**TECHNICAL** REPORT

# One-day in-action review (IAR) protocol in the context of COVID-19

www.ecdc.europa.eu

**ECDC** TECHNICAL REPORT

# One-day in-action review (IAR) protocol in the context of COVID-19

This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated by Jonathan Suk.

*Contributing authors*

Paul Riley, Jonathan Suk

*Acknowledgements*
We would like to thank the training team in the Emergency Response Department of Public Health England, namely Paul Furtado and Victoria King, as well as Flavia Riccardo, ISS, Italy, for helping to develop the draft protocol and road testing it in an online workshop under direct service contract ECD.11329.

Suggested citation: European Centre for Disease Prevention and Control. One-day in-action review (IAR) protocol in the context of COVID-19. Stockholm: ECDC; 2021.

Stockholm, March 2021

ISBN 978-92-9498-535-4
doi: 10.2900/56495
Catalogue number TQ-02-21-316-EN-N

# Contents



# Figures



# Tables

# Abbreviations

| | |
|---|---|
| AAR | After-action review |
| COVID-19 | Coronavirus disease 2019 |
| CSC | Crisis standards of care |
| ECDC | European Centre for Disease Prevention and Control |
| EMT | Emergency medical team |
| EU/EEA | European Union/European Economic Area |
| EWRS | Early Warning and Response System of the European Union |
| IAR | In-action review |
| ICU | Intensive care unit |
| IHR | International Health Regulations |
| IPC | Infection Prevention and Control |
| ISS | Istituto Superiore di Sanità |
| PHEIC | Public Health Emergency of International Concern |
| POE | Points of Entry |
| PPE | Personal Protective Equipment |
| rescEU stockpile | strategic stockpile of medical equipment to help EU countries during the COVID-19 pandemic. |
| SARS | Severe Acute Respiratory Syndrome |
| MERS-CoV | Middle East Respiratory Syndrome Coronavirus |
| TESSy | The European Surveillance System |
| UNICLAM | Università degli studi di Cassino e del Lazio Meridionale |
| WHO | World Health Organization |

# Introduction

In order to ensure an optimised public health response to COVID-19, ECDC and WHO advocate conducting in-action reviews (IARs). ECDC has previously published general guidance entitled 'Conducting in-action and after-action reviews of the public health response to COVID-19' [1]. This document complements the existing guidance, identifying key steps that can be followed to implement a one-day in-action review (IAR). Given the time constraints that many public health agencies are currently facing, a one-day IAR is convenient as it can be conducted either in a single day, or across two half-days. Elements from this protocol could also be used to develop an even shorter IAR (e.g. a half-day IAR).

## Scope and purpose of this document

This document aims to support the implementation of in-action reviews (IARs) focused on the public health response to COVID-19. IARs seek to identify best practice and lessons learned, while applying these insights in a tighter time-scale to improve the outcome of an ongoing response. In-action reviews may also include a 'forward-look' to assess strategic options in the upcoming phases of the pandemic.

This document is designed to complement existing ECDC and World Health Organization (WHO) documentation on after-action Reviews (AARs) and IARs, and it draws on ECDC guidance documents related to emergency preparedness planning and response - in particular those published in the context of COVID-19.

## Target audience

Public health authorities in EU/EEA Member States, EU candidate and potential candidate countries and European Neighbourhood Policy countries.

# Background

## Prior experience of conducting after-action reviews in the EU/EEA

As previously described by ECDC, while an after-action review will seek to identify good practice and areas of improvement at the end of an event, the scope and duration of the response to COVID-19 may create the need for more targeted and relatively rapid reviews of response operations - in-action reviews - during the event [1].

Prior to publishing guidance on conducting IARs and AARs in relation to COVID-19, ECDC published guidance entitled 'Best practice recommendations for conducting after-action reviews to enhance public health preparedness' [2]. Based on these principles, ECDC then commissioned the AWARE project in 2019, with the aim of conducting a number of national AARs in relation to West Nile virus transmission in Europe during an unprecedented outbreak of the disease in 2018 [3].

The AWARE project offered proof-of-concept for an innovative mixed-methods approach to conducting AARs and IARs. This project successfully conducted AARs with a standard methodology meeting ECDC-defined quality requirements in four EU/EEA countries, offering a proof of concept for an approach that is applicable in very different national contexts. The experience of conducting the AARs has also informed this document.

In October 2020, two training workshops on IARs were conducted for colleagues working in preparedness and response across Europe. The workshops were developed in conjunction with Public Health England (PHE), based on the general guidance referred to earlier [1] and a draft AAR protocol developed by colleagues at Istituto Superiore di Sanità (ISS) and Università degli studi di Cassino e del Lazio Meridionale (UNICLAM). In light of experience from the development of the workshops and the feedback from participants, the methodology was refined before being presented in this document.

## In-action reviews in the context of COVID-19

Both IARs and AARs can support the enhancement of preparedness for and response to future outbreaks, and improve health systems. However, IARs are not proposed as alternatives to AARs, since IARs are designed to contribute to the improvement of the ongoing COVID-19 response.

In-action reviews for COVID-19 may be useful in both national and sub-national settings. The scale, impact, duration and different phases of the COVID-19 pandemic point to the necessity of conducting IARs which focus on specific aspects of the public health response (i.e. specific response areas - see Table 1). Therefore, an IAR can be viewed as a modular assessment process that could be repeated several times in the context of the COVID-19 response (multiple IARs) in the same country with different topics or at various scales. This enables stakeholders engaged in the COVID-19 response to participate while keeping their time commitment to a minimum.

Due to the time constraints of public health staff involved in the COVID-19 response, it is advised that countries consider organising a focused one-day debriefing workshop or 'facilitated look-back' session with relevant stakeholders. This session could focus on identifying key strategic issues; good practices that could be reinforced; challenges that need to be overcome, and immediate solutions that could be readily implemented. According to WHO, conducting multiple IARs at national and subnational levels could be a productive approach [4].

Given the need to limit the time commitment for those stakeholders engaged in the COVID-19 response, the objective of the IAR should be well defined, and its scope narrowed down to one or two strategic response areas (Table 1) or core pillars for effective national coordination of the COVID-19 response, as defined by WHO [5]. The scale of the analysis (national and/or sub-national) should also be decided in advance. Annex 3 provides an extensive list of trigger questions to guide IAR discussions in each of the strategic response areas. For a one-day workshop a limited number of trigger questions should be selected to ensure a thorough review of the response areas in focus.

**Table 1. Response areas relevant to the public health response to COVID-19**

| Response area |
|---|
| Emergency preparedness planning and national coordination |
| International coordination and collaboration |
| Cross-sectoral coordination and collaboration |
| Strategic national stockpiles |
| Incident management |
| Situational awareness |
| Surveillance |
| Laboratory systems and testing strategies |
| Case investigation and management |
| Healthcare and long-term care facilities |
| Non-pharmaceutical interventions |
| Risk and crisis communication |
| Research and development |

# Why a one-day workshop format?

People currently responding to COVID-19 are the best stakeholders to involve in an IAR as they are those best-informed of ongoing activities and those most likely to benefit and implement the results of the IAR. Unfortunately, they are also the busiest people at this time. Therefore it is unlikely they would be able to dedicate more than one day to a review exercise. For this reason, this report proposes an operational and methodologically structured approach to a one-day exercise that aims to optimise IARs conducted in a limited time-frame.

It is acknowledged that even a one-day IAR may be challenging given the context of COVID-19. Nevertheless elements from this document may be useful for designing an even shorter, more targeted IAR.

There are a number of guidance documents and tools available to assist with the design and implementation of IARS and these are listed in the references.

# Roadmap for implementing an IAR on COVID-19

## One-day workshop format

The following sections present the phases of a possible IAR format, given as a one-day workshop, using the framework shown in Table 2.

**Table 2. Phases for designing and conducting a one-day IAR**

| Design | Prepare | Implement | Disseminate |
|---|---|---|---|
| • Define the scope of the IAR, including which response area to assess;<br>• Conduct stakeholder analysis to ensure appropriate stakeholders and sectors are involved;<br>• Define the IAR team;<br>• Select date and venue (or digital venue) for the IAR. | • Develop a detailed agenda;<br>• Collect background information and/or timeline details for the IAR;<br>• Pilot test digital meeting platform (if applicable);<br>• Brief team members, including facilitators;<br>• Gather necessary material for workshop(s) and interviews. | • Conduct IAR workshop;<br>• Conclude meeting with agreed-upon preliminary findings. | • Collate findings in a brief report; ensure summaries of good practices and lessons learned, supported by evidence where available;<br>• Distribute final report as widely as is feasible and appropriate;<br>• Develop an action plan for implementing key recommendations. |

An IAR focused on specific elements of the COVID-19 response can be developed and implemented following the sample agenda below. Depending on participant availability, a one-day IAR may be conducted across one full day, or as two half-day sessions.

## Sample schedule for one-day workshop

09:00 – 10:00 Session 1: Introductions, scope, and purpose

10:00 – 11:00 Session 2: Timeline of events

11:00 – 12:30 Session 3: Identification and prioritisation of 'pain points'

12:30 – 14:00 Break

14:00 – 14:30 Session 3 (continued): Consensus summary of 'pain points'

14:30 – 15:30 Session 4: Forward look

15:30 – 17:00 Session 5: Corrective measures

17:00 – 17:30 Session 6: Meeting wrap-up and next steps.

The format proposed here takes into account three key stages identified in the ECDC best practice framework for conducting an AAR: data collection and analysis; identification of issues and proposal of solutions. However, it also offers an additional element, a forward look. The forward look takes into account the fact that an IAR is introduced in the midst of an event and therefore any proposed solutions need to be still applicable in the face of plausible scenarios for the trajectory of the pandemic.

Where levels of SARS-CoV-2 community transmission are deemed to be too high to conduct an IAR in person, the IAR can quite feasibly be conducted online using videoconferencing software. Due to time constraints and other limitations as a result of the ongoing outbreak, the proposed schedule may be adjusted to accommodate stakeholder availability.

## Planning (design and preparation)

The IAR planning team should, as a minimum, be composed of a team lead, lead facilitator, subject matter expert, and report writer (rapporteur). Technical support may be required for virtual IARs. The composition of the planning team should be flexible and roles might overlap. Guidance on setting up an AAR/IAR team and facilitating is available from ECDC and WHO [1,2,4-7]. During the planning phase, the planning team should define the aim and objectives of the IAR and the set out the scope and scale of the analysis, taking into account the probable agenda. They will then be able to use this information as a basis for identifying the relevant stakeholders to invite to the IAR.

To help identify relevant stakeholders at national, sub-national, or (if applicable) international level, a proposed template for a stakeholder matrix table, based on the ECDC response areas, is presented in Annex 1. The stakeholders should be selected on the basis of the response areas chosen for the analysis. The response areas described should be considered as a non-exhaustive list.

# Implementing the IAR

## Session 1: Introductions, scope, and purpose

It is important to ensure that all participants in an IAR are aware of its scope and purpose, and of each other's roles and responsibilities in the public health response to COVID-19.

## Session 2: Establishing the timeline of events

Following a short welcome and briefing, in order to optimise time, the first activity is to reflect on what has happened so far in preparing for and responding to the COVID-19 pandemic.

To facilitate this process a timeline of key events should be created[1]. A standard timeline can be prepared in advance of the event which highlights key events related to the scope of the IAR. This will act as a scene setter and a reminder for participants (see the ECDC timeline of key events). Participants can then add what they consider to be other key events. This activity should be carried out in a plenary session.

## Session 3: Identification and prioritisation of 'pain points' and good practices

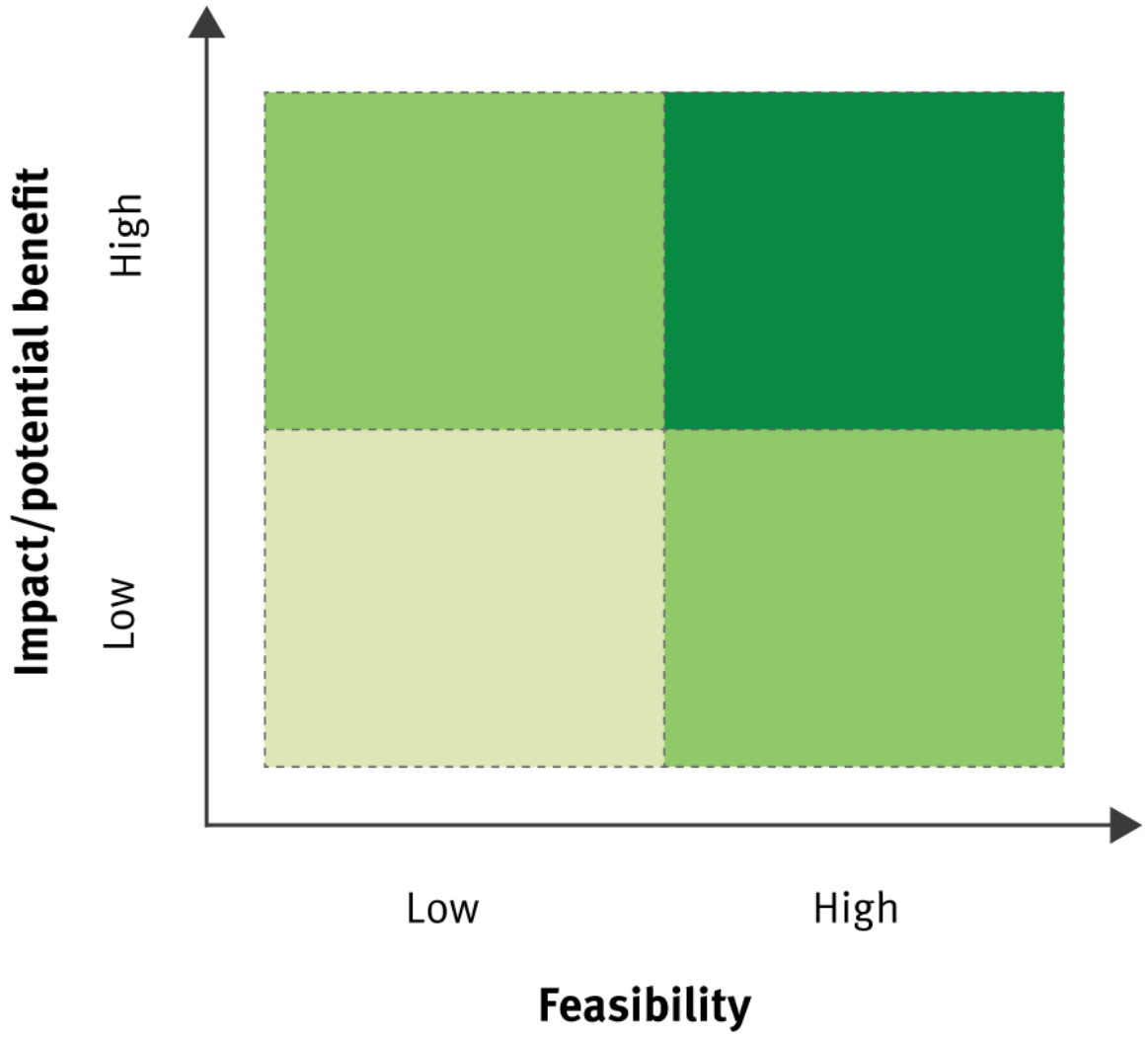
Using the timeline as an aide memoir, participants should consider what worked well and what was less successful in the response areas under consideration. This could include areas of good practice and issues which arose, identifying any lessons learned. Depending on the number of participants this can either be done individually, in group work or in plenary. These outputs should be captured by rapporteurs and fed back into the plenary discussion. All participants may then vote on which of the 'pain points' they find most significant.

A final step in this session is to categorise the issues to be taken forward, following the 'forward look process'. This involves a 'pain point' mapping exercise. Participants place the 'pain points' and good practices identified in a matrix, with the public health benefit from addressing the measure on one axis, and the feasibility of addressing the 'pain point' and/or extending good practices on the other axis (Figure 1). For example, using this method activities identified in the top right quadrant would be items that may allow for 'quick wins' to optimise the ongoing public health response.

Participants take each issue and map it on the 'pain point' matrix. It is important to capture any rationale for placing the issue in a particular place on the matrix as this will feed into the final step. The advantage of using this approach is that it enables all participants to reach a common consensus in a very short time. It also makes it possible to identify and prioritise the main issues to address in the next step, whilst also highlighting some quick wins (top right quadrant).

[1] ECDC has national-level timelines for EU Member States available. These are based on information extracted from ECDC data detailing country response measures to COVID-19. Available at: https://www.ecdc.europa.eu/en/publications-data/download-data-response-measures-covid-19.

**Figure 1. Example of a 'pain point' and good practices matrix**




## Session 4: Conducting a forward-look

A forward-look enables participants to re-assess the 'pain points' mapped in Session 3 against the next (plausible) phases of the pandemic. Participants can be asked to consider a simple forward-looking scenario relevant to the scope of the IAR. Through this forward-look, each of the issues identified in Session 3 can be assessed to see if they will still be relevant in the next phase of the pandemic.

The following examples may be considered for each 'pain point' and 'good practice' agreed upon in Session 3:

- Is it now irrelevant (i.e. time has moved on, to the extent that what was an issue before in the pandemic may no longer be valid)?
- Does it remain valid (i.e. it remains valid but will need to be modified or expanded if it is still to work well, given the new situation)?
- Can it be taken forward (i.e. an example of something working well which will continue to work well despite any new challenges)?
- Does it continue to be fully relevant (i.e. something that remains an issue or something even more important to resolve going forward)?

## Session 5: Proposing corrective measures

In this session, the 'pain point' and good practices matrix (Figure 1) is revisited in light of discussions from Session 4. Necessary revisions to the matrix are discussed, and a set of prioritised corrective measures is developed.

The main issues identified should now be considered and corrective actions suggested. Depending on the number of participants, this can be done in groups or in the plenary, allowing time for consideration of the issues, the potential solutions and agreement of the participants.

Another important element for discussion is to assess how the good practices identified could be more widely adopted and implemented.

The outputs should be collated on the IAR reporting form (Annex 2) and presented and agreed with the participants before they leave. Where participants cannot provide a solution, they should be encouraged to suggest who could. This may lead to a further IAR to drill down into the specific issues concerned with different participants.

# Disseminating the IAR findings

After the workshop, any notes should be collated by the planning team together with the IAR reporting form. The main results, conclusions and recommendations should then be prepared. A brief feedback report should be shared with the IAR participating stakeholders for validation and improvement within one week of the workshop. This can then be considered as the basis for developing an action plan.

If countries opt for conducting multiple IARs, given the modular and focused nature of each IAR, recommendations from a previous IAR can be used to inform a future one, as mentioned above.

# References


1. European Centre for Disease Prevention and Control (ECDC). Conducting in-action and after-action reviews of the public health response to COVID-19. Stockholm: ECDC; 2020. Available at: https://www.ecdc.europa.eu/en/publications-data/conducting-action-and-after-action-reviews-public-health-response-covid-19
2. European Centre for Disease Prevention and Control (ECDC). Best practice recommendations for conducting after-action reviews to enhance public health preparedness. Stockholm: ECDC; 2018. Available at: https://www.ecdc.europa.eu/en/publications-data/best-practice-recommendations-public-health-preparedness
3. Riccardo F, Bolicci F, Fafangel M, Jovanovic V, Socan M, Klepac P, et al. al e. West Nile virus in Europe: after action reviews of preparedness and response to the 2018 transmission season in Italy, Slovenia, Serbia and Greece. Globalization and Health. 2020; https://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-020-00568-1
4. World Health Organization (WHO). Country COVID-19 intra-action review (IAR): final report template. 2020. Geneva: WHO; 2020. Available at: https://www.who.int/publications/m/item/country-covid-19-intra-action-review-(iar)-final-report-template
5. World Health Organization (WHO). Strategic preparedness and response plan. COVID-19: Critical preparedness, readiness and response. Geneva: WHO; 2020. Available at: https://www.who.int/publications/i/item/strategic-preparedness-and-response-plan-for-the-new-coronavirus
6. World Health Organization (WHO). Guidance for conducting a country COVID-19 intra-action review (IAR). Geneva: WHO; 2020. Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-Country_IAR-2020.1
7. World Health Organization (WHO). After action reviews and simulation exercises: under the International Health Regulations 2005 monitoring and evaluation framework (IHR MEF). Country implementation guidance. Geneva: WHO; 2018. Available at: https://www.who.int/ihr/publications/WHO-WHE-CPI-2018.48/en/
8. Chamberlin M, Okunogbe AT, Moore M, Abir M. Intra-Action Report — A Dynamic Tool for Emergency Managers and Policymakers: A Proof of Concept and Illustrative Application to the 2014–2015 Ebola Crisis. . Santa Monica, CA: RAND Corporation; 2015.
9. Aledort JE, Lurie N, Ricci KA, Dausey DJ, Howard S. Facilitated Look-Backs: A New Quality Improvement Tool for Management of Routine Annual and Pandemic Influenza. Santa Monica, CA: RAND Corporation; 2006.

# Annex 1. Example of an IAR stakeholder matrix based upon response areas related to COVID-19

| | Public health authorities | Ministry of Health | Civil Protection | Healthcare system | Laboratory System | Border control and airports | Education | Civil society | Social welfare |
|---|---|---|---|---|---|---|---|---|---|
| Emergency preparedness planning and national coordination | | | | | | | | | |
| International coordination and collaboration | | | | | | | | | |
| Cross-sectoral coordination and collaboration | | | | | | | | | |
| Strategic national stockpiles | | | | | | | | | |
| Incident (emergency) management | | | | | | | | | |
| Situational awareness | | | | | | | | | |
| Surveillance | | | | | | | | | |
| Laboratory systems and testing strategies | | | | | | | | | |
| Case investigation and management | | | | | | | | | |
| Healthcare and long-term care facilities | | | | | | | | | |
| Non-pharmaceutical interventions | | | | | | | | | |
| Risk and crisis communication | | | | | | | | | |
| Research and development | | | | | | | | | |

# Annex 2 – One-page IAR reporting form[2]

| Response area addressed in the IAR | | | |
|---|---|---|---|
| **REFLECT** | | | |
| **Best practices** | | | |
| **Issues** | | | |
| **Lessons identified** | | | |
| **PROPOSE** | | | |
| • Issue | • Action | • Rationale | |
| **For immediate implementation** | | | |
| **For mid to long-term implementation** | | | |

[2] *Adapted from an existing WHO format*

# Annex 3. Trigger questions to guide AARs and IARs focused on the public health response to COVID-19 in European settings

Trigger questions are used to guide discussions during an AAR and IAR. They are designed to be open-ended. Based on the scope and objectives of the IAR, the most appropriate response areas and trigger questions should be selected. The questions presented below are fairly comprehensive, and only a small subset would probably be appropriate for any given one-day IAR exercise.

The trigger questions presented here have been published in ECDC's guidance 'Conducting in-action and after-action reviews of the public health response to COVID-19'.

| Response area | | Questions |
|---|---|---|
| **Overall** | | • Overall, what were the major perceived successes during the emergency response? What went well and why did it go well?<br>• What were some of the main challenges of the response? Why were they a challenge?<br>• Where do you think improvements are still needed? What would be needed to make these improvements happen?<br>• What lessons did you learn during the COVID-19 pandemic that would be applicable in future emergencies?<br>• What are the specific actions to be taken now in order to improve future response capacity? |
| **Emergency preparedness planning and national coordination** | **Preparedness planning** | **Prior to the response**<br>• Were pandemic preparedness plans/emergency preparedness and response plans developed and regularly and systematically tested within the health sector and across other sectors?<br>• Had preparedness plans incorporated lessons learned from recent relevant outbreaks? If so, had the lessons learned been communicated to relevant stakeholders?<br>• When was the last time the plan had been updated and/or tested?<br>• Did an emergency preparedness and response plan for responding to a novel viral respiratory threat exist? If yes, was it flexible enough to be applied during the COVID-19 pandemic?<br>• Was hospital preparedness a main component of the emergency preparedness and response plan? Were health system contingency plans reviewed and updated in accordance with risk assessments for COVID-19? Were there plans to ensure the continuity of essential medical services (incl. emergency medical and surgical services and vaccinations)?<br>• Were there plans for communicating and coordinating with other sectors? Were there lists of contacts for all relevant sectors in the country to identify actions and decision-making authorities and to ensure effective coordination and information exchange?<br>• Were business continuity plans developed for non-healthcare settings?<br>• Did emergency preparedness and response plans account for the phasing of public health strategies during a pandemic, such as threat containment and threat mitigation?<br>**During the response**<br>• If there was a plan, was it followed in the response to COVID-19? Why or why not?<br>• Which were the most critical elements of the plan to guide response measures?<br>• Which elements of the plan had to be modified and which were applied as planned? If response measures diverged from the plan, how was this justified?<br>• Was the plan effective in ensuring a coordinated national response to COVID-19?<br>**Learning from the response**<br>• What do you see as your main institutional strength in terms of preparedness for a respiratory virus pandemic?<br>• Which elements of preparedness were the main enablers of the response? |

| Response area | | Questions |
|---|---|---|
| | | • What could be done to improve emergency preparedness planning in the future?<br>• Did the response to COVID-19 expose any good practices or gaps in the preparedness process and existing plans? |
| | **Legislation and policy** | **Prior to the response**<br>• Was a national/subnational legal framework available and sufficient to enforce measures decided at national committee level?<br>• What national/subnational legislation and policies exist for enabling the response to COVID-19? Did they enable effective threat detection, assessment and response?<br>**During the response**<br>• What was the process for sharing scientific data and recommendations with policy makers and national leaders?<br>• Were new laws and policies adopted during the response? If yes, please describe the decision-making process (e.g. evidence and rationale, timing, influencing factors, etc.)?<br>**Learning from the response**<br>• How did the existing and/or newly adopted legislation and policies enable the response?<br>• If applicable, what were the mechanisms for policy monitoring and evaluation? How did this knowledge improve policy efficiency and effectiveness?<br>• Did the pandemic lead to long-term changes in legal frameworks and policies, if yes, how? |
| | **National coordination** | **Prior to the response**<br>• Was there a national planning committee or structure within the Ministry of Health or under another authority (such as Ministry of Interior, Civil Protection) that has a coordinating role for respiratory virus preparedness and response? Details?<br>– Was there regional or district planning for pandemic preparedness? Were the plans intersectoral? Which institutions were involved?<br>– To what extent is there national involvement in sub-national planning and coordination?<br>– How was coordination managed at local and regional level and between local, regional and national level and how well did it work? Was two-way communication between local/regional and national authorities established and tested?<br>– Were the lines of command and control for the COVID-19 response established and communicated to all relevant stakeholders?<br>– Was the readiness and capacity of the public health and healthcare systems to implement response measures for COVID-19 assessed and monitored? Were the resources (human, financial and material) sufficient to adequately coordinate the response operations at each level?<br>**During the response**<br>• Was a national crisis team and/or emergency coordination mechanism (e.g. emergency operations centre, task force) for responding to COVID-19 established or activated and did it include public health authorities?<br>• If so, when was it activated and on what basis? Was the team intersectoral/multi-disciplinary? Was there a coordinating role for preparedness/surveillance/response? Please provide details (e.g. lead institution, contributing institutions, means of communication, frequency of meetings, reasons for meetings).<br>• How was subnational collaboration ensured throughout the response?<br>• How were emergency response activities managed at subnational level?<br>**Learning from the response**<br>• If there was a coordination mechanism, was it effective? Why or why not?<br>• Did the established coordination mechanism enable rapid information exchange between the national crisis team and stakeholders/sectors, and decision-makers? If not, what were the main challenges?<br>• How could national coordination be improved? |

| Response area | | Questions |
|---|---|---|
| **International coordination and collaboration** | | **Prior to the response**<br>• Were any plans in place for communicating and coordinating with neighbouring, EU, and other countries in the event of a pandemic or a Public Health Event of International Concern? Please provide details.<br>• Had any joint work, training, or simulation exercises been conducted related to pandemic preparedness or respiratory viruses with neighbouring, EU, or other countries?<br>• Did the Ministry of Foreign Affairs or Ministry of Health have a dedicated focal point for communicating and/or coordinating with neighbouring, EU or other countries during a pandemic or Public Health Event of International Concern?<br>• To what extent had the Ministry of Foreign Affairs been involved in pandemic preparedness simulation exercises or training events with neighbouring, EU or other countries?<br>• Were memorandums of understanding or other agreements in place between your national public health agency and other national public health agencies globally to exchange information during a health crisis?<br>**During the response**<br>• What international partners (e.g. WHO, ECDC, neighbouring, EU, other countries) did you coordinate with during the outbreak? On what topics?<br>• How were the information flows and collaboration (both formal - e.g. IHR and EWRS, and informal) with international partners?<br>– What epidemiological information was available from international partners?<br>– Was information about potential response measures shared with neighbouring countries?<br>– Were any arrangements in place in relation to issues such as enhancing or pooling the availability of laboratory support, hospital surge capacity and clinical case management, protective equipment?<br>**Learning from the response**<br>• How effective was the coordination between the Ministry of Health, Public Health Agency, and the Ministry of Foreign Affairs?<br>• Was information sharing with international partners effective? Was information timely and relevant?<br>• What dimensions in international coordination went well, and what could be improved? |
| **Cross-sectoral coordination and collaboration** | | **Prior to the response**<br>• Were there pre-existing cross-sectoral arrangements in place relevant to pandemic preparedness, respiratory viruses, and/or Public Health Emergencies of International Concern?<br>• Were there national coordinating structures within government for the maintenance of non-health-related essential services in the event of a severe pandemic (e.g. power supply, transport, civil protection, food distribution, tourism industry, education)?<br>• Had designated points of entry and the transportation sector participated in pandemic preparedness planning, training, or simulation exercises where issues such as entry screening were discussed?<br>**During the response**<br>• Which sectors did the public health sector collaborate with in the response to COVID-19? On what topics?<br>• Were any decisions taken to implement entry/exit screening measures, quarantine individuals, or close transportation links to certain countries? How were these decisions made and implemented?<br>• Were any actions taken to ensure business continuity across sectors? How were these actions decided upon and implemented?<br>• Were lines of responsibility clear in instances of cross-sectoral decision-making?<br>**Learning from the response**<br>• Are there any examples of effective cross-sectoral action taken in the response to COVID-19?<br>• Are there any examples of sub-optimal cross-sectoral action in the response to COVID-19?<br>• What can be improved upon? |

| Response area | | Questions |
|---|---|---|
| **Strategic national stockpiles** | | **Prior to the response**<br>• Was there a national inventory and mapping of the available resources for emergency response? Did this mapping address resources and capacities relevant to the response to COVID-19, including expertise, staff, logistics, medical equipment, finance, and facilities?<br>• When was the last mapping of resources conducted? Which sectors participated?<br>• What was the status of stockpiling with respect to pharmaceuticals, protective equipment and other equipment prior to COVID-19?<br>• What provisions were made with respect to stocks of vaccinations, pre-ordering/licencing/import of drugs and vaccines and protective equipment?<br>**During the response**<br>• How were national stockpiles assessed, monitored and reported on during the COVID-19 pandemic? How was this assessed at subnational level? Who was in charge of assessments and who were shortages reported to?<br>• How were shortages addressed and communicated to those affected (e.g. healthcare workers)? How was the availability of medical equipment (e.g. ICU equipment, personal protective equipment (PPE), vaccines and therapeutics, laboratory supplies) ensured during the pandemic?<br>• Which procurement mechanisms and agreements (e.g. EU Joint Procurement Agreement, rescEU stockpile, existing bilateral and regional agreements) were used? How were resources distributed in the country?<br>**Learning from the response**<br>• What were the main challenges related to national stockpiles? Which were the most critical shortages and how did they affect the response to COVID-19?<br>• Which were the most critical steps before or during the response to ensure the availability of strategic national stockpiles?<br>• What could be improved? |
| **Incident management** | **Emergency Operations Centres** | **Prior to the response**<br>• Was there an incident management system in the health sector at the national and subnational level?<br>• Had a national emergency operations centre or equivalent structure been established? If yes, had emergency operations centre plans, activation and functions at the national level been tested and updated in the past two years? Were emergency operations centres available at the subnational level with plans and standard operating procedures (SOPs), resources and staff trained in emergency operations centre SOPs?<br>• Were exercises (e.g. table top exercises) conducted at least annually to test emergency response capabilities at all levels? If yes, were corrective actions to update plans and strengthen capacities developed and implemented following the exercises?<br>• Was there a dedicated coordination mechanism under the national health emergency operations centre for activation and coordination of emergency medical teams (EMTs) (such as an EMT Coordination Cell)?<br>**During the response**<br>• How long after the receipt of an early warning or information of an emergency did it take for the emergency operations centre to be activated? Was it activated within 120 minutes?<br>• Were emergency operations centre operations sustained for the duration of the COVID-19 pandemic?<br>• Describe scenarios or triggers for activation of emergency response. Are there multiple levels of emergency response activation?<br>• What was the procedure for decision-making in the emergency operations centre?<br>• Was the organisation able to convene participants from ministries and agencies of all relevant sectors and other national and multinational partners as appropriate?<br>**Learning from the response**<br>• What were the main challenges for the emergency operations centre during the response? What worked well? |

| Response area | | Questions |
|---|---|---|
| | | • Were the available resources (equipment, trained staff) sufficient to ensure effective and efficient management of emergency response operations during the COVID-19 pandemic? |
| **Situational awareness** | **Epidemic intelligence, early warning and epidemiologic modelling** | **Prior to the response**<br>• Do you have a regular early detection activity at regional national and international level?<br>• Who was responsible for early warning of emerging pathogens?<br>• How is information from early warning and epidemic intelligence routinely disseminated and analysed?<br>• Was there an epidemic intelligence system in place to detect potential threats?<br>• What agreements were in place for exchanging early warning alerts and epidemic intelligence data with WHO, ECDC, neighbouring, EU and other countries?<br>• Does your country have access to EWRS?<br>• When did you first learn of cluster of atypical pneumonia in China and COVID-19? How?<br>• In previous years, have you monitored an emerging disease at regional national and international level (e.g. Zika, Ebola)?<br>• Was epidemiologic modelling capacity planned to be available during a pandemic?<br>**During the response**<br>• How was epidemic intelligence organised and conducted through the course of the pandemic?<br>• How was epidemic intelligence supporting the collection and analyse of data during the epidemic?<br>• Was epidemic intelligence information fed into the decision-making process of the response on a routine and timely basis?<br>• Were early warning messages from neighbouring countries received and assessed?<br>• What were your main sources of data at regional, national and international level?<br>• Were epidemiological models of potential transmission scenarios available to decision-makers in a timely manner during the response to guide decision-making?<br>**Learning from the response**<br>• What were the main challenges for epidemic intelligence and early warning during the responses? What worked well?<br>• Were resources sufficient to ensure continued epidemic intelligence activity throughout the pandemic?<br>• Was early warning exchange with neighbouring and partner countries timely and useful?<br>• Were some epidemic intelligence activities dropped or not implemented during the response? |
| **Surveillance** | | **Prior to the response**<br>• Were there general surveillance plans for emerging infectious diseases in place? Was there a plan to estimate the disease prevalence during all phases?<br>• Were influenza surveillance plans and systems in place?<br>• Was there a strategy to monitor mortality due to the new diseases (incl. subnational level/in specific population groups)?<br>• Was there a strategy to monitor hospital beds and ICU beds and easily share such information?<br>**During the response**<br>• If there were any suspected or confirmed cases in your country, how were they detected?<br>• Was an ad-hoc surveillance system (or multiple systems) for SARS-CoV-2/ COVID-19 established?<br>– If so, how was it organised? What was the flow of epidemiological information? Was a database established?<br>– Were surveillance objectives clearly defined to ensure that the system was fit-for-purpose?<br>– Was guidance on case detection including sampling/testing policy provided? Did it evolve with time?<br>– How was information provided to healthcare professionals for reporting cases? |

| Response area | | Questions |
|---|---|---|
| | | – What was the median time between detection and reporting of cases to public health authorities and, in the case of an EU Member State, to ECDC?<br>– For EU Member States, what information was reported to TESSy?<br>– What was the percentage of completeness for key variables related to COVID-19 surveillance?<br>– Was regular analysis conducted of surveillance data/surveillance outputs related to COVID-19?<br>– How was sentinel syndromic and virological surveillance for COVID-19 affected by lockdown measures and other recommendations which limited contact with general practitioners?<br>– Were alternative sources of data (e.g. telephone helplines, centralised testing facilities etc.) included in surveillance?<br>– Did you include sites with potentially high mortality rates (e.g. long-term care facilities (LTCF)) in surveillance?<br>– How was surveillance for other priority diseases affected by the shift in focus to COVID?<br>– How representative was surveillance for COVID?<br>– Was it possible to obtain a sub-national view of the situation?<br>– How was epidemiological data analysed and used to enable the response?<br>– How was data collected (e.g. via paper, fax, email, surveillance software application) and shared (e.g. timeliness, automation, data protection)?<br>– Did COVID-19 have an impact on other areas of public health (e.g. vaccination programmes, STI services, non-communicable diseases, including access to services)? How was this monitored?<br>– How did the surveillance system detect the end of the COVID-19 outbreak?<br>**Learning from the response**<br>• Were there any challenges in analysing or gaps in receiving epidemiological or early warning data that would have enabled a better response during the initial response phase?<br>• Were there any significant delays in detection/confirmation of suspect or confirmed cases that hindered the public health response?<br>• What challenges were there in establishing a surveillance system for COVID-19?<br>• What worked well? Which actions taken enabled an efficient and timely detection of the event? |
| **Laboratory systems and testing strategies** | | **Prior to the response**<br>• How is the national laboratory system linked to public health epidemiology?<br>• What processes were in place for the transport of samples to national reference laboratories?<br>• What laboratory capacity was in place in your country to work with high-consequence respiratory viruses such as SARS and MERS-CoV?<br>• Was there pre-existing guidance on testing strategies during pandemic situations?<br>**During the response**<br>• What role did national laboratories play in the establishment of a diagnostic (and eventually serologic) test for SARS-CoV-2?<br>• Were assay validation tests performed?<br>• How was testing capacity expanded (i.e. scaled-up)?<br>• What guidance on testing strategies for COVID-19 was available and followed? Was the overall laboratory system able to conduct laboratory testing for SARS-CoV-2?<br>– If so, when?<br>– If so, what was the process for laboratory confirmation?<br>– If so, was the laboratory system able to handle the volume of requests (sufficient financial and human resources)?<br>• If no laboratory test for SARS-CoV-2 was developed in the country, was an effective test obtained from a partner country?<br>• Did you achieve timeliness of results throughout the pandemic wave?<br>• Where there any shortages of reagents? If so, what solutions were found?<br>• How was the protection of laboratory staff ensured - i.e. access to appropriate PPE? |

| Response area | | Questions |
|---|---|---|
| | | • How was the supply of laboratory consumables secured and coordinated?<br>• How was information on case confirmation shared with national public health authorities?<br>• What networking activities took place with other EU/EEA countries, and did these assist with capacity building and strengthening?<br>**Learning from the response**<br>• How did the capacity to test effect the overall response to the pandemic?<br>• What worked well in establishing a system for laboratory confirmation of SARS-CoV-2?<br>• Was scaling-up of testing for SARS-CoV-2 effective? What were the challenges and good practices that emerged through scaling-up?<br>• What could be improved upon? |
| **Case investigation and management** | **Contact tracing** | **Prior to the response**<br>• What operational guidelines, resources, and arrangements were in place for contact tracing prior to the outbreak of COVID-19?<br>• Were agreements in place with airlines, cruise ships, train operators, for obtaining public health passenger locator cards as needed?<br>• Were arrangements in place with other countries to enable multi-country case investigation and contact tracing?<br>**During the response**<br>• How were COVID-19 contacts defined? Did this definition change with time? How?<br>• Was an algorithm for managing contacts of probable or confirmed cases developed or followed?<br>• Were any apps or other technology used for digital contact tracing?<br>• Were volunteers form the community (e.g. retirees, final year medical students) engaged to support contact tracing if resources were scarce for implementing contact tracing?<br>• How many contacts were followed during the response?<br>• What information was provided to contacts about quarantine and. self-isolation?<br>• How was the follow-up of contacts managed?<br>• Was information about data for passengers who may have been on a flight with a confirmed COVID-19 case available from travel services?<br>**Learning from the response**<br>• How effective and efficient was contact tracing/management? If new technologies or volunteers were used/engaged, what were the best practices or challenges?<br>• What was the maximum number of confirmed cases for which contact tracing has been performed? Was the capacity to conduct contact tracing an issue during the response?<br>• What could have been done better? |
| | **Patient referral and transfer** | **Prior to the response**<br>• What procedures were in place for patient referral and transport for high consequence infectious disease (HCID)?<br>• What surge capacity existed in designated hospitals for pandemic scenarios?<br>• Did protocols exist to ensure potentially infected patients did not present to standard emergency rooms or other healthcare settings?<br>**During the response**<br>• How were suspect COVID-19 patients routed or transferred to designated healthcare facilities? Were there transfer arrangements between overburdened hospitals (including within cities, within a country or internationally)?<br>• What guidance was provided to the general population in terms of accessing healthcare?<br>• What protocols were established to direct suspect patients to appropriate healthcare facilities?<br>**Learning from the response**<br>• What best practices for patient referral and transfer were practiced/developed?<br>• What were the main challenges? |
| **Healthcare and long-term care facilities** | **Infection prevention and control (IPC) in healthcare settings** | **Prior to the response**<br>• What IPC guidance was available for high-consequence infectious disease? |

| Response area | | Questions |
|---|---|---|
| | | • Was there a national emergency stockpile supply of PPE (e.g. FFP respirators) and disinfectants?<br>• Did a strategy exist for minimising infection risk among staff and citizens in healthcare facilities and long-term care facilities?<br>**During the response**<br>• Were IPC measures for COVID-19 implemented in designated hospitals? What were these measures?<br>• Were the necessary personal protective measures and equipment, and human resources available for appropriate IPC and protection of healthcare workers?<br>• Were there any documented instances of nosocomial SARS-CoV-2 transmission? If so, have the causes been investigated?<br>**Learning from the response**<br>• What best practices for IPC for COVID-19 were practiced/developed?<br>• What were the challenges in implementing IPC measures in healthcare settings?<br>• What challenges were there for IPC in healthcare settings during the COVID-19 pandemic? |
| | **Intensive care unit (ICU) capacity and crisis standards of care (CSC)** | **Prior to the response**<br>• Was comprehensive mapping of Intensive Care Unit (ICU) capacity available for the whole country?<br>• Were plans in place for the pooling of hospital beds and for optimising ICU capacity usage across national sub-regions?<br>• Were crisis standards of care (CSC) for pandemic situations available to guide clinical practice and the allocation of scarce resources (including ventilators)?<br>• Were ethical guidelines established in relation to triage of medical care during a pandemic?<br>• Were there plans and materials in place to establish a medical surge capacity?<br>**During the response**<br>• Were mechanisms identified to optimise the national usage of ICU capacity? How was surge capacity established and managed?<br>• Were CSC for COVID-19 implemented in hospitals? How?<br>• Was timely and accurate data available on ICU capacity during the COVID-19 pandemic?<br>• Was ICU capacity data used to inform decision-making on societal-level control measures?<br>• Was there a period where ICU beds and/or ventilators needed to be allocated through a triage algorithm? How long was this period, and was triage based upon pre-existing guidelines?<br>**Learning from the response**<br>• Was it feasible or productive to pool medical resources and ICU capacity?<br>• Were CSC effectively implemented for COVID-19?<br>• Were ethical guidelines able to provide clinicians with adequate support for making triage decisions?<br>• How effective was national data on ICU capacity for informing decision-making?<br>What worked well, and what did not, in terms of optimising ICU capacity usage throughout the COVID-19 pandemic?<br>• What can be improved when it comes to optimising ICU capacity during public health emergencies? |
| **Non-pharmaceutical interventions** | **Quarantine and physical distancing** | **Prior to the response**<br>• Were any national guidelines and/or regulations in place concerning quarantine during major infectious disease outbreaks?<br>• Were any national guidelines and/or regulations in place concerning physical distancing measures, such as school or workplace closures, limits to gathering sizes, or otherwise?<br>**During the response**<br>• Was quarantine implemented for COVID-19? How? Why? Who was responsible for implementation?<br>• Was a cordon sanitaire implemented for COVID-19? How? Why? Who was responsible for implementation?<br>• Was self-isolation for suspected or confirmed COVID-19 cases implemented? Who was responsible for implementation and follow-up of cases? |

| Response area | | Questions |
|---|---|---|
| | | • Were physical distancing measures (e.g. school closures) implemented? How? Why? Who was responsible for implementation?<br>• Which factors had an impact on the specific timing of the implementation of physical distancing measures?<br>• Was a mechanism for assessing efficacy of physical distancing measures assessed during the response?<br>• What triggered the relaxation or removal of physical distancing measures?<br>**Learning from the response**<br>• Were physical distancing measures effective in helping containment and/or mitigation strategies?<br>• Did any legal issues arise in relation to implementing quarantine and/or physical distancing measures?<br>• What challenges existed to implement quarantine and/or physical distancing measures? What good practices can be built upon going forward? |
| | **Points of entry (PoE)** | **Prior to the response**<br>• Was there a designated Point of Entry (PoE) according to the International Health Regulations (IHR) in advance of the COVID-19 pandemic?<br>• Was the PoE integrated into national emergency preparedness plans? Had PoE preparedness measures been tested?<br>• Did the designated PoE have patient isolation facilities and arrangements for the safe transfer of patients to designated hospitals?<br>• If your country is a Schengen country, what additional measures or agreements were in place to prevent the spread of high-risk infectious disease across borders?<br>**During the response**<br>• What role, if any, did a designated PoE play in the response to COVID-19?<br>• Was information about data for passengers who may have been on a flight with a confirmed COVID-19 case available from travel services?<br>• Was the PoE resourced with appropriate staff and facilities to respond to COVID-19?<br>• Did the PoE coordinate medical triage and management of suspected COVID-19 cases arriving at the PoE?<br>• Did the PoE have a system and facilities in place for the safe transport of confirmed or suspect COVID-19 travellers?<br>• Did the PoE carry out entry screening or public health messaging related to COVID-19?<br>**Learning from the response**<br>• How effective was coordination between the PoE and national public health authorities? What went well? What could be improved?<br>• How effective was the PoE in the response to COVID-19? Were there any capacity gaps, and what could be improved? |
| | **Entry screening** | **Prior to the response**<br>• Was a protocol established for dealing with an ongoing, large-scale respiratory disease outbreak abroad that could lead to entry screening or even closing the border?<br>• What guidelines existed for conducting entry screening at PoEs?<br>**During the response**<br>• Was entry screening implemented? How and why?<br>• Was information available about flights/travellers entering from COVID-19 affected areas?<br>• Were specific control measures, such as entry screening, information to passengers, or thermal screening implemented at airports as part of the response to COVID-19?<br>**Learning from the response**<br>• Did entry screening measures implemented fulfil their objectives? Why or why not? |
| **Risk and crisis communication** | **Communication to healthcare workers** | **Prior to the response**<br>• How should communication to healthcare workers be organised?<br>• Was any pre-existing material related to pandemic influenza, or MERS-CoV available? |

| Response area | | Questions |
|---|---|---|
| | | **During the response**<br>• What processes were in place for disseminating messages to healthcare workers? How was communication to healthcare workers implemented during the COVID-19 pandemic?<br>**Learning from the response**<br>• Was communication to healthcare workers timely and effective in ensuring they had a common and consistent approach to the response to COVID-19?<br>• What challenges were there in communication to healthcare workers? What were good practices? |
| | **Communication to the public and community engagement** | **Prior to the response**<br>• Which is the lead authority for risk and crisis communication to the public during a health emergency?<br>• Has a national risk communication strategy for pandemics been developed? Did it target different audiences?<br>• Have health promotion materials already been developed?<br>• Has a community engagement strategy been developed? How were vulnerable and at-risk populations identified and targeted in the response and risk communication strategies?<br>• Were sufficient resources available to conduct risk communication and community engagement? Are responsibilities for health communication to the public clearly delineated for pandemic situations?<br>• Has public communication from recent infectious disease outbreaks or other health emergencies been evaluated and improved upon?<br>• Was there a monitoring system to observe public perceptions and opinions of both the outbreak, and the response to the outbreak?<br>• Was there a strategy for tackling misinformation/disinformation (e.g. from online sources)?<br>**During the response**<br>• How was public communication coordinated during the response to COVID-19? Who was leading the risk communication strategy?<br>• What was the process for the clearance of communication outputs?<br>• How were communication outputs coordinated with other sectors within the country, and with neighbouring countries and partner institutions (e.g. WHO and ECDC)?<br>• How was influential media (e.g. traditional media, bloggers, and influencers) identified and engaged with?<br>• What were the main communication channels with the public? Which communication tools and technologies were used (e.g. new apps, social media, national television, dedicated websites)?<br>• How was risk communication implemented at community level and how were communities engaged and mobilised? Were existing community networks engaged in response measures?<br>• Were public perceptions monitored during the outbreak? If yes, how did this information affect the response? Was public communication consistent and transparent?<br>• How was misinformation/disinformation dealt with and how did it impact the response? Were proactive steps taken to correct misinformation/disinformation?<br>**Learning from the response**<br>• Was public communication effective in conveying public health messages and establishing public trust? If so, how has this been assessed?<br>• What challenges were there in public communication? What were good practices from the outbreak of COVID-19? |
| **Research and development** | | **Prior to the response**<br>• What arrangements were in place for the rapid development of vaccines during pandemics or public health events of international concern?<br>• What vaccine and antiviral manufacturing capacity exists in your country that could be formally leveraged during a pandemic?<br>• What international research and development agreements or partnerships did your country belong to?<br>**During the response**<br>• Was your country involved in efforts to develop a vaccine against SARS-CoV-2? If so, in what ways? |

| Response area | | Questions |
|---|---|---|
| | | • Was your country involved in any clinical trials for the safety or efficacy of a vaccine against SARS-CoV-2?<br>• Did your country participate in clinical trials of pharmaceuticals for the treatment of COVID-19 cases?<br>• While vaccines against SARS-CoV-2 were in development, did you develop a plan for its eventual distribution?<br>• Did you participate in any public health research initiatives related to COVID-19, such as on the efficacy of various physical distancing measures?<br>**Learning from the response**<br>• What challenges existed in launching work to develop and/or procure a vaccine against SARS-CoV-2?<br>• What worked, and what needs to be improved for a future pandemic? |

**European Centre for Disease Prevention and Control (ECDC)**

Gustav III:s Boulevard 40, 16973 Solna, Sweden

Tel. +46 858601000
Fax +46 858601001
www.ecdc.europa.eu

An agency of the European Union
www.europa.eu

Subscribe to our publications
www.ecdc.europa.eu/en/publications

Contact us
publications@ecdc.europa.eu

Follow us on Twitter
@ECDC_EU

Like our Facebook page
www.facebook.com/ECDC.EU

Publications Office
of the European Union