Epidemiological data	Literature review	Transmission data	Ethics	Vaccine data	Acceptance	Guidelines (EU, WHO, ...)	Still in planning stage
Austria	Yes				Yes				
Belgium		Yes							
Bulgaria									Yes
Croatia		Yes							
Cyprus									
Czechia								Yes	
Denmark								Yes	
Estonia		Yes				Yes		Yes	
Finland	Yes			Yes		Yes			
France		Yes	Yes	Yes		Yes			
Germany	Yes	Yes			Yes		Yes		
Greece		Yes	Yes		Yes	Yes			
Iceland									Yes
Ireland		Yes	Yes		Yes	Yes			
Italy						Yes			
Latvia*									Yes
Liechtenstein									Yes
Lithuania		Yes				Yes			
Luxembourg	Yes	Yes							
Malta	Yes					Yes			
Netherlands	Yes	Yes				Yes			
Norway		Yes							
Poland		Yes						Yes	
Portugal									Yes
Romania									Yes
Slovakia									
Slovenia	Yes					Yes			
Spain	Yes	Yes				Yes			
Sweden	Yes	Yes							
United Kingdom	Yes	Yes (Including serological data)		Yes					

Some countries responded they wish to see and will consider guidelines from ECDC, WHO and US CDC. Ethical considerations were mentioned by four countries and includes involving ethics expertise ethical committees and using ethical frameworks.

Table 3: Further details on evidence reported to be considered for prioritisation of target groups, by country

Country	Evidence will be/have been considered in order to prioritise the target groups for vaccination
Austria	Evidence to be considered is under discussion in the NITAG. Modelling will be used, and the bioethics committee involved.
Belgium	Prioritised groups were based on evidence from literature review of risk groups for severe COVID-19, and in-depth analysis of the profile of COVID-19 hospitalised cases (national database of Sciensano, the public health institute, with an approximate coverage of 70% of hospitalised cases).
Bulgaria	Under development
Croatia	The prioritisation will rely on data from enhanced epidemiological surveillance and the importance of essential services.
Czechia	A draft of prioritised target groups will be prepared by NITAG, in consultation with different departments of Ministry of Health, NIPH, scientific and professional societies.
Cyprus	No further information available
Denmark	Denmark will consider guidelines from EU and WHO when deciding on prioritisation of target groups.
Estonia	Evidence to be considered include epidemiological surveillance data, clinical data, ECDC recommendations and data from other countries. The final decisions will be made taking into account the results from phase III trials and the recommendations from the local NITAG.
Finland	The public health institute will provide different case scenarios based on modelling using Finnish data of COVID-19 hospitalized and deceased patients, contact matrix data (Polymod), transmission data and what will be known about the VE of different vaccine candidates.
France	Literature review of severe disease risk factors and of professional exposure as well as French epidemiologic surveillance will be considered. Conclusions will be used to define different vaccination strategies that will be tested in a transmission model. Results from clinical trials by age group will also be considered as soon as available.
Germany	Evidence to be considered include systematic reviews on risk factors and data from clinical trials: efficacy, safety. Furthermore, mathematical modelling, epidemiological surveillance, an ethical framework and results from acceptance studies will be considered.
Greece	Literature on relative risk of several potential target groups for vaccination, available data from national epidemiological surveillance, reported efficacy and safety data by age and other target group from phase 3 trials.
Hungary	No further information available
Iceland	No further information available
Ireland	Evidence will be considered by the COVID-19 Immunisation Strategy Group and NIAC/NITAG. This includes international literature considering local epidemiology and current status on disease risk, reference material and guidelines from CDC, PHE and WHO. Recommendations will lie within appropriate ethical framework. The general approach taken by NIAC/NITAG for prioritization is based on equity, justice, disease burden, severity in risk groups, impact on society, availability of vaccines, vaccine-specific information from clinical trials, operational feasibility. Vaccine data (safety, effectiveness) will influence final recommendations.
Italy	An ad hoc expert group will elaborate recommendations taking into account the characteristics of the vaccine and different vaccination strategies.
Latvia	No further information available
Liechtenstein	No further information available
Lithuania	COVID-19 disease background and epidemiological patterns, available data from vaccines clinical trials etc
Luxembourg	Basic information at this stage, and assuming that the vaccine efficacy relies in the prevention of symptomatic infection (and not in the prevention of the transmission). Incorporation of additional information (*such as available national data) will allow for further development (and possible changes in the prioritisation strategy). Luxembourg are currently looking for collaboration to incorporate national epidemiologic surveillance into a modelling tool to inform the national prioritisation strategy.

Malta	Several multi-faceted considerations will be taken. The role of impact modelling of different vaccination strategies and the reported vaccine safety and efficacy by age and target group from phase 3 trials are two important pillars.
Netherlands	The role of impact modelling of different vaccination strategies, enhanced epidemiological surveillance, reported vaccine safety and efficacy by age and target group from phase 3 trials will be used to inform prioritization of target groups.
Norway	Evidence to consider for prioritization of target groups include risk factors for morbidity / mortality, available information/reported vaccine safety and efficacy by age and target group. Mathematical modelling will also be used. Ethics will be considered by an external advisory group.
Poland	The NITAG recommendation on prioritisation groups for COVID-19 immunization is based on the epidemiological data on risk groups presented in ECDC reports.
Portugal	No further information available, NITAGs still to be convened.
Romania	No further information available
Slovakia	No further information available
Slovenia	Slovenia has two working groups: NITAG + MoH. These will consider available evidence on vaccine safety and efficacy by age, availability (No of doses) of vaccine, characteristics of vaccine (preventing transmission?) Modelling will be used as will an EU vaccination strategy and recommendations of the expert group which has been already established.
Spain	Prioritisation is under development evidence to be considered include epidemiology data as well as efficacy and safety of each vaccine. Mathematical modelling will also be considered.
Sweden	Since no data are available on VE, priority groups are based on clinical/epidemiological evidence on risks for severe COVID-19 disease. Modelling work on possible vaccine impact is under way.
United Kingdom	Evidence to be considered include existing and enhanced surveillance systems for COVID-19, including serological epidemiology surveillance. National data on data on hospitalization, severity of disease, mortality, risk of infection by occupation, evidence on transmission in the population etc. will be used. Mathematical modelling is ongoing.

Logistical considerations

For the logistical considerations, countries were asked how vaccines will be delivered (e.g. dedicated vaccination centres, routine GP practices, pharmacists etc), how the identified target groups will be invited to be vaccinated (invitation letter sent etc) and any further details on the organisation of vaccination campaigns that could be helpful to others. A total of 18/31 countries provided information on the logistical considerations around vaccine deployment, while the remaining countries are still in the very early planning stage (see Table 4).

More than half of the countries specified that they are planning to use and build upon existing vaccination delivery services and structures for the roll out of COVID-19 vaccination plans. Some countries said that in the initial phases delivery of vaccines would be through general practitioners and primary health centres and five countries responded that vaccines would be delivered through designated vaccination centres. The replies from countries indicate that for many, the structures currently used for the delivery of seasonal influenza vaccines, in particular, would be leveraged. Some countries mentioned the need for a bigger pool of skilled workforce to administer the vaccines as more doses will become available and further work is therefore needed.

It is not clear as of November 16 whether vaccine storage and cold chain requirements for future COVID-19 vaccines will be different than for other routine vaccines. One country raised the issue that in their country, vaccine distribution using regular vaccination routes such as through general practitioners or pharmacies may not be feasible if there are multiple dose vials, large minimal quantities and cold-chain requirements of some vaccines (such as storage temperatures of -20° to 80°C). Other solutions may have to be sought, such as mass vaccination centres. As more information on the vaccine requirements becomes available, vaccine storage, transport and cold chain requirements will need to be carefully assessed in the context of EU/EEA and UK logistical plans for delivery.

Table 4: Overview of planned COVID-19 vaccine delivery settings in the EU/EEA Member States and the UK

Countries	Use of existing vaccination structures / influenza vaccine structures	Dedicated vaccination centres	GP practices	Health care centres	Other delivery settings	Still in planning stage
Austria		Yes	Yes		Company medical officers, mobile vaccination teams	
Belgium						Yes
Bulgaria						Yes
Croatia	Yes	Yes	Yes			
Czechia		Yes	Yes		Hospitals, workplace	
Cyprus						Yes
Denmark						Yes
Estonia	Yes					
Finland	Yes					
France						Yes
Germany		Yes (initial stages)				
Greece						Yes
Hungary						Yes
Iceland				Yes		
Ireland						Yes
Italy	Yes					
Latvia						Yes
Liechtenstein						Yes
Lithuania	Yes	Yes	Yes	Yes		
Luxembourg		Yes	Yes (if feasible)	Yes		
Malta	Yes					
Netherlands	Yes					
Norway	Yes					
Poland	Yes					
Portugal						Yes
Romania						Yes
Slovakia						Yes
Slovenia	Yes			Yes		
Spain						Yes
Sweden		Yes		Yes		
United Kingdom						Yes

Monitoring systems vaccine coverage, safety, effectiveness, and acceptance

Countries were asked to provide information on how vaccine product-specific monitoring systems will be organised to document vaccine coverage, safety, effectiveness and acceptance. See table 5, 6.

Among the countries providing information on monitoring systems for vaccination coverage, safety, and effectiveness, the following groups can be distinguished (see Table 5):

1. Countries with electronic immunisation registry system currently in place and/or improving their electronic system in place. This group includes: Belgium, Croatia, Denmark, Iceland, Finland, Italy, Norway, Portugal, Slovenia, and Sweden. In Denmark, Finland, Norway and Sweden the immunisation information registry can be linked to health outcome and can also provide data on safety and effectiveness. Many countries, including Belgium and Finland reported that they may be able to report monitoring information by vaccine brand.
2. Countries currently developing or currently considering ad hoc electronic system for COVID-19 include: Austria, Greece, Lithuania, Luxembourg, Malta, Netherlands, Poland, Spain
3. Countries that will use other systems already in place: Czechia (insurance), Germany (insurance), Slovenia
4. Estonia will implement an electronic health card (individual record of vaccination, not currently covering vaccination in the private sector)
5. Countries not giving any specific information or who are currently working on it (without any other information disclosed): Bulgaria, Cyprus, France, Hungary, Ireland, Latvia, Liechtenstein, Romania, Slovakia.

Table 5. Overview of system in place for documentation of individual vaccine status.

Countries	Countries with electronic immunisation registry system currently and/or improving their system	Countries developing / considering ad hoc electronic system	Countries who will use other systems already in place	Countries developing a specific electronic immunisation card	Manual recording
Austria		Yes			
Belgium	Yes				
Bulgaria					Yes
Croatia	Yes				
Czechia			Yes, insurance		
Cyprus					Yes
Denmark	Yes				
Estonia	Yes			Yes	
Finland	Yes				
France					Yes
Germany			Yes, insurance		
Greece		Yes			
Hungary					Yes
Iceland	Yes				
Ireland					Yes
Italy	Yes				
Latvia					Yes
Liechtenstein					Yes
Lithuania		Yes			
Luxembourg		Yes			
Malta		Yes			
Netherlands		Yes			
Norway	Yes				
Poland		Yes			
Portugal	Yes				
Romania					Yes
Slovakia					Yes
Slovenia	Yes				
Spain		Yes			
Sweden	Yes				
United Kingdom					Yes

Safety is usually in the mandate of the National Regulatory Agencies but in some countries, it is a shared responsibility between public health authorities and regulators (e.g. Norway). However, if a safety signal will occur this will likely impact the vaccination campaigns and public health will have to get involved in all countries to facilitate investigations. A few countries reported on tools that will be used for safety monitoring. An expert group will review safety events in Belgium. Poland and Italy are strengthening their current existing system for COVID-19 safety monitoring purpose. Netherlands and Spain will use their routine safety monitoring system without further details provided.

Belgium, Finland, Germany, Latvia and the Netherlands are planning for either case-control or cohort studies to assess vaccine effectiveness or safety.

Table 6: Further details on monitoring details for vaccine coverage, safety, effectiveness and safety, by country

Country	Information on how product-specific monitoring systems will be organised to document vaccine coverage, safety, effectiveness and acceptance
Austria	Use of electronic documentation system: - Piloted with influenza-vaccines in some parts of Austria starting in October
Belgium	Monitoring strategy currently under-development: Vaccine coverage - Option to calculate brand-specific vaccine coverage by priority group using vaccine registry Vaccine safety: - Voluntary reporting of adverse events by vaccinees: participation to the ACCESS project (Lareb coordination) for the use of a web application - Reporting of adverse events by health professionals: notification through integrated eForm - Panel of experts for the assessment of adverse events of special interest - Background incidence: For rare events, data from the ACCESS project should be used considering the size of the population to be vaccinated in Belgium. For less rare events, they will investigate the feasibility to estimate national background incidence of certain events Investigation of breakthrough cases: the methodology is still to be defined. Vaccine effectiveness: - ILI (sentinel general practitioners) and SARI (sentinel hospitals) surveillance adapted to COVID-19, test negative design - ILI surveillance in nursing homes adapted to COVID-19, test negative design - Linking the COVID-19 laboratory test results to the vaccine registry?
Bulgaria	Under development
Croatia	Same as for other vaccines: - Through the routine immunization coverage system (immunisation registry), - Adverse event following immunisation reporting system - Study on vaccine safety. If the immunisation registry is fully operational at the time vaccination begins, effectiveness could be estimated through a data linkage system.
Cyprus	Under development
Czechia	Vaccine specific product monitoring: - Not fully specified yet - Standard systems as used for other vaccinations are expected, e.g. ➢ GPs documentation = patient personal record (vaccination date, vaccine type and batch) ➢ reporting to the health insurance information systems Safety, effectiveness,: - The State Institute for Drug Control (SÚKL - http://www.sukl.cz/) will oversee everything for COVID-19 vaccines, as with other vaccines and drugs.

	<ul style="list-style-type: none"> - The State Institute for Drug Control is a Czech government agency responsible for regulation of the safe production of pharmaceuticals in the country, clinical evaluation of medicines and for monitoring the advertising and marketing of both medicines and medical devices. Its powers stem from the Act on Public Health Insurance.
Denmark	<p>Vaccine coverage, effectiveness:</p> <ul style="list-style-type: none"> - Electronic immunization registry (DDV). - Linked to other registries to monitor product specific uptake, coverage and effectiveness. <p>Vaccine safety:</p> <p>Similarly, vaccine safety is planned to be monitored by linking suspected adverse reactions and selected adverse event of special interest from the hospital discharge register, with information about vaccination-product and batch numbers from DDV.</p>
Estonia	<p>Vaccination coverage, acceptance and effectiveness are under the health board administration.</p> <p>Safety is under State Agency of Medicines.</p> <p>Vaccination card for electronic proof of vaccination currently under-development with WHO. Currently being planned.</p>
Finland	<p>Nationwide post licensure impact monitoring including coverage, effectiveness and safety:</p> <ul style="list-style-type: none"> - Link between vaccine, outcomes and adverse event possible through national vaccine register, population registry and nationwide personal number - Vaccine register allow the recording of trade name and Lot number - Insurance data on usage of drugs which can be used to amplify understanding on morbidity - Cohort design preferred rather than test negative design for the monitoring of effectiveness - Use of sentinel surveillance not excluded - Preparatory work currently undergoing, including discussion with clinicians on which ICD to code health outcomes
France	<p>Not yet established.</p> <p>Monitoring systems will depend on the deployment plan for COVID-19</p> <p>Acceptance studies are and will be regularly conducted by the National Public Health Agency.</p> <p>France possesses different system information (SI) to monitoring storage, shipping and pharmacovigilance. At that stage, France is working on one SI to aggregate all those systems in order to have an overall view.</p>
Germany	<p>Vaccine coverage:</p> <ul style="list-style-type: none"> - A stand-alone central electronic database currently under development - Telephone surveys (subsequent surveys), surveys among hospital staff, and insurance claims data will also be implemented <p>Vaccine effectiveness:</p> <ul style="list-style-type: none"> - Targeted studies (hospital-based case-control study) <p>Vaccine safety:</p> <ul style="list-style-type: none"> - Cohort study (using an app) - Pregnancy register - Routine observed-vs-expected analyses based on country background incidences <p>Vaccine acceptance:</p> <ul style="list-style-type: none"> - Subsequent surveys
Greece	<p>An electronic vaccination registry will be used. This is being developed for the purpose of monitoring vaccination for COVID-19 (and hopefully will be the basis for a vaccination registry for all vaccines in the future) and will be linked to the existing "electronic prescription system" and existing "therapeutic protocol systems" which exist for selected diseases.</p>
Hungary	<p>No further information available</p>
Iceland	<p>National Vaccination Registry.</p>
Ireland	<p>Currently under development.</p>
Italy	<p>The electronic platform for registering vaccination activities will be used.</p> <p>Effectiveness and Safety:</p> <ul style="list-style-type: none"> - A specific surveillance system for adverse events and effectiveness under

	development by the Italian medicine Agency.
Latvia	No individual record on vaccine status. Number of distributed does available.
Liechtenstein	Under development
Lithuania	Vaccination coverage will be monitored by e-health system as all vaccination records have to be provided to e-health. Safety monitoring will be done by adverse event following immunisation monitoring system. Surveillance data and vaccination coverage data will be used for evaluation of the effectiveness. The acceptance of vaccine should be evaluated by the surveys of population attitude to vaccine
Luxembourg	Vaccination registration e-tool (ad hoc system for COVID-19 vaccine) under development: <ul style="list-style-type: none"> - Use by vaccine provider - Send appointment invitation and reminder (E appointment system) - Deliver vaccination certificate - Vaccine registration tool Efficacy: <ul style="list-style-type: none"> - Linkage Vaccination registration e-tool with COVID-19 cases database (efficacy) Separate Existing Pharmacovigilance surveillance system Acceptance: <ul style="list-style-type: none"> - Intention to vaccinate (population survey) undertaken in September - Survey to be repeated to see the trend and tailor campaigns. - Large media campaign on large scale testing, conveying the concept of herd immunity and cocooning
Malta	Implementation of an effective product-specific monitoring system under development. Safety: <ul style="list-style-type: none"> - Mandate of the Maltese national medicine agency
Netherlands	National register currently under discussion. Effectiveness: <ul style="list-style-type: none"> - Through existing platform Safety: <ul style="list-style-type: none"> - National pharmacovigilance centre (safety monitoring agency)
Norway	The Norwegian Institute of Public Health is responsible for establishing a plan for follow-up of vaccine efficacy/effectiveness, safety and vaccination coverage. Surveillance of COVID-19: <ul style="list-style-type: none"> - Norwegian Surveillance System for Communicable Diseases (MSIS) and the laboratory database (MSIS Lab database) Norwegian medicine agency electronically (Norwegian injury registration system): <ul style="list-style-type: none"> - Surveillance and monitoring of vaccination - national health registries - Surveillance of COVID-19 vaccination - Norwegian Immunisation Registry (SYSVAK) - Suspected adverse events after immunisation will be reported by healthcare professionals to BIVAK registry at NIPH - Patient reported adverse events are reported to the Norwegian Medicines Agency Other national health registries: <ul style="list-style-type: none"> - Emergency register for COVID-19 (Beredt-19), Norwegian patient register (NPR) and a possible link with the Norwegian Registry for Primary Health Care (NRPHC) and the Norwegian Cause of Death Registry (DÅR)
Poland	Details on the documentation system for vaccination are being determined. An electronic system linked to COVID-19 data is being considered. A strengthened surveillance of the vaccine safety system (beyond routine pharmacovigilance) is under development.
Portugal	Dedicated Information Systems that are in place will include these new vaccines (Monitoring of vaccine coverage and vaccine safety).

	Vaccine coverage will be monitored through the National online platform for registry and management of vaccines and vaccination (VACINAS), coordinated by the Directorate-General of Health (DGS). Safety and Effectiveness: National Medicine Authority. Acceptance: research institutes.
Romania	No further information provided
Slovakia	No information collected
Slovenia	Use of Immunisation information registry (eRCO) and national database on confirmed COVID-19 cases. In accordance with the regulations, the distribution and administration of COVID-19 vaccines will be closely monitored, as well as monitoring of possible side effects.
Spain	Vaccine coverage <ul style="list-style-type: none"> - Specific COVID-19 vaccination registry under development. - Data can be used for the monitoring of effectiveness. Safety <ul style="list-style-type: none"> - current pharmacovigilance system in place Acceptance <ul style="list-style-type: none"> - Surveys
Sweden	The national vaccination register will be adapted for registration of all vaccinations against COVID-19. The work is ongoing right now. It includes legal as well as IT adaptations.
United Kingdom	No further information provided

Acceptance

Belgium and Luxembourg have undertaken acceptance survey in the general population. Luxembourg is also planning one survey among general practitioners. France, Germany, Lithuania and Spain reported that acceptance will be monitored using surveys. No other information was disclosed on acceptance.

Conclusions

This report provides some insight on four aspects of the national deployment plans currently under development: interim recommendations for priority groups, evidence to be considered for prioritisation of target groups, logistical considerations and monitoring systems for vaccine coverage, safety, effectiveness, and acceptance. Deployment plans are under further development and the data presented will evolve in the coming weeks.

All countries are currently developing recommendations for priority groups to be vaccinated. Healthcare workers and elderly people (with various age limit across countries) were mostly considered for prioritisation, but also individuals with chronic conditions leading to higher risk of developing severe COVID-19 disease. In terms of evidence used for considerations for prioritisation of target groups, this is an evolving process that requires continuous update as more information becomes available. Results from phase 3 studies will obviously be an important factor for determining what target groups should be vaccinated first. Mathematical modelling is an important tool that together with epidemiological surveillance data and review of available literature will be central for prioritisation considerations.

Regarding logistical considerations for the roll out of COVID-19 vaccination plans, many countries responded that they will, as much as possible, make use of existing vaccination structures and delivery services. Sharing more detailed country plans, on which settings will be used for administration of vaccines for easy access for target populations, and if and how countries are planning for an adequate amount of skilled workforce available for providing vaccines, would be helpful. Country plans for vaccine storage, transport and cold chain requirements will become clearer as further information about COVID-19 vaccine characteristics become available, such as the potential need for additional ultra-low temperature cold chain and how this will be managed.

Development of electronic immunisation registry systems for COVID-19 vaccine monitoring purpose is ongoing in some countries with currently no existing electronic registry. Further description of these systems is required to understand what type of information can be provided at point of clinical care, at population level and link this electronic system with health outcome databases. In those settings where no electronic system is planned to be deployed, a comprehensive overview of methods to be used for monitoring purpose should be undertaken and guidance provided.

Several activities will be undertaken by ECDC to support EU/EEA countries in their efforts to prepare a vaccination plan and to implement monitoring system to document safety, effectiveness and vaccination coverage/acceptance: a periodical mapping of deployment plan for COVID-19 vaccines; mathematical models on different vaccination strategies for various target groups and vaccines; close collaboration with WHO EURO in order to align principles and actions through the development of the COVID-19 vaccine framework in the European Region; a webinar on the topic documentation of vaccination was held on November 17, 2020 and a working group will be formed to support countries developing new immunisation registries, close collaboration with the European Medicine Agency (EMA) for post authorisation surveillance activities; and finally a close collaboration with the EU/EEA NITAG collaboration network, of which ECDC acts as secretariat.

Contributing ECDC experts (in alphabetical order)

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Disclaimer

All data published in this report are correct to the best of our knowledge at the time of publication. Maps and figures published do not represent a statement on the part of ECDC or its partners on the legal or border status of the countries and territories shown.

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Annexes

Annex 1. Survey questionnaire

Please respond by ticking relevant box and respond shortly to the open questions.

I represent the following Member State: _____

1. Is a vaccine deployment plan for COVID-19 vaccines currently under development or already available?
 Yes
 No
 Unknown
2. If yes, would you be able to share the document with ECDC? If in the public domain, please share the link:
3. Have you developed recommendations for priority groups to be vaccinated in the initial phases of the campaigns when vaccines are in short supply?
 Yes, please provide further information:
 No
 Not yet, but currently under development
 Unknown
4. What evidence will be/have been considered and by whom in order to prioritise the target groups for vaccination (e.g. role of impact modelling of different vaccination strategies, enhanced epidemiological surveillance, reported vaccine safety and efficacy by age and target group from phase 3 trials ...)?
Please provide further information:
5. Please provide information on how vaccines will be delivered (e.g. dedicated vaccination centres, routine GP practices, pharmacists etc.), how the identified target groups will be invited to be vaccinated (invitation letter sent, ...). Please provide further details on the organisation of vaccination campaigns that can be helpful to others.
6. Please provide information on how product-specific monitoring systems will be organised to document vaccine coverage, safety, effectiveness and acceptance.