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Public health, country knowledge, crisis management
Health Security and Vaccination

**EU health preparedness:
Recommendations for a common EU testing approach
for COVID-19**

Agreed by the Health Security Committee on 17 September 2020

Introduction

The COVID-19 pandemic continues to pose a major threat to public health. As set out in the Commission Communication on short-term EU health preparedness¹, robust testing strategies and sufficient testing capacities are essential aspects of preparedness and response to COVID-19, allowing for early detection of potentially infectious individuals and providing visibility on infection rates and transmission within communities. Moreover, they are a prerequisite to adequate contact tracing.

Member States should be implementing comprehensive testing to rapidly detect an increase in cases and to identify groups at high risk of disease². One of the action areas included in this Communication is therefore to achieve, via the Health Security Committee (HSC), EU level agreement for aligned testing strategies and methodologies.

As testing and contact tracing are resource intensive elements of an effective COVID-19 response during the influenza and respiratory infections season, robust and effective national strategies are important for the detection of cases, interruption of transmission, differential diagnosis, epidemiological analysis and risk assessments. All this contributes to an adequate response that enables targeted measures. Moreover, it may help to mitigate the need for large scale and generalised “stay at home” policies, which have had significant economic, social and medical consequences, as well as travel restrictions. Successful testing strategies depend on the right mix of elements, as further outlined in this document.

This document sets out various actions points for consideration by countries when updating or adapting their national testing strategy, with the aim to achieve an agreement on a coherent approach to COVID-19 testing across Europe. It is based on the answers submitted to a questionnaire circulated among the HSC on testing strategies and capacities, which was completed by twenty-one Member States³, plus Norway, Switzerland and the UK as well as Bosnia and Herzegovina and Ukraine. Moreover, input provided to specific sections of the weekly Situation Report on Integrated Situation Awareness and Analysis (ISAA) was considered, resulting in input from four additional Member States⁴.

The content of this document is thus based on the situation in European countries early September 2020 and the respective testing strategies and objectives implemented at that moment. The references to national approaches and testing aspects merely function as examples of measures that have been implemented by countries at the time, and the content of this document should therefore not be considered to be exhaustive.

¹ COM(2020) 318 final

² <https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-coronavirus-disease-2019-covid-19-eueea-and-uk-eleventh>

³ AT, BE, CY, CZ, DE, DK, EE, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, NL, PT, SE, SK

⁴ BG, MT, PL, RO

Yet, while the epidemiological context may change and countries may adapt their testing and contact tracing approaches over time, the purpose of this document is to provide recommendations for action that will support countries in the planning and organisation of their health preparedness in different stages and settings of the COVID-19 pandemic. Moreover, it should be noted that, at the time of developing this document, the impact and effect of different testing strategies, taking into consideration factors such as costs, communication, reduction of incidence, are not yet fully understood and will be continue to be analysed.

Finally, this document has been developed in parallel with the guidance produced by the European Centre for Disease Prevention and Control (ECDC) on “Testing objectives for COVID-19”, which sets out five different testing approaches to achieve specific public health objectives under different epidemiological situations. Moreover, the document provides background information and technical details on COVID-19 testing methods and approaches.

1. TESTING

1.1 Objectives of testing strategies

Across the EU, a wide variety of testing approaches are being implemented by countries, depending on factors such as the epidemiological situation, transmission dynamics, resources and testing capacities, as well as priority setting objectives. Different strategies can also exist within one country, often depending on regional or local situations (e.g. in the case of outbreak clusters).

Looking at the strategies implemented across the EU for the identification of **symptomatic cases**⁵, most countries (18 Member States and Switzerland) have a mandatory testing system in place that aims to cover all cases. However, due to insufficient testing capacities or diverse strategic objectives, some countries (BG, IT, LT, MT, RO, PL, SE) have implemented a prioritisation system for symptomatic cases. For example, they prioritise individuals with severe symptoms, with underlying conditions or in specific settings. In few countries, symptomatic cases are not mandatory to be tested, as their strategy is built around a voluntary testing approach (LV, UK, SE, NO). Norway strongly recommends and encourages people to be tested in case they develop COVID-19 compatible symptoms. The UK states that you must self-isolate for 10-days and order a test in case of COVID-19 compatible symptoms⁶.

⁵ Case definition for coronavirus disease 2019 (COVID-19), as of 29 May 2020, ECDC, <https://www.ecdc.europa.eu/en/covid-19/surveillance/case-definition>

⁶ <https://www.gov.uk/government/publications/types-and-uses-of-coronavirus-covid-19-tests/types-and-uses-of-coronavirus-covid-19-tests>

Testing of symptomatic cases, followed by isolation of confirmed cases and follow up of contacts, is a cornerstone of an effective response to the COVID-19 pandemic. Testing of symptomatic cases should therefore be agreed as a top priority and an effective strategy to achieve this should be implemented wherever possible throughout the EU/EEA during the coming period when COVID-19 is expected to continue to circulate from now at least until Spring 2021.

In addition to growing numbers of COVID-19 cases, the number of people with respiratory symptoms due to **influenza and other respiratory viruses** will also increase during the coming months. This will, in turn, influence available resources and testing capacities, and it might not be possible to test all cases with respiratory symptoms for both influenza and SARS-CoV-2 at the same time. It will be crucial for countries to ensure solid monitoring and surveillance systems to assess the overall situation and plan resources accordingly. Based on available testing capacities and the level of influenza circulation, it may be necessary for countries to readjust their testing strategies for symptomatic cases and prioritise specific target groups with COVID-19 compatible symptoms. Moreover, multiplex RT-PCR tests⁷ are available to detect multiple respiratory viruses in the same specimen including SARS-CoV-2 and influenza. The use of such tests for generalised, high capacity, differential diagnoses of viral respiratory infections should be introduced, in particular from October 2020 to Spring 2021, as competing demands will surge for diagnosis due to similarity of symptoms and presentation.

There is a great diversity between countries concerning the implementation of testing strategies for **asymptomatic cases**⁸. Luxembourg has implemented a large-scale testing programme, meaning that, in addition to testing all symptomatic cases, a high volume of tests for SARS-CoV-2 are offered to and undertaken on people who are not necessarily displaying symptoms⁹. This approach also includes priority groups such as health and social care staff, free voluntary testing for travellers, and testing of non-random stratified samples of the general population. In Latvia¹⁰, free universal testing was offered until 30 June to everyone with and without symptoms. In Denmark, France and Norway, COVID-19 testing is available to the whole population for free and without prescription. In addition, in Spain, large-scale PCR testing may be implemented at specific high incidence limited areas, such as neighbourhoods, closed locations, and enterprises.

Most countries take a different approach and systematically test asymptomatic individuals among certain population groups or in specific settings. Of these, close

⁷ Center for Disease Control and Prevention (CDC). CDC's Diagnostic Multiplex Assay for Flu and COVID-19 at Public Health Laboratories and Supplies. CDC. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/lab/multiplex.html>.

⁸ Asymptomatic case definition, ECDC, Testing objectives for COVID-19.

⁹ <https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-population-wide-testing-country-experiences.pdf>

¹⁰ <https://lv.usembassy.gov/health-alert-government-of-latvia-offers-free-covid-19-testing-until-june-30-u-s-embassy-riga-latvia/>

contacts of confirmed cases, healthcare workers and other people who work in long-term care facilities, are the most highly prioritised groups. Twelve countries have put in place large asymptomatic case testing in outbreak clusters, which are localised areas of SARS-CoV-2 transmission in the community. The Netherlands is not systematically testing asymptomatic cases; this happens on a case-by-case basis and the decision is often taken at the local level. In Latvia and the UK, the testing of asymptomatic cases also happens on a voluntary basis. In Sweden, the testing of asymptomatic cases is not recommended, as their testing strategy is built on a specific prioritisation system. The first priority group are severe cases with possible comorbidities., priority number 2 group are healthcare workers and other people who work in long-term care facilities, the third priority group includes people with important societal functions as defined by the Swedish Civil Contingencies Agency, and priority 4 is the remaining population.

Concerning the testing of people admitted to hospitals or requiring specific treatments, nine countries (AT, DE, DK, FR, IE, LV, PT, SK, and BIH) test all **admitted patients** to hospitals, regardless of whether they are displaying symptoms or not. Others test only those with COVID-19 compatible symptoms or focus on the testing of all incoming patients of hospitals located in high-incidence regions. In Norway, the testing of admitted patients is recommended in outbreak settings, after travel and in specific circumstances, and the same conditions apply for people admitted to nursing homes¹¹. Several countries test patients that are admitted to specific risk services (e.g. ICU, geriatrics, transplant, dialysis) or that need specific medical interventions. In Estonia and Finland, decisions for testing incoming patients are made by the physicians themselves, often depending on the type of intervention that is required. Hungary, Italy and Lithuania indicated that testing is either currently not required for patients who are not suspected COVID-19 cases or that there is no holistic or national approach in place.

Overall, most countries do not experience challenges related to the willingness among the general population to be tested. However, Italy reports a lower overall testing willingness in specific regions of the country, and Luxembourg and Finland notice challenges among certain socio-economic groups to participate in testing programmes. In Belgium and France, concerns were raised about testing of specific groups such as babies and young children, and testing guidelines were therefore revised accordingly and have been made more restrictive. In Germany as well as in Belgium and Croatia, there has been an unwillingness to participate in testing or provide details on close contacts due to the fear of being quarantined.

Action points

- Testing of all cases across the population with COVID-19 compatible symptoms, including mild symptoms, should be the priority. To achieve this, the population

¹¹ <https://www.fhi.no/nettpub/coronavirus/testing-og-oppfolging-av-smittede/testkriterier/>

should have easy access to testing and be encouraged to seek testing immediately when COVID-19 compatible symptoms appear.

- Testing of individuals with COVID-19 compatible symptoms, particularly those presenting with symptoms of acute respiratory infection, should be combined, if possible, in parallel for influenza and other respiratory infections¹². The testing of such symptomatic cases in specific settings or among certain population groups should be considered in case testing capacities do not allow to test all.
- A clear prioritisation system should be in place for the testing of asymptomatic people, in line with the available resources, test and contact tracing capacities. The HSC should further discuss and agree on prioritisation systems, relevant to different situations and settings and taking into consideration the scenarios presented in the testing document published by ECDC¹³.
- Eliminating the transmission of COVID-19 in healthcare and social care settings requires specific attention. If resources and testing capacities allow, staff should be periodically tested and patients should be tested at or just prior to admission to the hospital. Hospitalised individuals should be monitored for COVID-19 symptoms for at least 14 days following admission, and be tested regularly along an agreed scheme (e.g. once a week). Moreover, hospital infection control plans should be re-activated.
- ECDC should provide further guidance and recommendations for effective screening and testing schemes of asymptomatic staff in healthcare and social care settings as well as incoming hospital patients, particularly in the context of the 2020/2021 influenza season.
- National testing strategies should be adaptable to situations at local level or for specific clusters, taking into consideration local services present and lessons learned from previous measures taken.
- In case of outbreak clusters, testing the majority of the community, regardless of whether they show symptoms or not, may be more cost effective than introducing and ensuring compliance to more stringent public health measures. Local authorities should develop a testing and compliance scheme for foreseeable critical situations, e.g. in schools or work places.
- Ensure clear communication and provision of public health based information to citizens to ensure there is an overall willingness to participate in COVID-19 testing, particularly in case of asymptomatic testing, and in outbreak situations.

1.2 Testing capacities

Compared to earlier this year, testing capacities have significantly increased in Europe. During springtime 2020, testing initially focused on symptomatic cases and often only on those admitted to hospitals or with severe COVID-19 compatible symptoms. Now,

¹² Further details on the methods and measures to be applied for testing of COVID-19, influenza and other respiratory viruses can be found in the ECDC guidance on testing objectives for COVID-19.

¹³ ECDC, Testing objectives for COVID-19

increased testing capacities are allowing countries to also integrate the testing of people with mild symptoms as well as asymptomatic individuals.

Yet, wide variations exist between the population groups and cases covered by the different national testing strategies, resulting in significant differences in the **testing rate** across the European population. More concretely, based on current figures, the likelihood of being tested can differ up to 30 times between Member States. It is therefore certain that significant differences exist across the EU concerning the number of asymptomatic and mildly symptomatic cases that are being identified through the different national testing approaches. In turn, this will influence the **test positivity rate**. This rate has currently a large variation from around 9% to 0.2%.

Other indicators that could be used for assessing the epidemiological situation at national and local level and for deciding if testing capacities and strategies should be adapted accordingly, are the hospitalisation rate and mortality rate, as well as hospital capacities and treatment capacities. However, it should be noted that these rates are better indicators for addressing the magnitude of the outbreak rather than the spread of infection (transmission risk), as only a small proportion of the infected community end up in the hospital or die because of COVID-19. Moreover, hospitalisation and mortality rates are delayed and do not display the current situation the overall population.

Furthermore, recent seroprevalence studies are showing that, based on the level of antibodies present in populations, the number of positive COVID-19 cases across the EU is higher than what countries have identified so far. In particular, during the start of the outbreak, the undercounting of COVID-19 positive cases was significant, and it is an element that should be factored into any testing strategy. Having a common testing approach in place across the EU, supported by sufficient testing capacities and resources, is therefore crucial in accurately estimating the situation across the EU and ensuring that the appropriate mitigation measures are put in place to limit further spread of SARS-CoV-2.

While the majority of countries have not identified any particular issues concerning testing capacities at the level of laboratory procedures, Austria noted that the largest challenges to scale up test capacities are along the entire chain of test logistics, and measures have been taken to strengthen these. Finland mentioned that it is starting to see shortages of material due to the increasing testing demand and Denmark and the Netherlands are experiencing difficulties in lab capacity, which is resulting in a longer testing turn-around-time. Latvia and Malta are focusing on the training and recruitment of additional scientist and laboratory personnel. Ensuring testing continuity based on increasing demands, taking into consideration personal data handling, seems to be main current bottleneck for national testing capacities. Moreover, the predicted surge in demand for more complex testing during the influenza season is often not yet considered.

Action points

- Testing capacities and associated resources are essential aspects for preparedness and response to COVID-19. Defining the necessary testing capacity should be based on testing objectives, complex demand planning, the latest scientific evidence on the characteristics of the disease and technical testing approaches.
- The HSC should continue to share experiences regarding the assessment of needs and planning of corresponding testing capacities, in particular of symptomatic cases in the context of the upcoming influenza season.
- Targeted, timely and accurate testing including timely turnaround of results and contact tracing will facilitate fast identification and containment of cases and clusters, and the most rapid return to normality for non-affected groups.

1.3 Testing Turn-Around-Time

The testing Turn-Around-Time (TAT) of COVID-19 plays an important role in controlling community transmission of the virus and can be split up in two different phases: the time required from the test request to taking the sample, and the time between the sampling and the communication of the test result. Seven countries (CY, DK, EE, LU, LT, PL, SE) are currently reporting a full testing turn-around-time - from the request to the result - of up to 48 hours. In Austria, 48 hours is the target, but no data exists whether this goal is met or not. In Portugal, large differences exist in the TAT (between 4-72 hours), depending on the type of lab carrying out the test.

Among the other countries, large differences exist, in particular concerning the time between the test request and the sampling. While in Belgium this takes up to 16 hours, in BG, EE, IE, MT and NL it takes around 24 hours and in CZ, ES, FI and HU up to 2 days for people to be tested after they have submitted a request. Moreover, in Croatia and Slovakia, the average waiting time can range from 3 to 7 days due to limited testing capacities and large and dense populations. Croatia indicated that the time between request and sampling varies from immediately to up to 4 days, depending on the purpose of the testing, the geographical location and clinical picture.

The time required between the sampling and test result is less than 24 hours in 8 countries (EE, FR, HU, HR, NL, ES, UK, NO) and up to 36 hours in Germany and Ireland. Seven countries (BE, BG, CZ, LV, MT, RO, SK) report that the test result after sampling is available between 24-28 hours and in Finland and certain regions in Spain this can take several days. Some countries have shorter TAT norms in place for certain target groups, such as healthcare workers and other people who work in long-term care facilities. Italy uses a slightly different indicator, which is the time between the onset of symptoms and diagnosis, and which is currently between 1 and 2 days.

It is important to note that, in order to enable timely contact tracing, it is also crucial to limit the time between symptom onset and the testing request. This requires easy access

for people to testing, including for visitors from other countries, and communication to the public about the need to seek testing as soon as possible after symptom onset. Additionally, the test results should be immediately fed back also to the individuals tested and to the public health officers. This process would be greatly supported by the availability of a well-functioning digital platform, enabling quick registration of the data and swift delivery of the laboratory result to the clinician and tested individual.

Action points

- Countries should aim to have as a target a turn-around-time of 24h hours (from request to be tested to the result shared with the individual tested and public health officers), in order to ensure the effective implementation of mitigation measures as well as swift contact tracing.
- Shorter TAT and contact testing initiation should be ensured for critical staff, such as healthcare workers and other people who work in long-term care facilities, teachers, as well as to control clusters in schools.
- Countries should ensure that symptomatic people, including visitors, seek and are able to access testing as soon as possible after symptom onset.

1.4 Testing in specific settings: schools

Keeping schools open is important for psychosocial, educational and economic reasons. School children do not currently appear to be a major driver for transmission of SARS-CoV-2, but, on the other hand, education personnel might be part of risk groups. School closures have, amongst other things, an effect on parents, i.e. often workforce, and should therefore be considered as a critical sector. Low threshold testing of teachers as well as for pupils should be established, as well as a service to ensure a rapid testing TAT and close follow up of high risk (close) contacts. Rapid identification of clusters and isolation of positive cases will help schools to minimise disruptions to classes and spread to household contacts and the community at-large.

Concerning specific measures introduced in schools around testing, in Finland, recommendations have been drawn up for children, which allow a child to return to school or day care after one day without symptoms. A child tested negative for COVID-19 can return to school or day care if the symptoms are decreasing. The Netherlands recently announced that teachers have (temporarily) priority when it comes to testing (the same applies to healthcare professionals).

Regarding masks, in Croatia and Germany masks are mandatory in secondary schools (when changing classes), in France, pupils in nursery and primary schools are not wearing masks but it is compulsory from secondary school onward, and in Portugal, masks will be mandatory in schools for children older than 9 or 10 years of age. In Denmark, children are required to wear masks in transportation to and from schools, but not in the school itself. In Croatia and Denmark, children are staying only in their class group (“class bubbles”) i.e. there is no mixing of classes during breaks or for

specific lessons. In Italy, the National Health authorities, in collaboration with Education authorities, have released a specific document for the management of cases and clusters in schools.

Action point

- In addition to hygiene concepts, specific testing schemes and rapid intervention teams for testing and contact tracing should be available for schools, and be established by regional and local authorities.

1.5 Incoming travellers

All respondents indicated that a specific policy for testing and/or quarantine measures has been put in place regarding incoming travellers from other EU countries or the Schengen area. Five countries (BE, FR, IE, IT, LV) require arriving travellers to complete a form, declaration or questionnaire on their current health status, sometimes including the result of a RT-PCR test. In Ireland, failure to complete the form could result in the issuing of penalties, including a fine of up to €2,500 or imprisonment for up to 6 months.

Eighteen countries indicated that they work with **categorisation systems**, often based on the epidemiological situation of the country where the incoming travellers are coming from. A colour coding system is a frequently used tool. Several countries base their categorisation on the 14-day cumulative number of COVID-19 cases in the country of departure. For example, Estonia uses an incidence rate threshold of 16/100.000, in Finland this is 25/100.000 (as of 19 September), in Denmark 30/100.000 and in Lithuania 25/100.000. Furthermore, in Hungary, foreigners without a residence permit are not allowed to enter Hungary, but exemptions may be granted (e.g. travel for business purposes and military convoys).

A wide range of systems with regards to testing and quarantine – both mandatory and voluntary approaches – have been put in place across the EU by the different Member States and countries. To support and ensure a well-coordinated, predictable and transparent approach regarding the movement of travellers in the EU, the Commission has published a proposal for a Council Recommendation on a coordinated approach to the restriction of free movement in response to the COVID-19 pandemic¹⁴. This document also sets out common criteria and thresholds, linked to the 14-day cumulative COVID-19 case notification rate, the test positivity rate, and the testing rate.

Action points

- Any travel restrictions put in place must be well coordinated among countries, proportionate and non-discriminatory, and should focus on what is necessary for the protection of public health.

¹⁴ https://ec.europa.eu/info/sites/info/files/council-proposal-coordinated-approach-restriction-movement_en.pdf

- The issue of requiring tests for travellers wishing to cross national borders is a special category of testing, which also requires agreement on common criteria as well as an agreement on the necessary preconditions and tools required for mutual recognition of test results.
- To prevent re-introduction of the virus, countries or subnational areas that have achieved a sustained control of SARS-CoV-2 could consider targeted testing and follow up of individuals coming from other areas within the same country or other countries that have higher transmission levels.
- In case countries decide to implement travel restrictions, testing of symptomatic travellers, directly upon their return, could be a priority.

1.6 Antigen and antibody tests

Three types of tests exist that can be used for COVID-19 diagnosis, the RT-PCR test being the most commonly used test as recommended by WHO. The other two tests are antigen tests and antibody tests. Antigen tests detect the presence of a viral antigen and can be used to detect ongoing infection. Antibody (or serological) tests detect the presence of antibodies generated against SARS-CoV-2, and can only be used to confirm a prior infection. Two other important aspects of the antigen and antibody tests are their rapidity and ease of use, and they are often referred to as 'rapid tests'. Various countries are, particularly in the current context where demand for testing is increasing and the influenza season will start soon, therefore considering and validating the performance of such tests as it could potentially allow them to speed up procedures and processes.

As part of EU efforts to provide guidance on the use of coronavirus tests, the Joint Research Centre (JRC) has created a database of COVID-19 in vitro diagnostic devices and test methods, which gathers information on available tests in one place¹⁵.

Concerning **antigen tests**, Belgium is using the antigen test for diagnosis, but with the condition that a negative test result is confirmed by an RT-PCR test. In Italy, rapid antigen tests (immunofluorescent test) have been largely used in ports and airports during the month of August for the screening of passengers returning from touristic areas and countries considered at high risk for COVID-19.

Nine other countries are considering the use of antigen tests, depending on forthcoming performance assessments, or are currently carrying out pilots to study rapid antigen tests in specific contexts (e.g. to test asymptomatic cases or people not involved in contact tracing procedures). For example, in Spain, there is a study ongoing concerning the validation of antigen tests in two hospitals in Madrid and others are being planned. The UK accepts a positive result for the implementation of quarantine measures while in 13 other countries, the results of antigen tests are not accepted for public health measures. The main concerns currently raised in relation to antigen tests are linked to

¹⁵ <https://ec.europa.eu/jrc/en/news/coronavirus-testing-information-test-devices-and-methods-single-place>

their sensitivity and thus their ability to detect positive COVID-19 cases, particularly among asymptomatic individuals.

The majority of countries are using or planning to use **antibody tests**. The use of these tests occurs mostly in the context of sero-epidemiological studies, use by private laboratories, or in relation to specific cases or conditions (and in combination with PCR). In Austria and Ukraine, antibody tests are being used for clinical purposes (antibody ELISA), and in Sweden, antibody testing is widely used to determine the antibody rates within the general population and within specific areas (regions and municipalities). The results of these studies inform public health response measures.

In the majority of countries, antigen and/or antibody tests are currently being validated at national level, and criteria used include CE marking and validation by licenced labs. Germany is currently developing a validation protocol for rapid antigen tests. Regarding minimum criteria for sensitivity and specificity, Italy has set criteria for specificity not less than 95% and sensitivity not less than 90%. Lithuania considers that the sensitivity of rapid serological tests for the detection of antibodies to SARS-CoV-2 should be at least 90% at least 14 days after the onset of symptoms. The specificity of the rapid tests must be at least 90%. In France, sensitivity should be equal or more than 90%, and specificity should be equal or more than 98%. In Portugal, tests are being validated by laboratories that are part of the national network for the diagnosis of COVID-19 and that are implementing different validation methodologies.

In the context of antibody testing, almost all countries are carrying out or are involved in sero-prevalence or sero-epidemiological studies (combined with molecular studies) to study exposure to infection and development of antibodies among the population. Some take place in specific settings, such as long-term care facilities or schools. At the request of the Commission, ECDC has established a virtual coordination mechanism for sero-epidemiological studies to stimulate the set-up of such studies in a coordinated fashion.

Action points

- Set up an EU test validation platform to create coherence and to facilitate the exchange of experiences and data between European countries. This should also allow for comparing validation outcomes of common test kits between countries.
- Further explore how antibody and antigen test results could be used for epidemiological investigation as an additional source of information.
- The use of antigen test with acceptable test performance should be further studied and considered for early detection, and regular checks including of asymptomatic people (including in schools and other settings), contacts, and for differential diagnosis in health care settings.

2. TESTING OF CLOSE CONTACTS (CONTACT TRACING)

2.1 Contact tracing capacities

In addition to ensuring sufficient testing capacities and appropriate testing strategies, another important pillar for reducing COVID-19 transmission is the implementation of efficient contact tracing measures, particularly to enable the control of localised outbreaks. Close contacts are people who have had a high-risk exposure to a confirmed case¹⁶, and rapid scalability of tracing such cases is key to keep up with a possible progression of the pandemic and to avoid having to reinstate more dramatic measures, such as confinement.

Across the EU, approaches taken to contact tracing as part of country's testing strategies are again wide-ranging. Ten countries have compulsory measures in place for identified close contacts, both in terms of testing and quarantine. In Denmark, close contacts are tested just after being identified as a close contact, but no earlier than four days after first exposure. Within six days after the last exposure, a second test may be conducted. Seven other countries have compulsory quarantine measures in place but testing happens on a voluntary basis or is not being implemented in a systematic manner. In the Republic of Srpska, there is a compulsory 14-days quarantine period for identified close contacts, and testing only happens in case the individual develops symptoms or at the end of the quarantine period if he/she is a health care worker or works in a long-term care facility. Some countries have voluntary measures in place for both testing and quarantine (NL, IE, LV, SE). In the UK, individuals are asked to quarantine for up to 14 days after coming into contact with a confirmed case, and close contacts are asked to order a test if they develop symptoms.

In terms of quarantine duration, in most countries this is 14 days, but NL and NO apply a 10-day quarantine rule. Other countries are also investigating if the duration of the quarantine can be lowered from 14 to 10 days. Moreover, some countries allow for a shorter quarantine period in case of a negative COVID-19 test result.

The majority of the respondents to the questionnaire circulated indicated that they have sufficient capacities in place for extensive contact tracing linked with large scale testing. Czechia noted that the issues experienced are primarily caused by the lack of human resources and therefore they have witnessed an inability to timely trace and quarantine close contacts. Several countries deployed extra efforts to train additional staff and scaling up capacities, or have focused on the development of mobile applications to support the contact tracing work.

¹⁶ ECDC, Contact tracing: Public health management of persons, including healthcare workers, having had contact with COVID-19 cases in the European Union - second update, <https://www.ecdc.europa.eu/en/covid-19-contact-tracing-public-health-management>.

Nine countries noted that they have witnessed difficulties in the context of contact tracing, mainly related to an unwillingness by people to provide honest and clear information on their close contacts.

ECDC has developed a guidance document¹⁷ to support EU/EEA public health authorities in the tracing and management of persons, including healthcare workers, who had contact with COVID-19 cases. It outlines the key steps of contact tracing, including contact identification, listing and follow-up, in the context of the COVID-19 response. Moreover, another report¹⁸ published by ECDC on contact tracing for COVID-19 outlines a number of resource measures, including the use of well-trained non-public-health staff and volunteers, repurposing existing resources such as call centres, reducing the intensity of contact follow-up and using new technologies such as contact management software and mobile apps.

Action points

- Review capacities for contact tracing and ensure that this can be rapidly scaled up in accordance with local needs. This should involve the recruitment and training of additional staff and supported by the use of online contact management systems.
- Ensure a close coordination between the TAT and the immediate contact tracing procedures, as contact tracing may become inefficient if there are excessive delays in the testing process.
- If capacities are limited, focus the contact tracing efforts on tracing the contacts with the highest risk of exposure to the case and contacts who work with vulnerable populations. It is also important to focus contact tracing in settings known to be prone to transmission such as long-term care facilities, certain occupational settings and prisons.
- Put a strategy in place to ensure the optimal implementation as well as enforcement of quarantine measures and testing of close contacts of confirmed cases, irrespective of symptoms, in particular if these measures are mandatory.

2.2 Mobile applications

The coupling of standard contact tracing approaches with interoperable mobile applications (apps) can reinforce the ability to stop new chains of transmission and prevent spread to the community while maintaining the data protection principles as outlined in relevant legislation. According to the latest information from the eHealth Network, 12 countries have currently decentralised mobile applications online (AT, DE, DK, EE, ES, FI, HR, IE, IT, LV, NL, PL) and FR is using a centralised tracing mobile application. Six other countries are currently developing COVID-19 apps (BE, LT, MT, CY,

¹⁷ <https://www.ecdc.europa.eu/en/covid-19-contact-tracing-public-health-management>

¹⁸ <https://www.ecdc.europa.eu/en/publications-data/contact-tracing-covid-19-evidence-scale-up-assessment-resources>

PT, CZ). The number of downloads as a percentage of the population ranges between 1% (HR, PL) and 33% (IE), with an average of 9%.

For example, in Czechia, a contact tracing mobile application has been in use since April 2020 and an updated version will be launched in September 2020. SwissCovid App was launched on 25 June 2020. Germany launched a voluntary digital contact tracing app on June 15th, which stores epidemiologically relevant contacts of the past 3 weeks anonymously on the mobile phone of the app user. Users will be encouraged to contact their local health authority or physician if they are being notified by the app that they have been in contact with an “epidemiologically relevant contact”. Belgium has decided to use a voluntary contact tracing mobile application in all of its regions as of September 2020. Norway had developed an app, but all data was deleted upon request by the Norwegian Data Protection Authority due to privacy violation reasons. Hungary, Luxembourg, Romania and Sweden are currently not planning to develop a mobile application.

ECDC has published a report¹⁹ to facilitate the dialogue between public health authorities and app developers and to ensure that the main epidemiological and operational considerations are taken into account, while also understanding the technological limitations.

Action points

- Countries should ensure the exchange of good practice and experiences concerning the use of mobile applications for contact tracing purposes, and work towards cross-border operability.
- Mobile applications could be used to support contact-tracing activities in certain settings. In this context, it is vital that the information of test results is uploaded as quickly as possible.

¹⁹ <https://www.ecdc.europa.eu/en/publications-data/covid-19-mobile-applications-support-contact-tracing>