29th July 2020

COVID-19 – KCE CONTRIBUTIONS

INTERNATIONAL COMPARISON OF COVID-19 TESTING AND CONTACT TRACING STRATEGIES

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Acknowledgements: Tinne Lernout (Belgium), Sofieke Klamer (Belgium), Ilse Peeters (Belgium), Sara Dequeker (Belgium); Natalia Bustos Sierra (Belgium); Dan Brun Petersen (Denmark), Bolette Søborg (Denmark), Francesco Maraglino (Italy), Patrizia Parodi (Italy), Oscar Pérez Olaso (Spain), Berta Suarez Rodríguez (Spain), Fernanco Simón Soria (Spain), Silvia Herrera Leon (Spain), Eline van Daalen (The Netherlands), Anne-Ruthi Knevel (The Netherlands), Jerom Geffen (The Netherlands), Ingrid Van Hattem (The Netherlands). No validation received from France nor Germany by July 16th.

This document is a rapid review of scientific literature retrieved from several publicly funded COVID-19 resource collections. The literature included in these repositories is not always peer-reviewed or externally validated. KCE synthesised the evidence in a short time frame to respond to urgent questions and could therefore not follow its regular methodological procedures.

TABLE OF CONTENTS

LIST OF FIGURES **7**
LIST OF TABLES **7**
LIST OF ABBREVIATIONS **8**
1 PROBLEM DESCRIPTION **9**
2 OBJECTIVE **9**
3 METHODS **10**
4 OVERVIEW OF EPIDEMICS IN SELECTED COUNTRIES **10**
5 DEFINITIONS **13**
5.1 POPULATION AT RISK FOR SEVERE COVID-19 ILLNESS 13
5.2 COVID-19 CASE DEFINITION 13
5.3 TESTING 14
5.3.1 Strategy 14
5.3.2 Type of test 14
5.4 CONTACTING AND TRACING / CONTACT IDENTIFICATION 15
6 COMPARISON **16**
6.1 TESTING STRATEGY 16
6.1.1 Symptomatic persons 16
6.1.2 Asymptomatic persons 16
6.1.3 Laboratory organisation 16
6.1.4 Communication towards the patient 17
6.2 SURVEILLANCE STRATEGY 23
6.3 TRACING STRATEGY 26
6.3.1 Organisation of contact tracing 26
6.3.2 Monitoring of contact tracing 27
6.3.3 The use of contact tracing APPs 27
6.4 ISOLATION AND QUARANTINE STRATEGIES 31
6.4.1 Isolation strategies 37
6.4.2 Quarantine strategies 40
6.4.3 Monitoring of compliance 40
6.5 OUTBREAK DETECTION AND CONTROL STRATEGIES 40
6.5.1 Surveillance systems 40
6.5.2 Systematic testing in nursing homes and high risk groups 41
6.5.3 Outbreak or cluster identification and investigation 41
7 DISCUSSION AND CONCLUSIONS **47**
7.1 HAVING A NATIONAL TESTING AND TRACING PLAN ADAPTED TO THE SPREAD OF THE EPIDEMIC 47

7.2 AN ATTENTION ON STOCKS AS WELL AS ON LABORATORY CAPACITY AND RAPIDITY 48
7.3 A RAPID INFORMATION SYSTEM FOR IMPROVED SURVEILLANCE AND OUTBREAK DETECTION 48
7.4 A FOCUS ON MONITORING OF NURSING HOMES OR SPECIFIC POPULATIONS 48
7.5 AN APPLICATION TO IMPROVE CONTACT TRACING? 49
7.6 MEASURES FOR RECALCITRANT PEOPLE AND AN INCREASED MONITORING 49
7.7 STUDY LIMITATIONS 49
7.8 CONCLUSION 50
■ **APPENDIX 51**
1 RESULTS FOR BELGIUM 51
1.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 51
1.2 TESTING STRATEGY 53
1.2.1 Indications for PCR testing 53
1.2.2 PCR testing conditions: how and by whom? 56
1.2.3 Indications and conditions for serological testing 58
1.2.4 Laboratory capacity 59
1.2.5 Communication of test results to the patient 61
1.2.6 Recording and surveillance of test results 61
1.2.7 How is testing reimbursed 62
1.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 63
1.3.1 Suspected cases (having symptoms) 63
1.3.2 Confirmed cases 63
1.4 CONTACT TRACING STRATEGY 64
1.4.1 Contact definition 64
1.4.2 Organisational process of contact tracing 66
1.4.3 Testing of contacts 68
1.4.4 Contact tracing Apps 68
1.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 69
1.6 EARLY CASE DETECTION METHODS 70
1.6.1 Surveillance based indicators used to detect early cases 70
1.6.2 Identification of clusters 70
1.6.3 In hospitals 70
1.6.4 In nursing homes and other collective residential facilities 71
1.6.5 In schools 72
1.6.6 Precarious population 73
1.7 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 73
2 RESULTS FOR DENMARK 75
2.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 75
2.2 TESTING STRATEGY 75

2.2.1 Indications for PCR testing 75
2.2.2 PCR testing conditions: how and by whom? 76
2.2.3 Indications and conditions for serological testing 77
2.2.4 Laboratory capacity 77
2.2.5 Communication of test results to the patient 77
2.2.6 Recording and surveillance of test results 78
2.2.7 How is testing reimbursed? 78
2.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 79
2.3.1 Suspected cases (having symptoms) 79
2.3.2 Confirmed cases 79
2.4 CONTACT TRACING STRATEGY 79
2.4.1 Contact definition 79
2.4.2 Organisational process of contact tracing 80
2.4.3 Testing of contacts 80
2.4.4 Contact tracing Apps 81
2.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 81
2.6 EARLY CASE DETECTION METHODS 81
2.6.1 Surveillance based indicators used to detect early cases 81
2.6.2 Identification of clusters 82
2.6.3 In hospitals 82
2.6.4 In nursing homes and other collective facilities 82
2.6.5 In schools 83
2.6.6 Precarious population 83
2.7 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 84
3 RESULTS FOR FRANCE 85
3.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 85
3.2 TESTING STRATEGY 87
3.2.1 Indications for PCR testing 87
3.2.2 PCR testing conditions: how and by whom? 87
3.2.3 Indications and conditions for serological testing 88
3.2.4 Laboratory capacity 88
3.2.5 Communication of test results to the patient 89
3.2.6 Recording and surveillance of test results 89
3.2.7 How is testing reimbursed? 90
3.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 91
3.3.1 Suspected cases (having symptoms) 91
3.3.2 Confirmed cases 91
3.4 CONTACT TRACING STRATEGY 92
3.4.1 Contact definition 92

3.4.2 Organisational process of contact tracing 93
3.4.3 Testing of contacts....94
3.4.4 Contact tracing apps....94
3.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 95
3.6 EARLY CASE DETECTION METHODS....96
3.6.1 Surveillance based indicators used to detect early cases....96
3.6.2 Identification of clusters 97
3.6.3 In hospitals....98
3.6.4 In nursing homes and other collective facilities 98
3.6.5 In schools....99
3.6.6 Precarious populations 100
3.7 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 100
4 RESULTS FOR GERMANY 101
4.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 101
4.2 TESTING STRATEGY 101
4.2.1 Indications for PCR testing 101
4.2.2 PCR testing conditions: how and by whom? 102
4.2.3 Indications and conditions for serological testing 102
4.2.4 Laboratory capacity 103
4.2.5 Communication of test results to the patient 103
4.2.6 Recording and surveillance of test results....103
4.2.7 How is testing reimbursed? 104
4.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES....104
4.3.1 Suspected cases (having symptoms)....104
4.3.2 Confirmed cases....105
4.4 CONTACT TRACING STRATEGY....105
4.4.1 Contact definition....105
4.4.2 Organisational process of contact tracing 107
4.4.3 Testing of contacts....108
4.4.4 Contact tracing Apps 108
4.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 109
4.6 EARLY CASE DETECTION METHODS....110
4.6.1 Surveillance based indicators used to detect early cases....110
4.6.2 Identification of clusters 110
4.7.1 In hospitals....111
4.7.2 In nursing homes and other collective facilities 111
4.7.3 In schools....111
4.7.4 Precarious population....112
4.8 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 112

5 RESULTS FOR ITALY 113
5.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 113
5.2 TESTING STRATEGY 114
5.2.1 Indications for PCR testing 114
5.2.2 PCR testing conditions: how and by whom? 115
5.2.3 Indications and conditions for serological testing 116
5.2.4 Laboratory capacity 116
5.2.5 Communication of test results to the patient 117
5.2.6 Recording and surveillance of test results 117
5.2.7 How is testing reimbursed? 118
5.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 118
5.3.1 Suspected cases (having symptoms) 118
5.4.1 Confirmed cases 119
5.5 CONTACT TRACING STRATEGY 119
5.5.1 Contact definition 119
5.5.2 Organisational process of contact tracing 120
5.5.3 Testing of contacts 121
5.5.4 Contact tracing Apps 121
5.6 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 122
5.7 EARLY CASE DETECTION METHODS 123
5.7.1 Surveillance based indicators used to detect early cases 123
5.7.2 Identification of clusters 123
5.7.3 In hospitals 123
5.7.4 In nursing homes and other collective facilities 124
5.7.5 In schools 124
5.7.6 Precarious population 124
5.8 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 125
6 RESULTS FOR SPAIN 126
6.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 126
6.2 TESTING STRATEGY 127
6.2.1 Indications for PCR testing 127
6.2.2 PCR testing conditions: how and by whom? 127
6.2.3 Indications and conditions for serological testing 128
6.2.4 Laboratory capacity 130
6.2.5 Communication of test results to the patient 131
6.2.6 Recording and surveillance of test results 131
6.2.7 How is testing reimbursed? 132
6.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 133
6.3.1 Suspected cases (having symptoms) 133

6.3.2 Confirmed cases 133
6.4 CONTACT TRACING STRATEGY 135
6.4.1 Contact definition 135
6.4.2 Organisational process of contact tracing 136
6.4.3 Testing of contacts 136
6.4.4 Contact tracing apps 136
6.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 138
6.6 EARLY CASE DETECTION METHODS 140
6.6.1 Surveillance based indicators used to detect early cases 140
6.6.2 Identification of clusters 140
6.6.3 In hospitals 142
6.6.4 In nursing homes and other collective facilities 142
6.6.5 In schools 143
6.6.6 Precarious population 145
6.7 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 146
7 RESULTS FOR THE NETHERLANDS 147
7.1 EXISTENCE OF A PLAN TO PREVENT THE SECOND WAVE 147
7.2 TESTING STRATEGY 147
7.2.1 Indications for PCR testing 147
7.2.2 PCR testing conditions: how and by whom? 148
7.2.3 Indications and conditions for serological testing 149
7.2.4 Laboratory capacity 149
7.2.5 Communication of test results to the patient 150
7.2.6 Recording and surveillance of test results 151
7.2.7 How is testing reimbursed? 152
7.3 ISOLATION STRATEGIES AND MONITORING OF CONFIRMED CASES 152
7.3.1 Suspected cases (having symptoms) 152
7.3.2 Confirmed cases 154
7.4 CONTACT TRACING STRATEGY 154
7.4.1 Contact definition 154
7.4.2 Organisational process of contact tracing 155
7.4.3 Testing of contacts 156
7.4.4 Contact tracing Apps 157
7.5 QUARANTINE STRATEGIES AND MONITORING OF CONTACTS 158
7.6 EARLY CASE DETECTION METHODS 162
7.6.1 Surveillance based indicators used to detect early cases 162
7.6.2 Identification of clusters 163
7.6.3 In hospitals 163
7.6.4 In nursing homes and other collective facilities 163

7.6.5 In schools 163
7.6.6 Precarious population 167
7.7 COORDINATION AND RESPONSIBILITY OF TESTING AND TRACING 167

LIST OF FIGURES

Figure 1 – 7-day moving average of the number of COVID-19 cases per 1 million inhabitants reported by each country in March-July 2020 10
Figure 2 – 7-day moving average of the number of COVID-19 cases per 1 million inhabitants reported by each country in June-July 2020 11
Figure 3 – 7-day moving average of the number of COVID-19 deaths per 1 million inhabitants reported by each country in March-July 2020 11
Figure 4 – 7-day moving average of the number of COVID-19 deaths per 1 million inhabitants reported by each country in June-July 2020 12
Figure 5 – The cumulative number of tests per 100 000 persons by country* 12
Figure 6 – Case finding 14
Figure 7 – Contact and tracing procedures steps 15

LIST OF TABLES

Table 1 – Test capacity 17
Table 2 – Communication of results to the patient 18
Table 3 – Testing strategy by country 18
Table 4 – Surveillance strategy by country 23
Table 5 – Tracing strategy by country 27
Table 6 – Isolation cases and quarantine contacts 31
Table 7 – WHO and ECDC guidance on isolation strategy 37
Table 8 – Isolation strategy by country 39
Table 9 – Testing characteristics in collectivities by country 42
Table 10 – Outbreak and early case detection strategies by country 43

LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
App	Application
ELISA	Enzyme-linked immunosorbent assay
ECDC	European Centre for Disease Prevention and Control
FEDASIL	Federal agency for the reception of asylum seekers
FPS (FOD, SPF)	Federal Public Service (Federale Overheidsdienst, Service public Fédéral)
GEES	Group of Experts on the Exit Strategy
GGD	Gemeentelijke of Gemeenschappelijke Gezondheidsdienst – Municipal or public health services of the Netherlands
GP	General practitioner
NIHDI – RIZIV – INAMI - LIKIV	National Institute for Health and Disability Insurance - Rijksinstituut voor Ziekte- en Invaliditeitsverzekering - Institut National d'Assurance Maladie-Invalidité - Landesinstitut für Kranken- und Invalidenversicherung
OCMW-CPAS	Public centre for social welfare – Openbaar centrum voor maatschappelijk welzijn – Centres public d'action sociale
PCR	Polymerase chain reaction
RMG	Belgian Risk Management group

■ SCIENTIFIC REPORT

1 PROBLEM DESCRIPTION

Despite the overall declining trend in the number of new hospitalisations related to COVID-19 (June 10th 2020), there continue to be newly confirmed cases indicating that community transmission still occurs in Belgium.

Testing and tracing are key elements that enable to identify cases, find their contacts and stop infection transmission. They also allow to detect asymptomatic and mild symptomatic cases early. Both interventions are strongly intertwined as a control strategy for early control and avoidance of a resurgence of the epidemic.

Several measures (underlined) of the WHO exit procedures guideline, dated April 24th, stipulate the importance of setting up strategies to detect early cases.

1. Disease transmission is under control.
2. Health systems are able to "detect, test, isolate and treat every case and trace every contact".
3. Hot spot risks are minimised in vulnerable places, such as nursing homes.
4. Schools, workplaces and other essential places have established preventive measures.
5. The risk of importing new cases "can be managed".
6. Communities are fully educated, engaged and empowered to live under a new normal.

For Belgium the Group of Experts on the Exit Strategy (GEES) identifies **the first line of defence** against a second wave, to be the **individual testing and contact tracing**. The **second line** of defence is monitoring of virus resurgence country-wide. These two lines of defence require the persisting strong attention and action of the government(s).

This project compares the COVID-19 contact tracing and testing strategy among different countries. The Belgian Risk Management group (RMG) was interested in learning about innovative initiatives from abroad that may curb the epidemic. These initiatives may have been used in the first wave, been planned for the second wave, or been implemented and ongoing.

2 OBJECTIVE

The objective of the project is to provide a structured comparison of the testing and contact tracing strategies in a group of selected countries. It highlights policies and implementations in order to provide a rationale and country-experience based advice to the RMG and international health authorities. The objective of the study does **not include** an evaluation of the strategies described.

3 METHODS

This is an observational study that compares the testing and contact tracing strategy of Belgium, Denmark, France, Germany, Italy, Spain and The Netherlands. The countries were pragmatically selected due to time constraints. Information on the contact tracing and testing has been retrieved through the official COVID-19 websites of each country, open source databases and direct communication with people working on the COVID-19 response in the selected countries. We searched for a description of strategies on the following topics: a plan to prevent the second wave; a testing strategy (indications for PCR testing, PCR testing conditions; how and by whom, indications and conditions for serological testing, laboratory capacity, communication of test results to the patient, recording and surveillance of test results, how is testing reimbursed), isolation strategies and monitoring of a confirmed case, contact tracing strategy, quarantine strategies and monitoring of contacts, early case detection methods, and coordination and responsibility of testing and tracing. The described strategies are thus the theoretical published descriptions by country. No operational data was collected. The study was performed between June 8th and July 15th with data collection up to July 13th.

4 OVERVIEW OF EPIDEMICS IN SELECTED COUNTRIES

Figure 1 describes the evolution of COVID-19 cases per 1 million inhabitants reported by the countries included in the study. The graph shows that, during the peak of the epidemic in March-April, the most country hit was Spain, followed by Belgium and Italy. Since the beginning of June the countries show a more similar and comparable trend among them (Data source: European Centre for Disease Prevention and Control (ECDC)).

Figure 1 – 7-day moving average of the number of COVID-19 cases per 1 million inhabitants reported by each country in March-July 2020

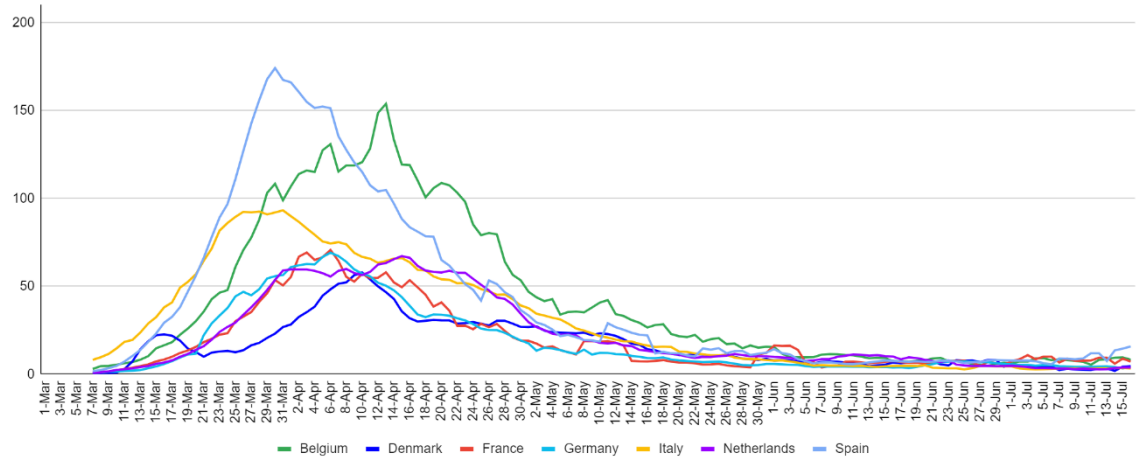


Figure 2 is a zoom of figure 1 and wants to focus on the trends of the last month and a half when all the countries are past the peak of their epidemic and are reporting lower number of cases per 1 million inhabitants. More recently the countries with the highest reporting among the studied countries, are Spain, Belgium and France.

Figure 2 – 7-day moving average of the number of COVID-19 cases per 1 million inhabitants reported by each country in June-July 2020

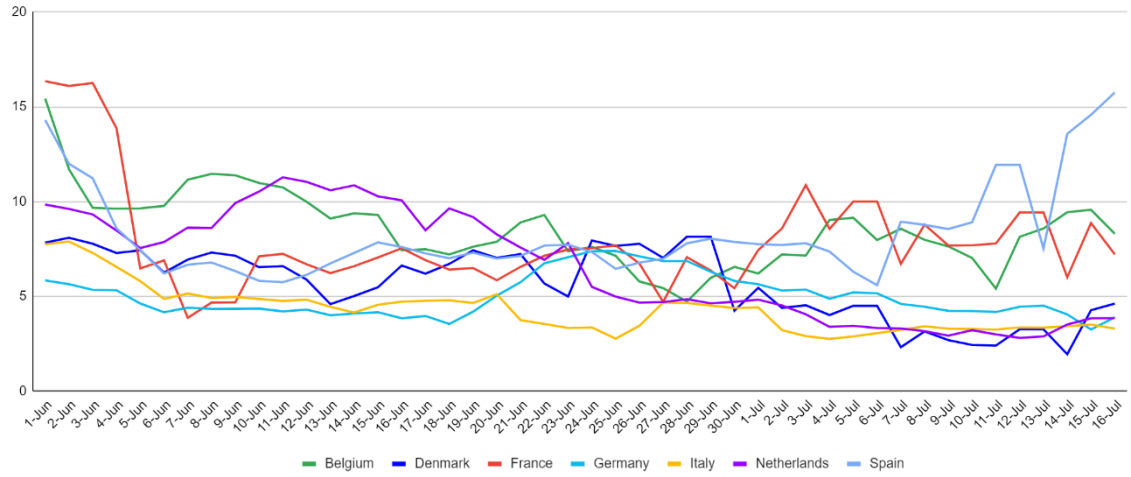
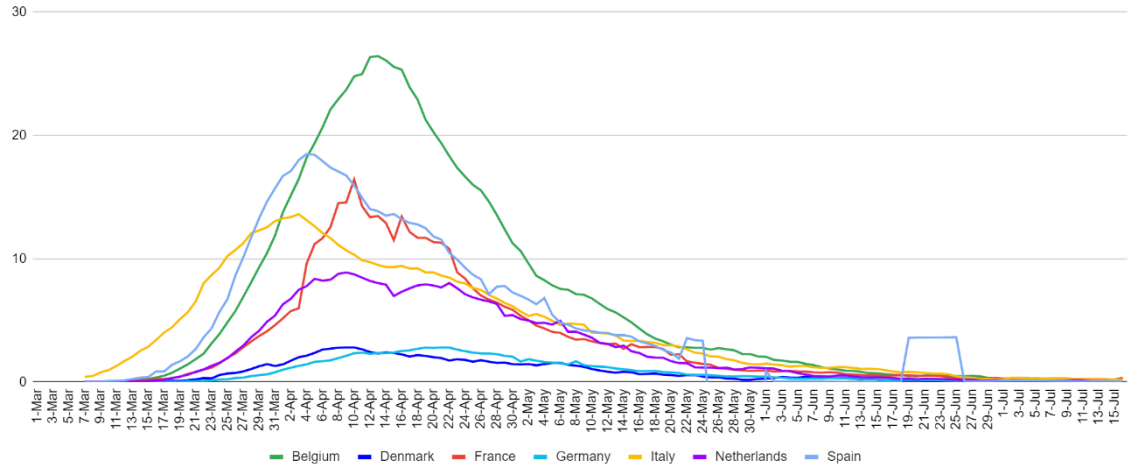


Figure 3 shows the number of COVID-19 deaths per 1 million inhabitants among the studied countries, and during the epidemic peak in April Belgium shows the highest rate.

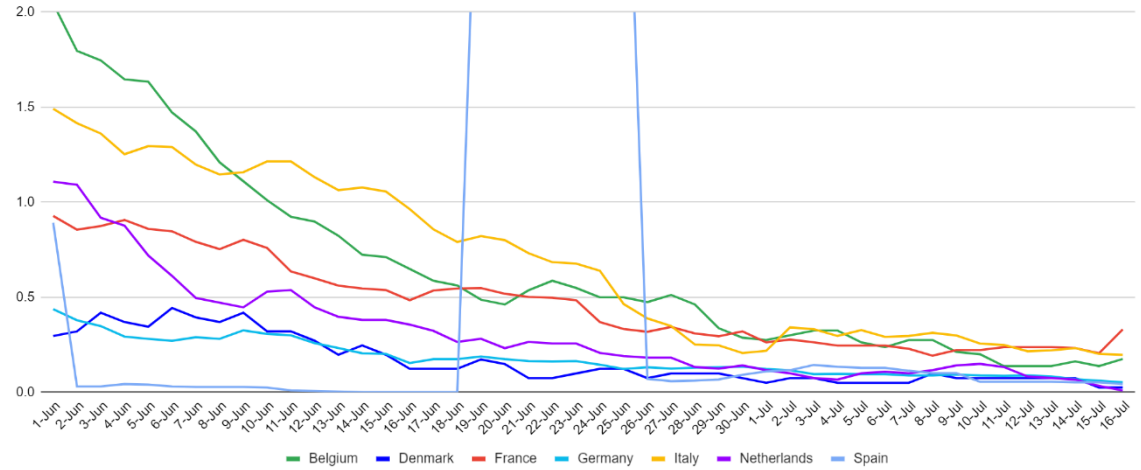
Differently from the other counties, Belgium has included from the beginning of the epidemic the number of possible COVID-19 deaths in the mortality count. This makes comparisons between countries more difficult especially for the beginning of the crisis.

Figure 3 – 7-day moving average of the number of COVID-19 deaths per 1 million inhabitants reported by each country in March-July 2020



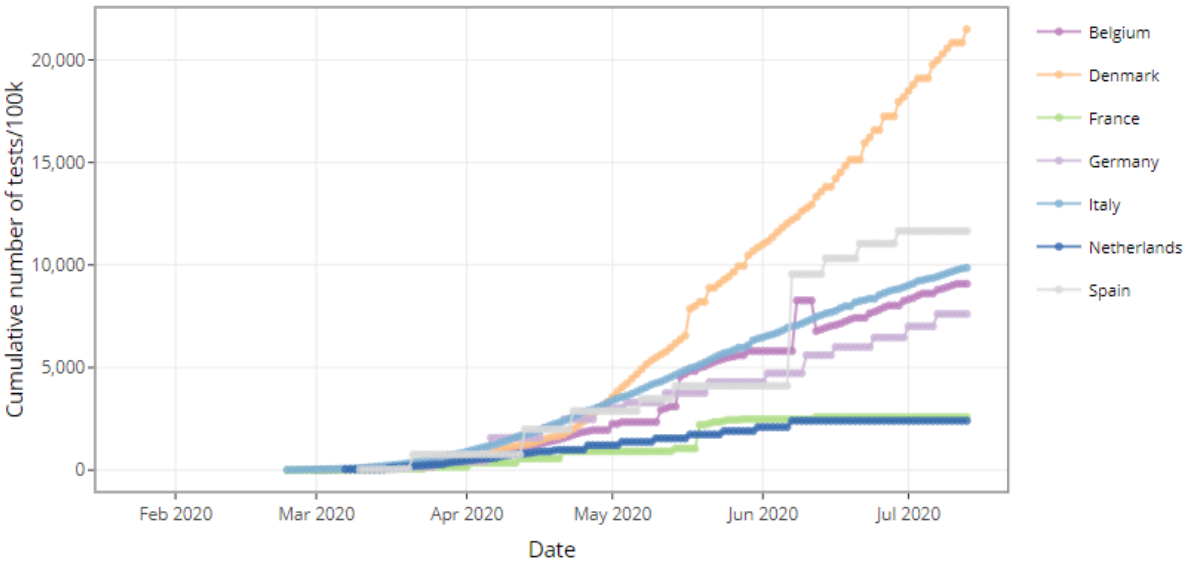
When zooming in the last months and a half (Figure 4) the number of COVID-19 deaths has decreased and is more comparable among the studied countries.

Figure 4 – 7-day moving average of the number of COVID-19 deaths per 1 million inhabitants reported by each country in June-July 2020



The cumulative number of COVID-19 tests performed on July 12th 2020 in each country per 100,000 citizens is highest for Denmark (20,836/100k) and lowest for France (2,588/100k) and The Netherlands (2,404/100k). Belgium is situated in the higher range with 9,082 tests per 100,000 persons, similar to Germany (7,610/100k) and Italy (9,516/100k).

Figure 5 – The cumulative number of tests per 100 000 persons by country*



**The data are retrieved from FIND, a WHO Collaborating Centre which created an interactive map with publicly available data at* https://finddx.shinyapps.io/FIND_Cov_19_Tracker/. *The map was developed using open-source code initially developed by the London School of Hygiene & Tropical Medicine.*

5 DEFINITIONS

5.1 Population at risk for severe COVID-19 illness

While the majority of cases of COVID-19 have a mild illness, epidemiological data shows that the following patient factors are associated with a more serious or deadly illness (https://www.ecdc.europa.eu/en/current-risk-assessment-novel-coronavirus-situation):

- Risk of hospitalisation increases with age from the age of 30 years
- Risk of death increases from the age of 50 years although the majority of deaths are among the oldest age group
- Older males are particularly affected requiring more intensive care and respiratory support
- Considerable excess mortality in multiple countries affecting both the 15−64 and 65+ years age groups is seen in the pooled analysis of all-cause excess mortality from EuroMOMO. This is particular as at this time of year competing drivers (influenza and high/low temperatures) are largely absent.
- Persons over 65 years of age and/or with underlying health conditions infected with COVID-19 are at increased risk of severe illness and death compared with younger individuals
- Long-term care facilities, which commonly house the elderly and the frail, have been heavily affected by COVID-19. The disease spreads rapidly on introduction, causing high morbidity in residents, commonly with a case fatality of over 25%. The facilities were the focus of over half of the fatal COVID-19 cases in several EU countries.

Collectivities (nursing homes, temporary homes or boarding schools for chronically ill children or with learning issues, youth care, or adult persons with disability, psychiatric collectivities, prisons, and lodgings for seasonal workers) have been recognised as places where grouped cases can occur and where transmission chains are maintained, especially where social distance and hygiene measures are difficult to be respected.

Specifically, in Belgium people living a precarious situation can include, persons not benefiting from the National Institute for Health and Disability Insurance health insurance (NIHDI - of RIZIV - INAMI) and may not come forward for health care and may not be tested, as for example,

- persons not in order with their social security contributions,
- detainees confined in penitentiary establishments (whose health coverage is provided by the FPS Justice department),
- applicants for international protection who reside in accommodation facilities (whose coverage is provided by federal agency for the reception of asylum seekers (FEDASIL) or the public center for social welfare (OCMW-CPAS),
- and persons without a residence permit (whose coverage is provided by urgent medical assistance).

5.2 COVID-19 case definition

The World health organization (WHO) defines a COVID-19 case as: A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

While the European Centre for Disease Prevention and Control (ECDC) defines a case as: any person meeting the laboratory criteria of detection of SARS-CoV-2 nucleic acid in a clinical specimen.

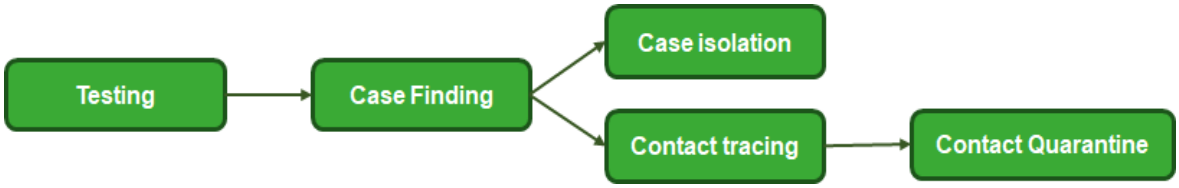
Each country has used a slightly adapted case definition, often depending on the availability of the tests at the time. The case definition was adapted along the course of the epidemic.

5.3 Testing

5.3.1 Strategy

Testing aims at diagnosing patient with symptoms and at the start of the epidemic was mostly performed in a hospital or triage setting. To stop the resurgence of the virus, testing currently aims to case finding (figure) and can be performed in additional settings such as general practitioners ambulatory or nursing homes by trained personnel.

Figure 6 – Case finding



Case-finding is identifying **symptomatic or asymptomatic contagious individuals** called “cases” or highly “suspected cases” with COVID-19, through polymerase chain reaction (PCR) testing on swab samples. The suspected person will be **isolated**. When a test result proves the patient as a confirmed case, **contact tracing** is started. Contacts are those people who have been in close contact with a case in the period the case was infectious (pre-symptoms and/or while symptomatic). All contacts identified will need to stay at home (or in another setting) in quarantine. By **isolating cases** and **quarantining contacts** for 2–14 days, it separates “cases” or people with COVID-19 and “contacts” from the rest of the population, reducing exposure of the public. These ‘intrusive’ actions, if carried out promptly and systematically, can stop an epidemic from spreading.

Case finding can also be performed through **systematic screening** procedures in already identified risk groups, or by identifying new risk areas or groups followed by screening, and testing the contacts of suspected or confirmed patients diagnosed by for example a general practitioner. Priority testing can for example be set up for workers in certain critical services.

5.3.2 Type of test

There is currently no perfect ‘gold standard test’ for the diagnosis of COVID-19 to which diagnostic tools can be compared to. Knowing the advantages and limitations of each tool is essential to use tests and interpret results adequately.

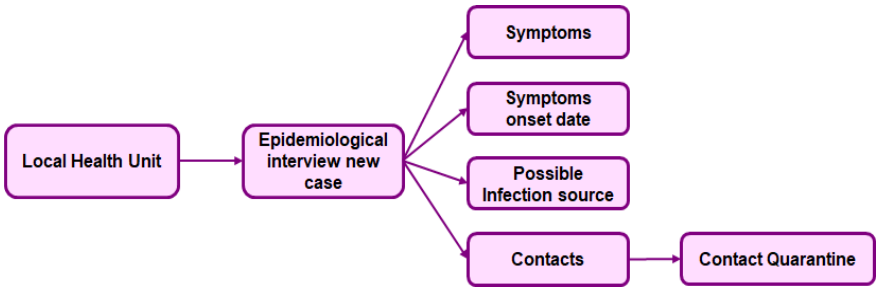
The majority of molecular diagnostics developed for the detection of COVID-19 involve **real-time PCR.** (Sciensano fact sheet June 14th) The assays are indicated for the qualitative detection of nucleic acid from SARS-CoV-2 on upper respiratory tract samples (e.g. naso-pharyngeal specimens, oro-pharyngeal specimens) and lower respiratory tract samples (e.g. bronchoalveolar lavage (BAL) specimens, endotracheal aspirates, expectorated sputum). A correct sample collection technique is essential to ensure best test performance and avoid false-negatives. Further, the use of saliva which is easy to collect (including self-collection by the patient) as a sample is currently been explored internationally. For example, a PCR on saliva samples collected at home has been approved for use in the US (FDA news). In France (France news) a reverse transcription-loop-mediated isothermal amplification (RT-LAMP) is in development as a rapid diagnostic test.

Immunological assays (via Enzyme-linked immunosorbent assay (ELISA) or immunochromatography techniques) have been developed for the measurement of circulating antibodies of COVID-19 patients (Sciensano COVID-19_fact_sheet). Total seroconversion rates are high but persistence of antibodies after COVID-19 and correlation between antibody levels and protection against re-infection or disease is currently unknown. A large number of in-house and commercial tests are being developed of different qualities. Prior to implementation, tests must be registered and quality checked by the usual regulatory bodies.

5.4 Contacting and tracing / Contact identification

A contact and tracing procedure consists of the steps below.

Figure 7 – Contact and tracing procedures steps



It is normally conducted by local health authorities, who conduct an epidemiological interview, normally conducted through phone, with newly diagnosed cases. During this interview detailed information regarding the symptoms, onset and description, are asked to the patient. The patients is also asked to identify a possible source of infection, and to provide a list of the people with whom he/she has been in close contact. This list should contain identifying information about the person which whom the case came in contact and a possible contact of the person, as for example the phone numbers, email address or home address. This should allow the tracing of contacts in order to communicate them the quarantine, testing and/or monitoring measures to put in place.

6 COMPARISON

6.1 Testing strategy

A summary of the testing strategies by country is in Table 3.

6.1.1 Symptomatic persons

All the testing strategies (status June 30th – to July 9th) include the testing of **symptomatic** people inclusive mild symptoms. A prescription by a medical doctor after assessment (including telephone) is the rule in most countries investigated (except in Denmark where anyone can be tested).

6.1.2 Asymptomatic persons

Asymptomatic persons who have been in **close contacts** with a confirmed case are tested in five out of the seven countries (not in Italy and the Netherlands). The definition of 'close contact' differs slightly between the countries where testing is performed but the basis is the same: a close contact is a person who had contact with the case from 2 days before symptom onset in the case (or 7 days before the test in asymptomatic cases in France) up to 7 days after and in the following circumstances: (i) household members of the case (living in the same home); (ii) persons sharing a confined space for over 15 minutes with the case; or (iii) when there was direct physical contact with the case likely transferring body fluids. The fact that the contact and the case were both wearing approved surgical masks or were separated by a glass may nevertheless exclude the contact from close contacts (e.g. in France).

Testing of asymptomatic persons in **collectivities** i.e. hospitals, nursing homes, precarious populations in housing structures is proposed or planned in the context of protecting a known **at risk population** (likely to develop severe illness when infected) or to detect early outbreaks in places where **clusters** are more likely to happen (high concentration of persons in a limited living space). Protection of the elderly in nursing homes by weekly testing of the staff is planned in Denmark in case of spread of infection with COVID-19 in a municipality or another geographically delimited area (and advised in France in case of gradual resurgence). In Germany, Italy and Spain systematic or serial testing in a collectivity is advised once a single confirmed case is detected (in Belgium for 2 cases). This case is then considered an outbreak and the outbreak strategies are applied.

In case of **hospitalisation** (for any reason) systematic testing is performed in Belgium (when laboratory capacity is available), Denmark, and Germany. The reasoning may be either to protect the out-patient undergoing a procedure with a COVID-19 exposure or the protection of hospital staff and admitted patients from asymptomatic cases being hospitalised.

A **personal free choice** to be tested when asymptomatic is possible against payment in Germany and free in Denmark, and for travel against payment in Belgium.

6.1.3 Laboratory organisation

Since the start of the epidemic laboratory capacity to perform PCR testing has been increased in all countries. National networks commonly use clinical public hospital and private laboratories, but university and veterinary research units as well as biotechnology and pharmaceutical industries have joined the effort during the height of test shortage. France has also invested in high intensity machines, bought in China, and created 21 dedicated high-intensity PCR diagnostic laboratories functioning 7d/7 during the crisis. Similarly, Belgium created extra test capacity as an overflow mechanism to the national laboratory. Countries are continuously augmenting laboratory capacities. For example, Belgium, plans a capacity of 80 000 per day by October 2020. The daily capacity between countries varies and is stated below (Table 1). The quality control for testing is performed in COVID-19 reference centres (e.g. in Belgium, Germany, Italy, Spain, and the Netherlands).

Table 1 – Test capacity

	Belgium	Denmark	France	Germany	Italy	Spain	The Netherlands
Capacity tests per day	Around 30 000	11 000	Around 135 000	170 000	80 000	32 664	6 400
Population*	11 600 000	5 800 000	67 064 000	83 800 000	60 500 000	46 800 000	17 100 000
Capacity tests per 1000 inhabitants (per day)	Around 2.6	1.9	Around 2.0	2	1.3	0.7	0.4
Number of laboratories	90	Not found	Not found	200	238	176	64
Laboratories							
● University	X	X	X			X	X
● Governmental	X		X			X	X
● Veterinary	X		X			X	X
● (Pharmaceutical) Industry	X	X					
Any laboratory that is COVID-19 validated			X	X	X	X	X

**rounded to the nearest thousand*

The SI-DEP centralised database platforms in France and Spain work in real-time; prescribers can directly access the result. The centralised 'federal platform' in Belgium links results from test centres and back to the medical doctors through 'the eHealth platform'. Results are shared via regional networks of laboratories and doctors in real-time. In The Netherlands results are forwarded by secure email (not clear if this is real-time). The result is also forwarded directly to the contact tracing system in Belgium, France, Germany, Italy, and Spain to start the contact tracing programme.

6.1.4 Communication towards the patient

The results recorded into the centrally organised databases can be accessed by the prescribing doctor for all countries except the Netherlands where the laboratories communicate preliminary results by email or phone and mail a confirmation report in a second stage. In Denmark the testing appointments are equally centralised through the personal ID-number and linked to the result and tracking system. In Denmark testing appointments can be made by citizens and results are accessed through the ID system. Patients in most countries will receive the result via the doctor or tracing centre (Table 2). In France, communication of results to the patient is firstly done either by the laboratory (by phone) and/or via the SI-DEP database. Patients are then contacted by the general practitioner (GP) and by a contact tracing centre of the health insurance. In some settings (e.g. in school), communication is done via the regional health agencies.

Table 2 – Communication of results to the patient

	Belgium	Denmark	France	Germany	Italy	Spain	The Netherlands
Doctor (by phone)	X	X	X	X	X	X	X
Platform for patients health data / app	X	X	X		*		
Laboratory			X				
Contact tracing centre		X	X				
Regional health service (by phone)			X		*		X

** available in some regions*

Table 3 – Testing strategy by country

	Indications for PCR Testing	Lab capacities	Communication and recording
Belgium	1. Symptomatic people 2. High risk contacts of COVID+ And if the capacity is sufficient: 3. Any person requiring hospitalisation 4. Each new entry in a collective facility (e.g. nursing homes) Management by the regional health authorities in case of a cluster (2 positive cases) in a collective facility. 5. PCR tests in the context of international travel can exceptionally be performed and charged to travellers if the foreign government's requirement is stated on the website of the Federal Government Foreign Affairs.	15 000 PCR tests per day on average have been performed daily since mid-June 2020 by the National network of +/-90 clinical labs (mostly hospital labs, and some private labs). University and veterinary research units, as well as biotechnology and pharmaceutical industries joined the effort during the period of tests shortage. Estimated daily Capacity July 6th is 30 000. Will increase to 80.000 in October 2020. COVID-19 reference centre University Hospital Leuven. Shortages are followed up nationally by a taskforce for testing and shortages and through the email-address coronashortages@fagg-afmps.be	• Currently 24-48 hours between the consultation and test results. Efforts to shorten the duration to 24h. • Results reported to the GP (eHealthBox) and to call centres, and reported in the COVID-19 database managed by Sciensano. • The GP informs the patients. The patient has also access to test results via usual online portals that allows patients to consult various personal health data. The mandatory reporting of all possible cases to the health inspectorate of the Federated entity is done via the eForm. For possible cases (with symptoms) the reporting is done at the time of testing, and for asymptomatic cases when the result is known (no time window specified).

		Shortages survey June 11th (personal communication Sciensano) response of 66 labs out of all laboratories: Shortages in swabs: 21 / 66 labs Shortages in transport medium: 12 / 66 labs Shortages in extraction reagents: 14 / 66 labs. (+ 10 run lower volumes due to extraction reagent shortages) Shortages in amplification reagents: 7 / 66 labs ((+ 10 run lower volumes due to extraction reagent shortages)	
Denmark	1. Symptomatic people (even with mild symptoms) 2. Close contacts of a confirmed case 3. Asymptomatic inhabitants of nursing care homes (and other institutions) as well as frontline nursing home personnel in case of infection among inhabitants or colleagues. From 30/06, systematic testing of nursing staff working at nursing homes and in home care in case of spread of infection with COVID-19 in a municipality or another geographically delimited area 4. Patients expected to be hospitalised for 24 hours or more, independently of the patient's condition (referral by the hospital) 5. Out-patients who presumably will undergo one or more procedures which constitute a serious risk of exposure to COVID-19 6. Anyone who wants to be tested (schedule a test online at coronaprover.dk, or as part of government monitoring)	• Whole country: 11 000 tests per day • Capital Region: 1 500 tests per day to be extended to 5 000 tests per day in June Public-private cooperation: government & pharmaceutical industry labs.	• Individuals with a NemID* will be able to see their test result on sundhed.dk and in the MinSundhed app. Most people can expect to be able to see their test results the day after the sample is taken, but in some cases, it may take up to 72 hours (three days). • Individuals without a NemID can contact their doctor to get the results (also from sundhed.dk) or by calling the contact tracing centre Coronaopsporing • The system is centralised. All appointments for testing must be booked TestCentre Denmark (on-line coronaprover.dk) and Corona Tracking (Coronaopsporing) which is a division of the Danish Patient Safety Authority contacts by phone any individual tested positive to track close contacts. **NemID (literally: EasyID) is a common log-in solution for Danish Internet banks, government websites and some other private companies. Everyone in Denmark who is over 15 years old and has a CPR-Number is eligible for a NemID that can be used with their bank as well as public institutions.*
France	1. Symptomatic people (a prescription is required) 2. High risk contacts of COVID+ (no prescription is required)	All research and veterinarians labs are now requested to support public laboratories. Three types of structures are used: 1. Hospital laboratories (capacity:	• A maximum time limit of 24 hours between the consultation and test results is required. • All results are directly reported by laboratories into one database in real time (in the SI-DEP database).

	3. Preventive testing campaigns are planned in case of identified clusters (managed by regional health authorities and GPs), in collectivities, and for the precarious populations (depending of the spread of the epidemic, see 7.5 for details) Systematic testing is not recommended in companies, public services, or for all patients admitted to hospital.	35 000 tests/day), for people presenting in emergency departments or hospitalised patients. 2. Dedicated high-level PCR diagnostic laboratories: 21 sites with high intensity machines publicly financed and created during the crisis, open (7/7), (40 000 tests/day) 3. Private city laboratories (60 000 tests/day, may increase further).	
Germany	1. All people with respiratory symptoms OR loss of smell/taste 2. Category I of contacts of confirmed cases with symptoms or not 3. People with clinical or radiological evidence of viral pneumonia related to hospital or nursing home 4. Systematic screening of all new people being admitted to a hospital 5. Serial testing can be performed on the staff and the residents of a nursing home if there is a confirmed case 6. All those who want to be tested and are willing to pay for the test	• Around 200 laboratories available • Total capacity of almost 170 000 tests per day	• Laboratory results are available in around 24h • Medical doctors and laboratories need to report COVID-19 and SARS-CoV-2 cases to the local public health authority within 24h.
Italy	1. A person with an acute respiratory infection AND without another aetiology to explain the cause AND history of travel in countries/areas in which local transmission has been reported in the previous 14 days before symptoms onset 2. A person with any acute respiratory infection AND had contact with a probable or confirmed COVID-19 case in the 14 days before symptoms onset. 3. A person with a severe acute respiratory infection (SARI) AND need for hospitalisation AND without another aetiology	• There is a National Reference Laboratory • 238 laboratories designated at regional level for performing COVID-19 RT-PCR • Total capacity of almost 80 K tests per day • The regional distribution is different for each region	• Monitoring is carried out through two daily data flows: ○ data sent by the regions and coordinated by the Ministry of Health and the National Institute of Health ○ Integrated COVID-19 surveillance system, where the regions send the data to the National Institute of Health

	4. Asymptomatic close contacts at the end of quarantine are tested whenever possible. 5. In the case of outbreaks involving hospitals, long-term care, RSA or other residential structures for the elderly, the test must be offered to the residents and to all the health workers involved.		
Spain	1. Symptomatic people 2. Asymptomatic people considered as close contacts (according to Regional Health Authorities). 3. Single case in social health centres will be considered an outbreak: PCR will be carried out on close contacts or, depending on the circumstances, on all residents and workers of the centre, in the manner established by each Autonomous Region.	• 176 public laboratories perform PCR tests • In the week June 26 - July 2: 200 986 PCRs were performed.	• A maximum time limit of 24 hours between the consultation and test results is required. • All results are directly reported by laboratories into one database in real time. • Communication by the general practitioner to the patient. • The Autonomous Regions have to notify the state level (by using the national COVID-19 confirmed case notification survey) through the SiViEs surveillance tool managed by the National Epidemiology Centre each day before 12:00 all information accumulated and updated up to 24:00 the previous day will be incorporated. This surveillance has been in place since 12 May.
The Netherlands	1. All people with symptoms of infection can be tested 2. No PCR testing in asymptomatic people (close contacts)	• Initially 2 reference labs (Erasmus MC & RIVM-IDS), and 13 regional labs. • Other medical microbiological labs, bioveterinary labs, and HPV-screening labs can be validated. • Currently 49 extra labs validated. The criteria indicate that they should be able to assess at least 100 tests a day. • The coordination of the organisation and logistics of extra testing is done by the project group of the GGD's and they are supported by the National Government.	Currently 24-48 hours between the consultation and test results. 1. Results of diagnostics from Erasmus MC and RIVM-IDS: *To the hospitals:* • As soon as possible through telephone and via secure email ('caremail' or 'zorgmail') if available. • Request form to include a direct 24/7 telephone number of the physician-microbiologist to receive the test result. *To the GGD:* • As soon as possible via secure email (zorgmail), until midnight. • Positive as well as negative results. • Later, a definitive report will be sent through secured email or by mail. • The GGD (Gemeentelijke of Gemeenschappelijke Gezondheidsdienst – Municipal or public health services of the Netherlands) will NOT be called by phone. • For questions on the results, the GGD can contact a virologist of the reference centres by telephone.

	2. Results of diagnostics from GGD to the patient: *In case of a positive test:* • Patient is told by the GGD to stay home • GGD gives information on what the person and housemates should do • GGD investigates contacts and calls them Mandatory reporting of confirmed (tested) cases to the Public Health Services. Transfer of daily information from the electronic patient file (checkbox) to the National Institute of Public Health and the Environment is done.

6.2 Surveillance strategy

Each country has a surveillance system in place with a centralised database covering the national territory (see summary Table 4). Medical personnel in general practices, hospitals, nursing homes, laboratories, contact tracing team and call centres, and regional public health authorities, all have to report COVID-19 cases to the local / regional or national public health authority within a set time frame, mostly 24h.

Table 4 – Surveillance strategy by country

	Surveillance
Belgium	• From two cases in a collective facility: management by federated entities • Registration of: ○ Confirmed cases by date, age, sex and province ○ Cumulative number of confirmed cases by municipality ○ Confirmed cases by date and municipality ○ Hospitalisations by date and province ○ Mortality by date, age, sex, and province ○ Total number of tests performed by date • Four indicators are used to monitor the evolution of the epidemic: confirmed cases, new hospitalisations of laboratory-confirmed COVID-19 cases, intensive care unit occupancy, and deaths (now presented with the 7-day moving average). • Seroprevalence on blood donation samples (n=1500) organised by the Red Cross and Sciensano • Measure and follow-up of prevalence, seroprevalence and seroconversion in healthcare workers (n=785) in Belgian hospitals (Sciensano and the Institute of Tropical Medicine) between March and September 2020
Denmark	Systems used for surveillance of COVID-19 include: • national-level tracking of number of: ○ tests, ○ hospital admissions, ○ patients needing ventilator assistance for breathing, ○ deaths • a website with voluntary self-reporting of symptoms where citizens report influenza-like symptoms (https://influmeter.dk) • a panel testing surveillance system is initiated by the Statens Serum Institut (SSI) based on a sample of GPs and a sample of their patients who are tested on a weekly basis. • Blood banks testing for antibodies • Testing of random samples of the total population (PCR and antibodies) • From May 7, monitoring of the development of COVID-19 infections in the population based on the testing of random samples of the total population. Continuous testing of health care personnel and personnel in nursing homes etc. with no symptoms is being initiated. Prevention of infection by regular staff testing - Denmark July 13th: In case of spread of infection with COVID-19 in a municipality or another geographically delimited area, regular testing of health and care professionals in that area should be conducted. This is for the purpose of preventing the spread of infection A cross-cutting group 'signal group' under the leadership of the Statens Serum Institut and with Representatives from the National Board of Health and the National Board of Patient Safety continuously assess the incidence of local spread of infection, with the aim of being able to initiate quickly preventive measures if there is evidence in the surveillance of the spread of infection via chains of infection or outbreaks. If the group assesses that in an area there is a spread of infection, there cannot be immediately explained by a local outbreak at a particular institution or the like, the Danish Agency for Patient Safety should enter into a dialogue with the municipality and their infection hygienic unit for the purpose of initiating regular testing of health and care personnel in the area in question. Healthcare

	professionals should be tested every 7 days for 2 months or until the spread of infection in the area where the chains of infection are not covered.
France	• A surveillance is done by regional health agencies to identify potential chains of transmission and clusters, in collaboration with the National Public Health Institute and the Ministry of Health. • Critical clusters: how to identify a critical cluster is not yet defined but the proposal is to base the identification on a set of indicators: ○ The absolute number of cases ○ The density of incidence in the district (e.g. from 50 cases/100 000 inhabitants/week). ○ The context in which this cluster occurs: company, school, nursing home for older people, precarious population • Monitoring of: ○ Mortality of COVID-19 hospitalised patients (per day and in total); ○ Mortality of COVID-19 patients in homes for the elderly and nursing homes (per day and in total); ○ Overall and excess mortality; ○ The number of new hospitalised patients for COVID-19 and the total number of people hospitalised for COVID-19; ○ The number of new patients admitted to intensive care unit for COVID-19 and the total number of persons admitted to ICU for COVID-19; ○ The number of tests performed; ○ The number of confirmed cases (PCR-positive); ○ The time lapse between the steps of the testing-tracing-isolating strategy; ○ The effective reproduction number (R) and the doubling time of the epidemic; • The scenario 3 (low level diffuse epidemic) of the strategic plan can be based on indicators such as an R >1.
Germany	Laboratories need to electronically report positive and negative results of SARS-CoV-2 testing to the national Robert Koch Institute. Additionally to the laboratory test, data on demographics (age and gender), clinical symptoms and hospitalisations, is also collected.
Italy	The surveillance strategy of Italy to monitor the second Phase of the COVID-19 epidemic includes the following indicators: **Process indicators on monitoring capacity** 1.1 Number of symptomatic cases per month in which the symptom onset date is reported / total of symptomatic cases reported to the surveillance system in the same period. 1.2 Number of cases reported per month with a history of hospitalsation (in departments other than ICU) indicating the date of hospitalisation / total of cases with history of hospitalisation (in departments other than ICU) notified to the surveillance system in the same period. 1.3 Number of cases reported per month with history of transfer / hospitalisation in the intensive care unit (ICU) which indicates the date of transfer or hospitalisation in ICU / total of cases with history of transfer / hospitalisation in intensive care notified to the surveillance system during the same period. 1.4 Number of cases reported per month in which the municipality of residence or residence is reported / total of cases reported to the surveillance system in the same period. 1.5 Number of checklists administered weekly to residential social-health facilities (optional). 1.6 Number of residential social-health structures responding to the checklist weekly with at least one problem encountered (optional). **Process indicators on diagnostic capacity** 2.1 Percentage of positive swabs excluding as far as possible all screening activities and "re-testing" of the same subjects, overall and by macro-setting, per month. 2.2 Time between start date of symptoms and date of diagnosis. 2.3 Time between symptom start date and isolation date (optional).

	2.4 Number, type of professional profiles and person-time dedicated in each territorial service to contact-tracing. 2.5 Number, type of professional profiles and person- time dedicated in each territorial service to the activities of collection/ sending to the reference laboratories, and monitoring of close contacts and cases placed in quarantine and isolation respectively. 2.6 Number of confirmed cases of infection in the region for which a regular epidemiological investigation was carried out with tracing of close contacts / total of new confirmed cases of infection. **Research and management of contacts** 3.1 Number of cases reported in the last 14 days. 3.2 Rt calculated on the basis of the integrated surveillance (two indicators are used, based on the beginning of symptoms and the date of hospitalisation). 3.3 Number of cases reported to the sentinel surveillance COVID-net per week (optional). 3.4 Number of cases by diagnosis date and symptoms onset date reported to COVID-19 integrated surveillance per day. 3.5 Number of new clusters (2 or more epidemiologically linked cases or an unexpected increase in the number of cases in a defined time and place) 3.6 Number of new confirmed cases by Region not associated with known transmission chains. 3.7 Number of accesses to the emergency unit with ICD-9 classification compatible with syndromic panels attributable to COVID-19 (optional). 3.8 Occupancy rate of total ICU beds for COVID-19 patients. 3.9 Bed occupancy rate for COVID-19 patients by province
Spain	SiViEs surveillance tool managed by the National Epidemiology Centre: • Individual record of every notified case • Number of suspected cases in primary care and attended in hospitals (do not include persons indicated as having PCR for screening purposes). This information shall be reported in aggregate to the CCAES at established intervals. • Percentage of suspected cases of COVID-19 in primary and hospital care where a PCR has been performed (not including PCRs resulting from screening tests in hospitals). This information shall be reported to the CCEAS on a weekly basis. It shall be reported on Wednesdays before 12 noon with the data from the previous week, from Monday to Sunday. • Number of close contacts confirmed as cases. This information shall be reported in aggregate on a weekly basis to the CCAES from the contact tracking systems that are established. Contacts confirmed as case that week/follow up contacts that week x 100) It will be notified on Wednesdays before 12 noon with the data of the previous week, from Monday to Sunday. • Number of professionals from the epidemiological surveillance services (public health technicians, epidemiologists, public health nurses, other technical staff) dedicated to the response in relation to the number of daily cases detected and the reference population. Indicating the initial personnel and the new reinforcement personnel incorporated. This information will be notified on a weekly basis to the CCAES. It shall be reported on Wednesdays before 12 noon with the data of the previous week, from Monday to Sunday. • Notification of clusters/outbreaks (with a data collection form)
The Netherlands	• Mandatory reporting of confirmed (tested) cases to the Public Health Services. • Transfer of daily information from the electronic patient file (checkbox) to the National Institute of Public Health and the Environment is done.

The reported surveillance indicators for cases vary slightly between countries with reporting of cases by age, sex, municipality, number of admitted cases to hospital, number needing intensive care, and deaths and mortality. Surveillance on a regional level is active in France (e.g. evaluation of the number of cases/100 000 inhabitants/week per region and district and identification of the number of outbreaks, defined as the occurrence of at least 3 confirmed or suspicious cases, within a period of 7 days, and belonging to the same community). In Belgium, regions take action after they are informed i.e. two cases in a collectivity.

Several other methods to survey or to describe and study (some are research initiatives) the general population by PCR or serological tests are:

1. Serial PCR testing on a set of patients: in Denmark a sample of GPs test a set number of their patients on a weekly basis
2. PCR testing and antibody testing on a random sample of the population: Denmark
3. PCR test campaigns in case of outbreak or for some target population: France
4. Sporadic mass testing campaign in long-term care facilities: Belgium
5. Seroprevalence on blood donation samples: Belgium
6. Seroprevalence per gender, age and region estimated from anonymised random samples from clinical laboratories including for health workers to analyse the level of herd immunity: France
7. Measurement and follow-up of prevalence, seroprevalence and seroconversion in healthcare workers: Belgian hospitals

6.3 Tracing strategy

The tracing strategy by country is summarised in Table 5.

6.3.1 Organisation of contact tracing

All countries have a system in place for tracing and contacting the contacts of cases. The organisation happens at the regional level. The approach differs from country to country:

1. Call centres or call teams have been created to telephone the cases and identify close contacts: Belgium (Federated entities), Denmark (division of the Danish Patient Safety Authority), France (trained teams at the health insurance - Ameli), Germany (local health authority), Italy (prevention departments of the local health authority), Spain (Autonomous regions), and the Netherlands (local health authority - GGD).
2. A face to face interview of cases, or of family members and caregivers of cases to identify contacts (Italy when hospitalised, by GPs in Denmark and France)
3. Contacts of cases call the tracing centre themselves:
    a. In France whenever a case refuses to give the names of contacts, the case can personally ask the contact to directly call the centre.
    b. Additionally (in France), people using the STOPCOVID-App and who have been in contact with a confirmed case receive App quarantine instructions and are recommended to contact the contact-tracing platform. Improved dissemination of the App is in progress by transparent communication.
    c. In Denmark a contact can anonymously log into the App SmitteStop". The App will tell the person if he was in contact for more than 15 minutes at a distance of 1 meter; the App will prompt the person to get tested.
4. Local field tracing teams for outbreaks: In Germany each call team (one team for each 20 000 persons) is supported by a mobile team (medical students). The creation of mobile teams in case of outbreak is also in process in France. In Belgium, a field supervisor can visit the patient/contact's residence if a contact by telephone was not possible.
5. Specific measure for health workers or population at risk: In France, if the case worked in a hospital or in a medico-social institution, the determination of measures and evaluation of the contact should be referred to the occupational physician and the operational hygiene team of the health care institution. In other workplaces, the occupational physician as well as a reference COVID-19 person is also implied, especially for workers at risk.
6. The Ministry of health is informed of contacts domiciled abroad (Italy).

6.3.2 Monitoring of contact tracing

Italy monitors the time between the steps of testing-tracing-isolation (between time of positive test and contact identification) and France plans to have similar indicators. Italy as from June 25th makes a distinction between "cases identified by the diagnostic suspect" (swab positive cases emerging from clinical activity) and "cases identified by screening activities" (investigations and tests, planned at national or regional level, which diagnose positive swab cases).

Similarly, in Spain health care workers have to report the number of close contacts confirmed as cases on a weekly basis.

6.3.3 The use of contact tracing APPs

On June 16th, the German federal government launched the **Corona-Warn-App** developed by the SAP corporation and Deutsche Telekom (cost of around €20 million) and overseen by cyber security experts from German research institutes. The App sends a push message to users if they have been exposed to a person diagnosed with COVID-19 (at least 15 minutes within the last 14 days). The App installation is voluntary via google or Apple. Specification for the smartphone needed are at least Android 6 or iOS (13.5). Not all laboratories and public health offices are equipped with the necessary digital infrastructure to send test results to the system. Hence, people who have been tested by such laboratories and found to be infected must contact a telephone hotline.

The app **StopCovid** developed in France and the **IMMUNI** application in Italy, both used on a voluntary basis, have the same features as the German App. The application will use pseudonymised data, Bluetooth technology, without the use of geolocation, and will not lead to the creation of a registry of contact persons.

The Danish Health Authority asks, on a voluntary basis, those who have tested positive to inform persons with whom they have been in close contact with, so they too can be tested. This can be done automatically and anonymously with the **App "SmitteStop"**. If an App user tests positive, they can log into the App using their NemID, upon which a notification will be prompted to users who have been in contact with infected users for more than 15 minutes at a distance of 1 meter.

The Spanish have a voluntary self-assessed symptoms based App called **Asistencia-Covid19**. A COVID-19 tracing App is in trial in the Canary Islands.

At the beginning of July, users in the Netherlands will be able to test a **corona-notification-App** in the region of Twente.

For Belgium, an App is being developed aiming to be ready by September. It will have the same characteristics as the German App.

Table 5 – Tracing strategy by country

	Tracing
Belgium	1. GPs are the first point of contact for all suspicious patients. 2. Positive patients (or before test results if asked by the GP) are contacted by call centres managed by the federated entities. 3. Close contacts are contacted by the call centres; contacts receive a texted code to take to their GP. 4. Apps is work in progress: should be voluntary, bluetooth technology, anonymised data, and without geolocalisation. 5. <u>Contact definition:</u> • From 2 days before the first symptoms (or 2 days before the test for asymptomatic people); • People living in the same place; • Face-to-face contacts < 1.5 m for at least 15 min (cumulative), without use of a plexiglas; • Direct physical contact; • Direct contact with excretions or body fluids; • People performing care acts without protective equipment (and not always within a distance of 1.5m); • People having shared a confined space for at least 15 min (where a distance of 1.5 m was not always respected and/or where objects were shared; except if plexiglas was used);

	• For schools: the whole class for children < 6 years old; only neighbours for children ≥ 6 years. (Decision in concert with competent authorities, see below); • People who have travelled with a COVID-19 patient > 15 minutes (with specific rule for aircrafts).
Denmark	1. The Danish Health Authority asks everyone (on a voluntary basis) who has been tested positive for coronavirus to contact themselves the persons that they have been in close contact with, so they too can be tested. This can be done also automatically and anonymously with the app "SmitteStop". They can log into the app using their NemID*, upon which a notification will be prompted to users who have been in contact with infected users for more than 15 minutes at a distance of 1 meter. 2. From May 30th, corona-infected citizens must declare with whom they have had contact. Resistance to do so will result in a fine. 3. From June 10th, the Danish Patient Safety Authority contacts all infected persons with an offer to assist in tracing and contacting close contacts (nudge strategy). 4. An employee from Corona Tracking (Coronaopsporing) which is a division of the Danish Patient Safety Authority contacts by phone any individual tested positive to track close contacts and refer them for testing (centralised strategy) • For individuals with symptoms: close contacts from 48 hours before symptoms started to 48 hours after cessation of symptoms must be traced • For individuals without symptoms: close contacts met 48 hours before the test to 7 days after the test must be traced 5. GPs can also refer close contacts for testing. The doctor creates two referrals for testing at a hospital testing clinic. The testing takes place at an interval of two days after exposition to infection. The individual subsequently returns to coronaprover.dk and books the appointments. 6. <u>Close contacts</u> <u>are defined as:</u> • People you live with • People you have had direct physical contact with (e.g. hug) • People who have had unprotected and direct contact with infectious secretions from you (for example, if you have accidentally coughed or sneezed at them, or if they have touched your used handkerchief, etc.) • People you have had close "face-to-face" contact with within 1 meter for more than 15 minutes (for example, during a conversation) • Healthcare professionals and others who have participated in your care and have not used the recommended protective equipment. **NemID (literally: EasyID) is a common log-in solution for Danish Internet banks, government websites and some other private companies. ... Everyone in Denmark who is over 15 years old and has a CPR-Number is eligible for a NemID that can be used with their bank as well as public institutions.*
France	1. GPs in the front line (identification and information of contacts within the household). 2. Trained teams of the health insurance (identification and information of contacts outside the household). 3. Registry of positive patients (results in real time provided by the laboratories) and registry of contacts (managed by the health insurance). 4. Use of Apps (StopCovid): voluntary basis, Bluetooth technology, pseudonymised data, and no geolocalisation 5. Information of the population is considered as an important successful factor. 6. <u>Contact definition</u>: • From 2 days before the first symptoms (or 7 days before the test for asymptomatic people); • People living in the same place; • Face-to-face < 1m (no time limit); • Direct physical contact; • Direct contact with several episodes of coughing or sneezing in a confined space; • People having given or received hygienic or care acts; • People having shared a confined space for at least 15 min; • Student and teacher in the same school class (no age specification). Decision in concert with competent authorities (see 7.5).

Germany	1. Performed by local and state public health authorities 2. One contact tracing team, of five members each, for every 20,000 inhabitants is recommended 3. The teams are helped by mobile teams composed by medical students 4. The contact tracing activity is mainly through phone calls 5. Use of an Apps (CoronaWarn): voluntary basis, Bluetooth technology, anonymised data, and no geolocalisation 6. There are three types of contacts based on the risk of infection with for each specific recommendations for the reporting and monitoring.
Italy	1. Performed by field teams of the local public health authorities 2. Interview with the index case through a phone call or by hospital staff from family members or caregivers. 3. Identification and list of close contacts with the information needed for the tracing 4. Use of an Apps (Immuni): voluntary basis, Bluetooth technology, anonymised data, and no geolocalisation 5. Contact definition: • contact is any person exposed to a probable or confirmed COVID-19 case in a span of 48 hours before, up to 14 days after, the onset of symptoms or until the time of diagnosis and isolation of the case. If the case has no symptoms, 48 h before sample collection. • A Close contact (high risk exposure) is: • a person living in the same house as a COVID-19 case; • a person who has had direct physical contact with a COVID-19 case (eg handshake); • a person who has had unprotected direct contact with the secretions of a COVID-19 case (for example, touching used handkerchiefs with bare hands); • a person who has had direct contact (face to face) with a COVID-19 case, at a distance of less than 2 meters and at least 15 minutes; • a person who has been in a closed environment (for example classroom, meeting room, hospital waiting room) with a COVID-19 case in the absence of suitable PPE; • a healthcare professional or other person who provides direct assistance to a COVID-19 case or laboratory staff involved in handling samples of a COVID-19 case without using the recommended PPE or by using unsuitable PPE; • a person who has travelled sitting in a train, plane or any other form of transportation within two places in any direction compared to a COVID-19 case; travel companions and staff assigned to the plane / train section where the index case was sitting are also close contacts.
Spain	1. When a PCR is positive, the lab will inform the physician (to inform the patient) and a sort of 'call centre' of the Autonomous Region will start the process of contact tracing. 2. PCR testing in every close contact. 3. Contact definition: • A close contact (within 2 days before the onset of symptoms of the case until the time when the case is isolated and in asymptomatic cases confirmed by PCR, contacts should be sought from 2 days before the date of diagnosis) is defined as follows: • Any person who has provided care to a case: health or social-health personnel who have not used the appropriate protective measures, family members or persons who have other similar physical contact. • Any person who has been in the same place as a case, at a distance of less than 2 metres (e.g. housemates, visitors) and for more than 15 minutes. • Close contact in an aircraft, train or other long-distance transport (and where possible access to passenger identification) is considered when within two seats of a case and the crew or equivalent personnel who have had contact with that case (see flight schematic). All persons within the 5x5 seatings including path way. 4. Spain plans to launch a COVID-19 tracing app through a pilot project in the Canary Islands on June 24th 2020. If successful, it will be applicable nationally with the aim of being interoperable between countries. In the event this app becomes available nationally, would complement the Asistencia-Covid19 app, launched a few months ago to support those users who present symptoms of the virus.

The Netherlands	1. Source and contact tracing will be initiated in case of positive PCR test by the GGD's (within 24h). 2. Source tracing: • The patient is asked where/how (s)he might got infected • GGDs should pay attention to local, regional or national clusters of confirmed cases. They should conduct more investigation and take if necessary supplementary measures. 3. Contact tracing: • GGD initiates contact tracing after receiving notification of a confirmed case • Rapid notification by treating physician and lab are essential including patients' contact details. Only PCR testing in housemates, (close) contacts, if they present symptoms (no PCR testing in asymptomatic persons) Each contact tracing procedure is custom work and is concentrated on the 3 categories of contacts. 4. Contacts definition: • Housemates (Category 1): Living in the same environment during long-time < 1.5m distance of the patient. • Other close contacts (Category 2): ○ (i) > 15 minutes <1.5m distance with the patient during the infectious period. (Health care professionals using prescribed protection materials are not considered close contact) ○ (ii) In circumstances < 15 minutes with high risk of infection e.g. coughing at face, direct physical contact, kissing, etc. • Other contacts (Category 3): > 15 minutes >1.5m distance of the patient during the infectious period e.g. office, class, meetings, etc. The contact tracing of these contacts might in a later stage supplemented with anonymous track-and-trace apps, specifically for contacts who cannot be approached by the index patient. • The infectious period starts 2 days before the clinical signs and ends when the patient is 24h free of clinical signs and minimum 7 days (14 days in case of immunocompromised patients) after the start of the symptoms. • In asymptomatic infections, look back at contacts 2 days before the test. 5. There are specific policies available (quarantine / isolation measures) in the following contacts: • Child care & primary education • Health care practitioners working outside the hospital • Airplane policy • Foreign travellers 6. Contract tracing app: Pilot test (privacy, user friendliness, safety, etc.) at the beginning of July of the corona-notification-app in the region of Twente. The app will be used supplementary to the regular source and contact tracing of the GGD. The app remembers e.g. train contacts, street contacts etc. It works through Bluetooth technology. It is aimed that the cabinet can decide mid-July on the use of the app.

6.4 Isolation and quarantine strategies

Isolation strategies concern confirmed cases (in France, also suspected cases with a negative result) while quarantine strategies concern contacts of confirmed cases or travellers. An overview by country is presented in Table 6.

Table 6 – Isolation cases and quarantine contacts

	Isolation and quarantine

Belgium	• Confirmed case at least 7 days following test results. Contact with GP on day 7, if asymptomatic isolation stopped.
	• Quarantine of their contacts for 2 weeks, with a reduction to 10 days if tested 2 times negative and asymptomatic.
	• Isolation structures are proposed for homeless people.
	• Specific measures for health care workers:
	  ○ Positive test and worker is asymptomatic: home isolation for 7 days after the date of sampling: in case of workforce shortage authorised to work with protective equipment in a COVID-19 unit or in a cohort team (providing home care to COVID-19 patients).
	  ○ Close contact with a negative test: work is exceptionally allowed if this is necessary to ensure continuity of services but only if strict hand hygiene is observed, an active monitoring of body temperature and symptoms, and the social distance of 1.5 m from colleagues is maintained.

Denmark	• Case with symptoms: continue self-isolation until 48 hours after the symptoms are gone (if only a loss of taste and smell remains, the individual is considered symptom-free) • Case no symptoms: self-isolation until 7 days after taking the test. If symptoms appear during the 7 days, self-isolation home for up to 48 hours after you are symptom-free (except the loss of taste and smell)
France	• Isolation of confirmed cases until complete recovery (at least 2 days symptom free). • Quarantine of their contacts: 2 weeks, with a softening (i.e. allowed to go out for essential needs after test result) if tested negative and asymptomatic (NB. If asymptomatic, the test must be performed at day 7 after the last contact => if asymptomatic and negative, the quarantine can be softened from day 8). • If confirmed cases stay within the households: isolation of the whole household, except to respond to basic needs if asymptomatic (limited frequency and following of barrier measures). • Isolation structures are proposed (in respect of the individual choice). • Population at risk: Promotion of voluntary isolation, with accompanying measures to adapt daily life (with the GP as principal actor, i.e. assessing the risk and informing people). The occupational physician is also implied for active workers at risk.
Germany	• All SARS-CoV-2 confirmed cases need to self-isolate themselves for at least 14 days from onset of symptoms (or hospital discharge) and if free of symptoms for at least 48h. • Quarantine of their contacts Category I • If a close contact was previously reported as a COVID-19 case, no quarantine is required, self-monitoring should be carried out.
Italy	• All confirmed cases need to be isolated until the end of the symptoms and after two sequential negative tests 24 hours apart from each other.

	• All close contacts and those who are discharged from the hospital clinically cured but still COVID-19 positive, must be placed in quarantine at home for 14 days and must be monitored daily. They need to: ○ ban mobility from their home ○ ban social contacts ○ remain reachable for surveillance ○ measure their body temperature twice a day ○ in case of symptoms, contact the general practitioner and self-isolate themselves • Persons arriving in Italy from third countries are quarantined (all countries except: ○ a) Member States of the European Union; ○ b) States parties to the Schengen Agreement; ○ c) United Kingdom of Great Britain and Northern Ireland; ○ d) Andorra, Monaco; ○ e) Republic of San Marino and Vatican City State) • Asymptomatic close contacts at the end of quarantine are tested whenever possible. • The public health operator of the territorially competent Prevention Department: ○ prescribes the quarantine for 14 days after the last exposure, and informs the General Practitioner or Paediatrician from whom the contact is assisted for the purposes of Social Security certification; ○ carries out active surveillance daily
Spain	<u>Primary care setting:</u> • Confirmed case: Home isolation (if cannot be guaranteed, use hotels or other facilities) ○ symptomatic: up to 3 days after resolution of fever and clinical presentation with a minimum of 10 days from onset of symptoms ○ asymptomatic: until 10 days from diagnosis • Suspicious case: ○ Identify and recommend house-members to avoid leaving home immediately ○ When the PCR result can be guaranteed within 24-48 hours (depends on corresponding Autonomous Community): wait for PCR confirmation. ● confirmed case with active infection: see above and identification and control of the remaining close contacts (non-cohabitants) ● PCR negative, the quarantine of contacts will be suspended. Recommendations for quarantine: stay at home until 10 or 14 days after the last exposure to risk, i.e. the day of last contact with the case. <u>Residents in centres for the elderly or in other social health centres:</u> • isolation in the centres (if clinical condition allows it) • isolation shall be maintained until three days after the resolution of the fever and the clinical picture, with a minimum of 10 days from the start of the symptoms.

	• The follow-up and discharge will be supervised by the doctor who has done the follow-up in his centre or in the way that is established in each autonomous community. • If the effective isolation of mild cases cannot be guaranteed, isolation in hotels or other facilities fitted for such use will be indicated if this possibility exists. <u>Discharge from hospital of a COVID-19 patient:</u> ✓ home isolation must be maintained with monitoring of the clinical situation for at least 14 days from the date of discharge from hospital. After these 14 days, and provided that three days have passed since the resolution of the fever and the clinical picture, the isolation may be terminated. In any case, if a PCR is performed and a negative result is obtained (before these 14 days of home isolation from hospital discharge have elapsed) the patient's isolation may be terminated. ✓ If the last negative PCR is performed at the time of hospital discharge and there are no respiratory symptoms in the three days prior, the infection is considered to have been resolved and the patient may be discharged without the need for home isolation. In any case, the provisions of each Autonomous Region will be followed.
The Netherlands	**<u>Quarantine strategies for 3 categories of contacts</u>:** 1. **Housemates (Category 1)**: The GGD informs all housemates (also children) orally and written with the following advice: • Quarantine at home during 14 days after the last contact with the confirmed patient i.e. telework, no public transportation, no visitors - especially not with a high risk to be infected. • Taking care of cough- and hand hygiene. • To be alert, during 14 days, for clinical signs and symptoms of COVID-19 (coughing and/or nose cold and/or fever) and (i) in case of suspected fever (≥38°C) measuring temperature (rectal or via the ear), (ii) call GGD immediately for appraisal and diagnostics. • GGD should be able to contact you during the period of quarantine. In case the housemates show clinical signs/symptoms of SARS-COV-2 infection, the GGD is responsible for testing them asap. <u>Exit quarantine for housemates</u>: • 14 days after the last moment of contact with the confirmed case, or 14 days counting from the day the confirmed case is symptom free AND at least 7 days after the start of the symptoms (14 days in immunocompromised patients) • And the housemate is symptom free during this period. Telephone call from the Municipal Health Service (GGD) to housemate at the beginning of the contact tracing, around day 7 (half-way) and day 14 (end) of the monitoring period, to follow up quarantine measures and discuss symptoms. Transmission within members of the same family can lead to prolongation of the monitoring period. The moments to call are adjusted. People working in the vital sector / crucial professions stay at home in quarantine. There are exceptions in consultation with GGD and the company physician, and only when they are asymptomatic. 2. **Other close contacts (Category 2):** The GGD informs other close contacts orally and written with the following advice: • Quarantine at home during 14 days after the last contact with the confirmed patient i.e. telework, no public transportation, no visitors - especially not with a high risk to be infected. • Children ≤ 12y can go to school and play sports. • Keep at least 1.5m distance from other persons if you come out of home.

- Taking care of cough- and hand hygiene
- To be alert, during 14 days, for clinical signs and symptoms of COVID-19 (coughing and/or nose cold and/or fever) and (i) in case of suspected fever (≥38°C) measuring temperature (rectal or via the ear), (ii) call GGD immediately for appraisal and diagnostics

The GGD should test 'other close contacts' asap if they present symptoms of SARS-COV-2 infection. Pending test results, they stay strictly at home and make an overview of their own contacts from 2 days prior to the symptoms.

Telephone call from the GGD around day 7 (half-way) and day 14 (end) of the monitoring period, to follow up measures and discuss symptoms.

People working in the vital sector / crucial professions also stay at home. An exception can be made for these groups in consultation with the GGD and the company physician and only if they are asymptomatic. For care workers outside the hospital: see Testing policy and deployment of care workers.

If a contact 14 days after the last moment of contact with a COVID-19 patient has remained complaint-free, no infection has occurred and the contacts can re-join society just like other citizens.

3. **Other contacts (category 3):** The GGD ensures that contacts are informed about the determination of COVID-19 in a person in their environment.

The contacts are advised:

- good cough and hand hygiene;
- take general measures to prevent COVID-19 (social distancing);
- be alert during the 14 days after the last contact for symptoms of infection, and
- in case of suspected fever (≥ 38.0ºC), measure the temperature (rectal or through the ear)
- call the GGD directly for assessment and use diagnostics;
- to stay at home at the moment of symptoms.

The GGD ensures that contacts are tested for SARS-CoV-2 as soon as possible if symptoms fit COVID-19.

In anticipation of the test results, they stay strictly at home and make an overview of their own contacts from 2 days prior to the symptoms.

<u>Quarantine strategies for contacts of specific groups</u>:

1. **For contacts in child care and primary education:**

- If an adult or pupil in primary education or child care is diagnosed with COVID-19, colleagues and peers are informed in accordance with policy category 3 (other (not close) contacts), and are tested in case of symptoms.
- Exceptions are intensive contacts between children and adults, such as during the care of very young children at a children's centre or lowest groups in primary education. In these cases, the child and the adult are considered to be category 2 contacts (other close contacts).
- Adult category 2 contacts in childcare and primary education are in principle not allowed to work.
- Children designated as category 2 contacts in childcare and primary education are in principle allowed to go to a childcare centre or primary school, provided they have no complaints

2. **Health care practitioners <u>outside</u> hospitals (different sectors)**

Suspected health care practitioner with symptoms:

- Everyone should stay home when having symptoms of COVID

- Health care practitioners and housemates should let them test immediately when having symptoms
- The symptomatic person stays home until the test results are available. If the person has fever / dyspnoea, the housemates should stay also home until the results are known.

Test negative: health care practitioner with mild symptoms and NO fever can work again.

Test positive: source and contact tracing GGD. Index and housemates stay home until 2 weeks after last contact at home. Index stays at home at least 7 days after the start of the symptoms (or test) AND 48h fever free (<38°C without t° control medication) AND 24h symptom free.

Asymptomatic health care practitioner (different scenarios):

- Housemate COVID 19 positive: stay home until 14 days after last contact (exceptionally the health care practitioner may work in communication with the GGD or company doctor, with the use of type II mask and gloves.
- Close contact COVID 19 positive: health care practitioner may work (till 14 days after last contact, the health care practitioner should use mask of type II and gloves)
- Housemate with respiratory complaints and fever / dyspnoea: health care practitioner may work (till test result is known, the health care practitioner should use mask of type II and gloves)

3. Foreign travellers in the Netherlands

If foreign travellers staying in the Netherlands test positive for COVID-19, the Dutch guidelines are used.

- The GGD of the region where the traveller is staying carries out the contact test in the Netherlands.
- If the index was also abroad during the infectious period, the GGD informs the Centre of Infectious Diseases (LCI) (https://cib.healthandsafety.nl/).
- Foreign travellers in home isolation or quarantine are not allowed to travel, not even to their country of origin. If this is nevertheless necessary, the Centre of Infectious Diseases will be consulted. If a tourist leaves the Netherlands without permission, the GGD will inform the LCI.(more info https://cib.healthandsafety.nl/)

4. **Aircraft Contact** Policy

Contact research of aircraft contacts is started:

1) if the index has been on board of an aircraft during the infectious period

The following aircraft contacts are defined as 'other close contact' (category 2):

- Passengers seated within 2 seats away from the front, back and side of the index (max 24 contacts), where the aisle is considered as a row of seats and aircraft compartments/sections as a boundary. (see also www.seatguru.com)
- Crew members who have had intensive contact with the index (e.g. because extra care has been provided).

If the index is a passenger, the data of the index will be transmitted to the GGD of the airport of arrival via secure mail connection.

2) If a crew member was contagious:

The following aircraft contacts are defined as 'other close contact' (category 2):

- passengers with whom this crew member had intensive contact (e.g. because extra care was provided)
- directly cooperating colleagues who had > 15 min of continuous contact at a distance < 1.5 m. In practice, these will often be the crew members who worked in the same compartment or section.
- Other crew members are considered to have had other non-high level contact if they have had non-intensive contact with the index (category 3)

If the index is a crew member who has flown during the contagious period, the contact tracing shall be coordinated with the arrival airport GGD. (more info https://cib.healthandsafety.nl/)

Monitoring of source and contact tracing:

To monitor the effects of source and contact tracing the transfer of daily information from the electronic patient file (checkbox) to the National Institute of Public Health and the Environment is done and used already at the beginning of the pandemics. In the electronic patient file the following data is reported:

- personality characteristics (gender, year of birth, postal code);
- link to index (Osiris number) or situation;
- contact category;
- first and last day of exposure;
- monitoring period;
- call contacts during monitoring period;
- occurrence of complaints including first day of illness and type of complaints;
- collected diagnostics;
- GGD region.

Regular evaluation will take place to adjust policy where necessary and possible.

6.4.1 Isolation strategies

The criteria for discharging patients from isolation i.e. discontinuing transmission-based precautions, differ by country (Table 8). Often a difference is indicated for severe cases who have been admitted to hospital (minimum 14 days) versus mild cases at home (7 to 10 days). Because of the large discrepancies between countries we consulted the guidance from WHO and ECDC and compared these with the countries.

When testing capacity is sufficient, WHO stipulates that countries can choose to continue to use a laboratory testing algorithm as part of the release criteria in (a subset of) infected individuals if their risk assessment gives reason to do so. Without retesting, a distinction is made between symptomatic and asymptomatic patients (see Table 7). Fever has to be assessed when the patient is no longer using antipyretics. It has also been noted that respiratory symptoms may linger on in the form of a post viral cough beyond the period of infectivity. WHO states that further research is needed to clarify this.

Examples explaining the WHO rule are: if a patient had symptoms for two days, then the patient could be released from isolation after 10 days + 3 = 13 days from date of symptom onset; for a patient with symptoms for 14 days, the patient can be released (14 days + 3 days =) 17 days after the date of symptom onset; for a patient with symptoms for 30 days, the patient can be released (30+3=) 33 days after symptom onset).

Table 7 – WHO and ECDC guidance on isolation strategy

	Criteria for discharging patients from isolation
WHO June 17th 2020 https://www.who.int/news-room/commentaries/detail/criteria-for-releasing-covid-19-patients-from-isolation	Regardless of isolation location or disease severity. 1. With retesting: if two PCR tests with at least 24 hours apart are negative, the patient can be released. 2. Without retesting: ○ For symptomatic patients: 10 days after symptom onset, plus at least 3 additional days without symptoms (including without fever and without respiratory symptoms) ○ For asymptomatic cases: 10 days after positive test
ECDC April 8th **https://www.ecdc.europa.eu/en/publications-data/covid-19-guidance-discharge-and-ending-isolation**	The latest advice was in the context of discharging patients from hospitals to free beds as soon as possible during the peak of the epidemic. Testing capacity was similarly stretched. Hospitalised patients: 1. Conditions for all: ○ two negative RT-PCR tests at 24 hours interval at least eight days after onset of symptoms OR ○ discharged based on clinical criteria AND self-isolate at home or in a safe place until resolution of fever for at least three days and clinical improvement of other symptoms AND until eight days after the onset of symptoms for mild cases or for 14 days (severe cases) if these criteria have not been fulfilled in hospital. Follow-up visits, or monitoring via phone or other electronic device can be considered. These patients should be prioritised for testing 2. Discharged to long-term care facility, prison, children with special needs etc.; to a single room until eight days after the onset of symptoms AND resolution of fever for at least for three days AND clinical improvement 3. Immunocompromised patients: Self-isolation until 14 days after symptom onset AND resolution of fever for at least three days AND clinical improvement of symptoms other than fever. Mild or probable cases at home: 1. All: self-isolation eight days after onset symptoms AND resolution of fever AND clinical improvement of other symptoms for at least for three days 2. Critical workers (e.g. healthcare workers, law enforcement, firefighters etc.); resolution of fever three days AND after eight days from the onset of symptoms

	have passed. Return to work using a surgical mask until 14 days after the onset of symptoms. If testing capacity allows, this is a priority group for testing during the pandemic

For confirmed cases, the isolation is performed at home in all countries but in France and Spain there is the possibility to go or to be referred to an **isolation structure** (hostels, detention centres).

It should also be noted that in France, voluntary isolation of populations at risk is promoted, with the development of aid services for these populations.

Table 8 – Isolation strategy by country

	WHO	Belgium	Denmark	France	Germany	Italy	Spain	The Netherlands
Mandatory isolation	-	No	No	Yes	Yes	Yes	?	?
Isolation days minimum	10*	7	not specified	seems 14 days**	14	not specified	10	7
Lift restriction if no more symptoms (after isolation days minimum)	Yes, wait 3 days	Yes	No, wait 2 days	No, wait 2 days	No, wait 2 days	Yes, and PCR twice negative	No, wait 3 days	No, wait 1 day, and 2 days after fever
Lift restriction Health Care Personnel								
-days after symptom onset		7	-	seems min 14*		-	min 10	
-days without fever		3	-	-		-		
-days without symptoms		-	2	2		-	3	
-PCR negative before going back to work		No	Yes, repeat 2nd time before working with high risk	No information found		Yes, twice negative 24 hours apart	Yes	

**When PCR test is available: if two PCR tests with at least 24 hours apart are negative, the patient can be released irrespective of time since symptoms; ** In the guideline, only two days of symptoms free is mentioned but in the incapacity for work certificate example, a minimum period of 14 days is mentioned.*

6.4.2 Quarantine strategies

Quarantine at home is applied in all countries for a duration of 14 days, from the last day of contact. In Germany there are some slight differences by region. In Belgium, when a second test is negative, the quarantine is shortened to a minimum of 10 days. In France, contacts at risk with symptoms are treated as confirmed cases even if the test is negative and must be isolated (min 14 days and at least 2 days symptom free) and close contacts without symptoms must remain in quarantine for 7 additional days after a negative test result (performed 7 days after the last risk contact) but are authorised to go outside for basic needs and following strictly barrier measures. In Denmark, asymptomatic contacts are allowed to go out 7 days after taking a negative test. Although Spain does advice not to test asymptomatic contact persons, a consideration can be made to test carers of high risk persons. In Belgium, Denmark, France and Germany where close contacts are tested, quarantine turns into isolation when a test is positive.

Quarantine is also currently imposed when changing from a higher endemic to a lower endemic area (people arriving from Lisbon, Llerida, and A Marina in Belgium) or when going to a more vulnerable area (e.g. all persons going to an overseas area in France). In France, symptomatic travellers identified during border health checks are quarantined, regardless of their nationality.

6.4.3 Monitoring of compliance

Even if isolation and quarantine are **mandatory**, the non-compliance does not always lead to consequences. In Italy, for example, fines are imposed (the police has a list of persons in isolation). For France and Belgium, while fines were given during the lock-down in the event of non-compliance (and increased in the event of recidivism), the situation is less clear now. Nevertheless, a close monitoring is performed.

Indeed, in France and Italy, a monitoring of compliance is done by the regional health authorities, which organise an active and regular telephone follow-up of isolated patients and contacts in quarantine (1-2x per day in France) to ensure compliance with the isolation/quarantine instructions and to help with difficulties of daily living by giving social support if needed.

In Germany, a close contact of a confirmed case has to report daily to the contact tracer about his health status (body temperature twice a day and symptoms), general activities and contacts with other people. In the Netherlands, the GGD is allowed to contact you to ask for your health status.

6.5 Outbreak detection and control strategies

6.5.1 Surveillance systems

Countries use national and regional general surveillance activities to follow up new cases and identify outbreaks. Next to the indicators, monitoring the evolution of the epidemic, several indicators are able to monitor the identification of clusters. For example date and municipality or province, context of cluster (company, school, nursing home, etc.) (see the section “Early case detection methods” in each country for details).

In Denmark, a ‘signal group’ under the leadership of the Statens Serum Institut continuously assesses the incidence of local spread of infection, with the aim of being able to swiftly initiate preventive measures if there is evidence in the surveillance of the spread of infection via a cluster or an outbreak. If the group assesses that in an area there is a spread of infection, that cannot be immediately explained by a local outbreak at a particular institution or the like, the Danish Agency for Patient Safety enters into a dialogue with the municipality and their infection hygienic unit for the purpose of initiating regular testing of health and care personnel in the area in question. Healthcare professionals should be tested every 7 days for 2 months or until the spread of infection in the area where the chains of infection are not covered.

In Denmark, a website with voluntary self-reporting of symptoms where voluntary citizens report influenza-like symptoms (https://influmeter.dk and COVIDmeter) has been started.

Testing characteristics in collectivities by country is discussed below and in Table 9 (see also the section “Early case detection methods” in each country for details).

6.5.2 Systematic testing in nursing homes and high risk groups

The French strategy to prevent a second wave (gradual and low-noise resumption of the epidemic - scenario 3) advises to proactively inform precarious populations (e.g. in hosting structure) and actively invite them for testing. This is done in collaboration with associations specialised in precarious populations with the help of interpreters. Advice for nursing homes when one positive case is detected (also scenario 3 of the epidemic) in France, is weekly testing of staff working and testing of all residents. Currently, in the same homes, a test is proposed to new residents or staff, people returning from leaves, or people with symptoms. In Denmark, continuous testing of health care personnel in general practice, hospitals, and personnel in nursing homes etc. with no symptoms is being initiated. Residents of nursing homes and collectivities are NOT screened but fall under the contact tracing procedures.

6.5.3 Outbreak or cluster identification and investigation

An overview for the countries is presented in Table 10. A new outbreak, suspected of a cluster, is mostly defined as 2 or 3 or more epidemiologically linked cases. In collectivities one case is an outbreak. To identify outbreaks, France follows the density of incidence in their districts (cases/100 000 inhabitants/week) and the context in which clusters occur: companies, school, nursing homes for older people, precarious population, etc. France is currently investigating the creation of mobile contact tracing and isolation teams in the event of an outbreak or cluster.

In Denmark, the prevention of the spread of infection will be set up by regular staff testing (July 13th). In case of spread of infection with COVID-19 in a municipality or another geographically delimited area in Denmark, regular testing of health and care professionals in that area should be conducted.

Table 9 – Testing characteristics in collectivities by country

	Belgium	Denmark	France	Germany	Italy	Spain	The Netherlands
Precarious Population							
• Preventive screening	No	No	Advised: Proactive testing campaigns in case of gradual resumption of the epidemic (scenario 3)	No information found	No information found	No	Not yet
• Outbreak definition (number of confirmed or plausible cases)	2	No information found	3	No information found	No information found	3	
Schools							
• Preventive screening	No	No	No	No information found	No information found	No	No
• Outbreak definition (number of confirmed or plausible cases)	2		3			3	3
Nursing homes							
• Preventive screening	Yes: performed in first wave, new residents, returning after discharge from hospital.	No	Yes: new workers, new residents, after leaves. Advised: weekly testing of staff in case of gradual resumption of the epidemic (scenario 3)	No information found	No information found	No	Not yet, researched
• Outbreak definition (number of cases)	2 (1 positive and 1 suspected): screening of		3 (1 in case of scenario 3)	1 (confirmed)		1	

	the home can be initiated by the regional health authority		

Table 10 – Outbreak and early case detection strategies by country

	Nursing homes	Schools	Precarious populations
Belgium	• Any possible case is tested, especially residents and staff of collective residential facilities. • If allowed by a sufficient testing capacity: systematic screening of each new resident (with the possibility of a second test in case of negative result). • As of two cases: management by regional health authorities • From 10 cases, management by the Governor of the Province	No systematic screening. The Health Promotion Services of each school are in charge of contact tracing and of defining the modalities of eviction, in collaboration with the Federated entities. At the Federal level, high risk/close contacts concern the whole class for children < 6 years old and only neighbours for children ≥ 6 years old.	• Mobilisation to find accommodation solutions • No systematic screening but voluntary initiatives are happening
Denmark	Continuous testing of health care personnel and personnel in nursing homes etc. with no symptoms is being initiated. - July 13th – as described below: In case of spread of infection with COVID-19 in a municipality or another geographically delimited area, regular testing of health and care professionals in that area should be conducted. This is for the purpose of preventing the spread of infection If there is a spread of infection in an area that cannot be immediately explained by a local outbreak at a particular institution or the like, the Danish Agency for Patient Safety should enter into a dialogue with the municipality and their infection hygienic unit for the purpose of initiating regular testing of health and care personnel in the area in question. Healthcare professionals should be tested every 7 days for 2 months or until the spread	No screening as schools are closed. Guidelines for schools and child care facilities were published with the reopening of schools etc in April/May and revised prior to the new school year starting in August.	Since testing opportunities are now broadly available, no specific measures for early case detection methods in populations at increased risk of serious COVID-19 disease exist apart from the contact tracing strategies etc. included in the guidelines for nursing homes, home nurses, continuous testing of personnel etc.

	of infection in the area where the chains of infection are not covered.		
France	Currently: • New staff and new residents; • After returning from leave; • Staff and residents with symptoms Planned in case of gradual and low-noise resumption of the epidemic: • Weekly testing of the whole personnel (with a 7-days interval, including at least 2 days of symptom-free, for positive cases). • Systematic testing of all residents if a positive case is detected (among the staff or the residents).	• No systematic screening. • Regional health agencies are in charge of contact tracing-testing and of defining the modalities of eviction, i.e. close a class, an entire level or the whole school, in collaboration with the academic authorities.	Planned in case of gradual and low-noise resumption of the epidemic: • Proactive information and testing campaign (e.g. in hosting structure), in collaboration with associations specialized in precarious populations and other specific professionals such as interpreters.
Germany	• Serial testing can be performed on the staff and the residents if there is a confirmed case, with the objective to identify the chain of transmission and interrupt it at an early stage.		No information found
Italy	• In case of outbreaks in hospitals, long-term residential facilities and other residential facilities for old people, all related patients and health staff are tested.	• Schools are still closed and will reopen in September.	No specific information found
Spain	• The detection of a SINGLE case in these institutions will be considered an outbreak for the purposes of implementing action measures. • In addition to general actions, PCR will be carried out on close contacts or, depending on the circumstances, on all residents and workers of the centre, in the manner established by each Autonomous Region.	• Any cluster of 3 or more confirmed or probable cases with active infection in which an epidemiological link has been established is sent at start and weekly to CCAES and NEC according to a specific form. • There is a guide for Prevention and Control of Infection at Schools available, as they open in September 2020 and attendance of all students is guaranteed. It is based on two main goals: 1. Creation of healthy and safe school environment by (i) limiting contacts, (ii) personal prevention measures, (iii) cleaning and ventilation, (iv) case management.	• No specific policy reported in case of outbreak • Any cluster of 3 or more confirmed or probable cases with active infection in which an epidemiological link has been established is sent at start and weekly to CCAES and NEC according to a specific form. • Strategy for migrants arriving to the coasts is being implemented including systematic testing.

		2. Early detection of cases and appropriate management of them. Transversal actions: • Reorganisation of the school • Coordination and participation • Communication and health education • Equity	
The Netherlands	No policy in case of outbreak reported, only: • The GGD and institutions should pay attention at clustering of confirmed cases. • Asymptomatic testing could be useful in the future (research phase)	If the child's complaints are recognizably unrelated to a pre-existing disorder (such as hay fever or asthma), the child may attend school or children's centre. • Any child with newly developed rhinitis symptoms or a change in the pattern of symptoms can be tested at the request of the parents. • When an employee of a school or a child is reported to the GGD as confirmed COVID-19, contact tracing is started and symptomatic contacts between children and staff tested. • If in a group of a primary school 3 or more children or staff have complaints that fit COVID-19, it is considered a cluster/outbreak. ○ The GGD in cooperation with the management of the children's centre / elementary school, carries out source and contact research on the positive staff members and/or children. ○ Under the guidance of the IZB-doctor, the GGD in question starts an outbreak investigation to map out the situation at school. ○ The GGD advises the school on the provision of information to the parents. ○ Other staff members and children are registered whether they have complaints and whether they have been or can be tested. Depending on the context, only the group/class or several groups/classes are questioned.	No policy in case of outbreak reported, only: • The GGD and institutions should pay attention at clustering of confirmed cases. • Asymptomatic testing could be useful in the future in specific groups.

	○ In case of an outbreak with > 3 confirmed children/adults, consider further outbreak diagnostics (and/or also whole genome sequencing). ○ Policy for children's centres/schools can be tailored to the results of the outbreak investigation. ○ Consider also testing asymptomatic children and staff in case of a large outbreak. GGD's can consult with the LCI to make a choice.	

7 DISCUSSION AND CONCLUSIONS

The main objective of this fast review was to describe policies and implementations in a selection of countries and point out interesting practices during this COVID-19 epidemic either from the start, currently or planned for the immediate future. Evaluating the identified practices or collecting information about their key performance indicators, was not the objective of this study. Based on the experience of the investigated countries, key points can be highlighted and can thus serve as the basis of discussion for international researchers and public health authorities in general. The key points are generic and the 'theoretically' described strategies from countries are given as examples only. Each country can decide if the example would be appropriate for application depending on the stage of the epidemic in the country and the healthcare context and organisation. It is also possible that in some countries authorities are already working on or preparing (some of) the suggestions below.

7.1 Having a national testing and tracing plan adapted to the spread of the epidemic

Testing strategies adapted to the stage of epidemic will protect at risk populations and identify early cases and clusters and fore come further spread of COVID-19, using the available resources in an optimal way. All countries developed testing strategies to curb the epidemic. The following strategy[1] describes how to take different epidemiological scenarios into account while adapting testing strategies:

1. Epidemic under control, based on available indicators, with occurrence of localised clusters that can be controlled: testing - tracing - isolation as usual.
2. Existence of critical clusters, raising fears of a loss of control of the chains of contamination, and therefore of the control of the epidemic itself: strengthening of the testing - tracing - isolation within the perimeter of the cluster of asymptomatic people; active information campaign for people to get tested.
3. A gradual more difficult to identify low-noise resumption of the epidemic. Indicators deteriorate without the chain(s) of contamination being identified nor controlled. This scenario would require strict measures as well as the rapid activation of several prevention measures either on a regional scale if the indicators allow it or at the national level: systematic weekly testing of staff in nursing homes (and all residents once there is a positive case); health care professionals proactive informing and testing persons of precarious populations; specific protocol for high-density large metropolitan regions; a protocol on hospital preparedness, etc.
4. A loss of control of the epidemic that would require difficult decisions, i.e. a choice between generalised national lock-down, which minimises direct mortality, and other collective, economic and social objectives.

Key points for international researchers and public health authorities:

While countries define their (national) testing and tracing plan, an adaptation of these strategies according to the spread of the epidemic could be planned. This also implies having in place a central coordination, real-time data, analysis and communication of results which would allow identification of outbreaks and clusters in the community and high risk collectivities. The updates in the strategies are to be broadly communicated to the general population, health professionals and stakeholders.

[1] Based on the document https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf

7.2 An attention on stocks as well as on laboratory capacity and rapidity

Testing capacity has increased rapidly in all studied countries in the past months. Nevertheless, it is unclear if the daily capacity will be sufficient for a new infection peak and if reagents and testing material will be available in sufficient quantity, requiring a close monitoring of these aspects.

Several strategies have been implemented in the selected countries to improve testing capacity (see 6.1.3). The use of pooling of samples, the production of testing material locally, and the use of saliva have also been explored and launched. In the Netherlands, for example, the following possible solutions for shortage of sampling materials and extraction and PCR reagents are discussed:

- Pool the throat and nose swab from one patient at the laboratory and perform one PCR only (save PCR extraction and reagents). (Pooling at the laboratory level can also be considered on a larger scale e.g. preventive testing of health care staff in a nursing home or residents residing on one floor or section of a building).
- Use one tube of virus transport medium and combine the throat and nose swab from one patient at the sampling site.
- Use a classic cotton swabs (tear-off packaging or as dry cotton in 'tube') and cut to fit collection tube when shortage of the synthetic fiber swab with plastic applicator (e.g. Copan Nylon®). Never use swabs with a wooden or metal carrier (PCR inhibition leading to false negative or unreadable results).

Locally produced test material, such as swabs in Italy and Belgium or tests in Denmark, may allow anticipating shortages in the coming months. Belgium, through the University of Liège, also produced RNA extraction reagents and the accompanying plastics for use on the federal platform.

Key points for international researchers and public health authorities:

The monitoring and assessment of material availability for testing should be performed and the ongoing development process, validity and use of other tests such as rapid tests would ideally be investigated.

7.3 A rapid information system for improved surveillance and outbreak detection

The rapidity in which the test results are processed and transmitted to the patients and the local or national health authorities allows infected people to be alerted as soon as possible, isolate themselves, and for the health authorities to start the contact tracing.

In some countries, test results from laboratories are available in real-time in the “COVID-19 database” and results are (or should be) communicated within 24 hours to the patients and to the national surveillance system. Indicators on the number of contacts and on the speed of the whole process, including contact tracing, are also monitored in some countries (e.g. in Italy). Outbreak detections and cluster investigations in specific settings / collectivities are also monitored (e.g. in France, Germany, and Belgium) and the determination of critical thresholds are for example under discussion in France (e.g. 50 cases per 100 000 population).

Key points for international researchers and public health authorities:

The rapidity of the health information system should ideally result in providing the result within 24 hours to the patient and to the national surveillance system. Indicators to monitor the identification of outbreaks and clusters or to monitor the performance of the process (e.g. for the contact tracing process) should also be considered.

7.4 A focus on monitoring of nursing homes or specific populations

A high state of alert is needed for all closed collectivities, especially in nursing and care homes for older people. Infection and prevention measures are the best method to contain the spread of the virus within these closed facilities. In case of an outbreak, testing can be intensified to contain it. Regular testing of healthcare workers can also be performed, as initiated in Denmark, but an evaluation of the resources available needs to be considered. A plan for specific populations, such as precarious populations, could also be elaborated (such as in France).

Key points for international researchers and public health authorities:

The following actions were set up in some of the investigated countries and could be considered:

- *Systematic testing of staff in homes for older people in case of resurgence of the epidemic;*
- *An action plan for precarious population, especially in case of resurgence of the epidemic;*
- *Systematic testing of health care workers in specific municipalities with ongoing infection spread when no transmission chain can be identified.*

7.5 An application to improve contact tracing?

Currently, most of the applications developed (or planned to be developed) in the selected countries had the following characteristics: voluntary use, anonymous data use, the compliance with the general data protection regulation, no geolocalisation, and Bluetooth technology. The countries that have an application currently in use have nevertheless so far not provided any evidence of the performance or capacity to contain transmission. Some countries have recommended an evaluation or evaluation trials are ongoing.

Key point for international researchers and public health authorities:

While planning the implementation of an application to help in the contact tracing, compliance with the general data protection regulation, evaluation of performance indicators, and international compatibility within Europe should also be considered.

7.6 Measures for recalcitrant people and an increased monitoring

Because hygiene measures, isolation and quarantine may be detrimental (e.g. for precarious populations, self-employed, informal caregivers, etc.), ignoring or disobeying the rules is not uncommon. Countries have reflected on mechanisms to improve the population compliance and participation including for the contact tracing:

Key points for international researchers and public health authorities:

Actions identified in the selected countries that may have potential and can be studied are the following:

- *The possibility to go to an isolation structure (e.g. hostels, detention centres) to support the socially vulnerable.*
- *The provision of social support to reduce the impact of isolation (see the measures developed to reduce the impact of isolation for precarious populations in France).*
- *The organisation of close monitoring and support of people in isolation or quarantine by the regional health agencies. For people in quarantine, this will also benefit the faster identification of contacts developing symptoms.*
- *The promotion of the voluntary use of the (future) application(s) via information campaigns specifying their confidential character: no geolocalisation and no identification (to reach people that are reluctant with the traditional contact-tracing system).*
- *The permission for individuals to contact the tracing centre directly. This 'nudging' strategy puts the control by the persons themselves.*
- *The follow-up of population symptoms through voluntary self-reporting of influenza-like symptoms via an application.*

7.7 Study limitations

The timeframe of the study was very short. An in-depth analysis was therefore not possible and some information could not be found within the time limits. Additionally, not all information could be validated by other countries within this timeframe (France and Germany are not validated) or was only partially validated. Because of the limited timeframe, only a limited number of countries could be investigated.

All the information included in this report was found available online through official websites and/or media reporting. If additional internal information is available at a country level but not published online, we had no access and it was therefore not reported in this document.

The situation is evolving and changing rapidly. The description corresponds to the situation at the time of writing this report, between June 8th and July 15th, depending on the country, and may no longer be up to date.

The report is based on the experience of other countries as described online and did not aim to evaluate and report the effectiveness and cost-effectiveness of these practices. Although, the key points highlighted in this report are theoretic and experience-based rather than evidence-based, the researchers think they are worth to be considered. Nevertheless, the health care context and specific situation of every country is different. It is up to the health authorities of every country to decide on the most appropriate measures in their country.

One important factor that was not part of the scope of the project, was the evaluation of capacity in responding to the epidemic and the human resource and expertise constraints. As reported by the WHO in 2017 (WHO mission report Belgium), Belgium for example continues to face challenges in preparing and retaining trained health personnel specialised in infectious diseases, epidemiology and public health at the level of the different health authorities. A lack of human resources may explain the difficulties faced by health authorities in some countries implementing national and international best practices. This topic could be part of future research.

7.8 Conclusion

Several interesting practices from the selected countries were highlighted in the previous sections. Nevertheless, the costs incurred by some of these practices can be high. Their implementation will therefore be based on the resources and human capacity available. Because their (cost)-effectiveness has not been and could not be assessed, no prioritisation can be done.

APPENDIX

1 RESULTS FOR BELGIUM

1.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/sites/default/files/Covid19/20200608_Chronology_Case%20definition.pdf https://covid-19.sciensano.be/sites/default/files/Covid19/Testing_Advice_20200324_Testing%20priority_uitbreiding.pdf https://covid-19.sciensano.be/sites/default/files/Covid19/Testing_Advice_20200420_Testing%20strategy.pdf	The testing strategy evolved according to the case definition from the start of the epidemic (January 18th 2020).The chronology of testing strategy was as follows: • 18/01: (Symptomatic) travellers returning from Wuhan. 1 • 3/02-10/03: Symptomatic cases with travel history. Progressive extension of travel criteria adapted to the epidemiological data available by country. No testing of contacts (capacity not sufficient) from 5/3 onwards (too many). • 11/03: Circulation confirmed in Belgium, removal of travel history as criteria for testing. Testing for symptomatic cases (respiratory tract infection) who need hospitalisation and for HCW (all, also mild disease). Insufficient PPE to allow sample taking by any GP and not possible to send all suspected cases to the emergency wards anymore. • 13/03: Testing capacity insufficient because circulation of a lot of respiratory pathogens. Inclusion of fever as testing criteria for HCW with respiratory tract infection. • 04/04: Increase in daily testing capacity. First priority group added are symptomatic cases (including mild) in collectivities, until 5 (then circulation of virus is confirmed, all symptomatic cases confirmed as COVID). • 09/04: Extensive testing in nursing homes (symptomatic and asymptomatic) through federal platform. • 16/04: Further increase capacity: fever removed as testing criteria for HCW. • 22/04: Still sufficient capacity, testing expanded to all new residents in collectivities (even asymptomatic) and new hospitalisations (for non-COVID) because not enough for all symptomatics while systematic testing in nursing homes not yet finished. • 04/05: Testing all suspected cases (enlarged case definition). Start contact tracing. Testing of contacts at end quarantine for those working with persons at risk of developing a severe manifestation of the disease. If testing capacity still enough: further testing of new persons admitted in collectivities/hospitals As of March 23th, the strategies for testing are described on the website of Sciensano.
5e Nota aan Eerste Minister en Kern ter voorbereiding van de Nationale Veiligheidsraad dd. **03/6/2020** GEES	The Group of Experts on the Exit Strategy (GEES) listed measures to be included in the action plan for the exit of the first wave and prevention of a second wave. The following aspects should be included: • **First line of defence**: individual testing and contact tracing: Infected people need to be identified and tested, the persons with whom they have been in contact identified and when needed isolated.

https://www.health.belgium.be/nl/news/interministeriele-conferentie-volksgezondheid-van-20-mei-2020	• **Second line of defence**. Monitoring of the evolution nationwide of the virus in real-time with the aim to identify cluster outbreaks at the geographical, household, professional, collectivity, school level or others. Based on this a quick coordinated (federal, community/region, provincial and municipal authorities) response with local health resources should take place. • Activities and sectors can re-open only when measures of contact limitation, physical distancing and hygiene are described in **protocols**, approved by the relevant authorities and followed-up over time. Certain activities that are liable to 'super spreading' remain on a 'closed list'. This list is re-evaluated with a positive evolution of the epidemic. The Inter-Ministerial Conference (IMC) (May 20th) for Health has taken steps or is on the way to ensure • The right legal context for required data gathering and management; • Overall set-up and responsibilities of virus resurgence management with details for each level; • Sufficient resources at each level to deal with 500-1000 new cases per day and 10-20% of these requiring cluster investigation and additional testing in the context of the cluster; • Simplified guidelines in case of outbreak in collectivities; • More elaborate guidelines for local cells and the first line; • Strengthen the data teams of Sciensano; • Broaden the data collection and registration for effective virus resurgence management; • Necessary budgets to enable the above at the various decision levels.
https://www.health.belgium.be/nl/news/interministeriele-conferentie-volksgezondheid-van-1-juli-2020	The Inter-Ministerial Conference (IMC) (July 1st) discussed the following: • contact tracing application: Ministers confirmed their joint commitment to this dossier. • The dossier comprises several components - technology, regulatory basis and communication - which will be developed in a coordinated manner. With regard to the technological part, there is agreement on the choice of DP-3T / bluetooth. A specific timeline has already been agreed by the IMC, with an award to be made in July. Smals will launch the contract, but does not play a role in the development or audit of the contact follow-up application. • Sciensano provides surveillance based on multiple data sources. Health inspection of the regional authorities plan surveillance on the basis of signals from Sciensano and by means of protocols that they agree with non-structural collectivities (such as a youth movement camp) or other settings (e.g. a company). These protocols must guarantee rapid detection and action. Further fine-tuning will take place in the coming days, including with regard to the emergency planning systems coordinated by the National Crisis Centre. • Resurgence measurements: federal government preparation of the hospital sector, medicines and medical devices and protective equipment. The Flemish authorities and the Walloon Region explained the preparedness plans established within their respective governments.

1.2 Testing strategy

1.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
July 16th 2020 https://covid-19.sciensano.be/nl/covid-19-gevalsdefinitie-en-testing and https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_contact_NL.pdf and https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_children_NL.pdf	Who needs to be **tested with a molecular test** (in order of priority)? 1. Any person who meets the definition of a **possible case* (see below)** of COVID-19, with particular focus on: • Care personnel (persons providing assistance or care) • Occupants and staff of collective residential facilities (e.g. residential care centre, accommodation centre for people with disabilities, reception centres, prisons...). As of two cases in the same facility, the responsible Federated entity will further decide on the most appropriate further testing strategy, adapted to the local conditions. 2. **High-risk contacts** of a case of COVID-19 (If the contact person underwent an initial test within 7 days of exposure, the doctor may in consultation with the patient deciding to perform a second PCR test. This second test must be carried out for at least 5 days after the first PCR test and at the earliest 9 days after the last risk contact). • A person who has cumulative contact of at least 15 minutes within a distance of <1.5 m ("face to face") in a conversation, for example. • A person who was in the same room/closed environment for more than 15 minutes with a COVID-19 patient, where a distance of 1.5 m was not always respected and/or where objects were shared. This includes roommates, all classmates for children 3 to 6 years (kindergarten), children from the same group living in a residential collectivity, possibly neighbours in a classroom with children ≥ 6 years old or at work (except when plexiglas divisions were used). • A person who has had direct physical contact with a COVID-19 patient. • A person who has been in direct physical contact with excretions or body fluids of a COVID-19 patient, such as during kissing and mouth-to-mouth ventilation, or contact with vomit, bowel movements, mucus, etc. • A caregiver in contact with a COVID-19 patient during care or medical treatment or examination within a distance of 1.5 m, without the use of personal protective equipment (according to protocol/activity). • A person who has travelled with a COVID-19 patient for more than 15 minutes, in any means of transport, seated within two seats (in any direction) from the patient. In an aircraft also crew members serving in the section of the plane where the case was. If the severity of the symptoms or the displacement of the patient on the aircraft indicates a potentially greater exposure, passengers who were in the same compartment or all passengers on the aircraft are considered to be high risk contacts (assessment by the Infectious Disease Control Department). • A person returning from a country or region with a high transmission risk: red or orange zone If the capacity allows it, the following persons can also be tested: 3. Any person requiring hospitalisation, including an initial admission in the day hospital, according to the rules drawn up by each hospital, taking into account local context and the specific nature of the concerns. If the test proves negative, the test can be repeated once depending on the clinical need, as a negative result is also possible in a person who is already infected but still in the incubation period. 1. Each new resident of a collective residential facility (e.g. residential care centre, accommodation centre for people with disabilities, reception centres, prison...). If the test proves negative, the test may be repeated once depending on the clinical outcome to cover the incubation period.

The following definition shall be used as a guideline, on the one hand, for persons who may have COVID-19 identification, so that a PCR test can be carried out, and on the other hand to enable monitoring of the disease.

***A possible case** of COVID-19 is a person with

- at least one of the following main acutely occurring symptoms, without an obvious cause: cough; dyspnoea; thoracic pain; acute anosmia or dysgeusion;

OR

- at least two(1) of the following symptoms, with no other apparent cause: fever; muscle pain; fatigue; rhinitis; sore throat; headache; anorexia; watery diarrhoea(2); acute confusion(2), sudden fall(2)

OR

- worsening of chronic respiratory symptoms (COPD, asthma, chronic cough...), with no other apparent cause.

A **radiologically confirmed case** is a person whose PCR for COVID-19 is negative, but who is diagnosed with COVID-19 on the basis of a suggestive clinical presentation AND a compatible CT thorax.

A **confirmed case** is defined as a person where the diagnosis of COVID-19 infection was confirmed by a molecular test(3).

(1) In children, only fever with no apparent cause is sufficient to consider the diagnosis of COVID-19 during this epidemic.

(2) These symptoms are more common in the elderly, where an acute infection can express itself atypically.

(3) Molecular test: PCR or antigen rapid test. A PCR test should be performed additionally when a negative result was obtained with an antigen rapid test (Rapid Antigen Test).

https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Lab_form_NL.pdf
June 11th 2020



MINIMALE GEGEVENS MET OOG OP RIZIV VERGOEDING

CONTACTGEGEVENS

Naam laboratorium of zorginstelling (indien van toepassing): .....

Naam + RIZIVnr aanvragende arts: .....

Adres arts: .....

Tel: ..... Fax: .....

Emailadres: .....

Rapportering via: ❑ Fax ❑ Email ❑ eHealthbox

PATIENTGEGEVENS OF STICKER

Naam: .....

Geslacht: ❑ M ❑ V

Geboortedatum: .....

Rijksregister nr: .....

Straat + nr: .....

Postcode en woonplaats: .....

AANGEVRAAGDE TEST

PCR SARS/COVID-19 : *2621* ❑ Bovenste luchtwegen
2622 ❑ Aspiraat
2620 ❑ BAL

Patiëntengegevens aanbrengen op de tube!

INDICATIE AANGEVRAAGDE TEST

❑ Mogelijk geval COVID-19*:
- ❑ Ziekenhuisopname/dagziekenhuis
- ❑ Zorgpersoneel (personen die hulp of zorgen toedienen)
- ❑ Bewoner residentiële collectiviteit
- ❑ Ambulant

❑ Hoog-risico contact met bevestigd COVID-19 geval

❑ Screening ziekenhuisopname en dagziekenhuis

❑ Nieuwe instroom residentiële collectiviteit

❑ Betreft staal ter confirmatie (in het kader van validatie)

* zie website Sciensano voor gevalsdefinitie

GEGEVENS OVER HET STAAL

Identificatienummer: .....

Datum afname staal: .....

EXTRA KLINISCHE GEGEVENS

Indien hospitalisatie – eenheid: ❑ infectieziekten ❑ andere
❑ intensieve zorgen ❑ spoedgevallen ❑ pediatrie

Indien patiënt binnen een risicogroep valt:

Immunosuppressie, maligniteit	❑ ja	❑ nee
Chronisch ernstig long/hart/nier-lijden	❑ ja	❑ nee
Cardiovasculair, AHT, diabetes	❑ ja	❑ nee

Indien patiënt zorgverlener is en symptomatisch:

❑ zorgpersoneel in ziekenhuis, specifieer: .....

❑ zorgpersoneel in instelling, naam instelling: .....

❑ anders, werkt als .....

Indien patiënt bewoner van collectiviteit is: naam instelling .....

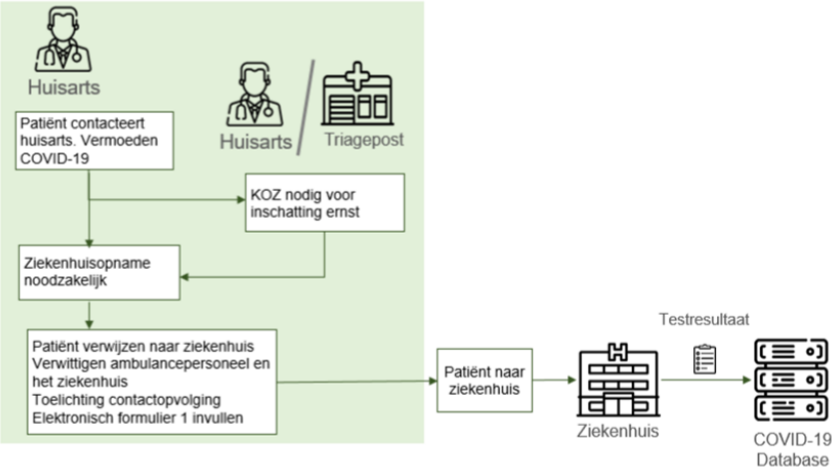
Indien symptomen:

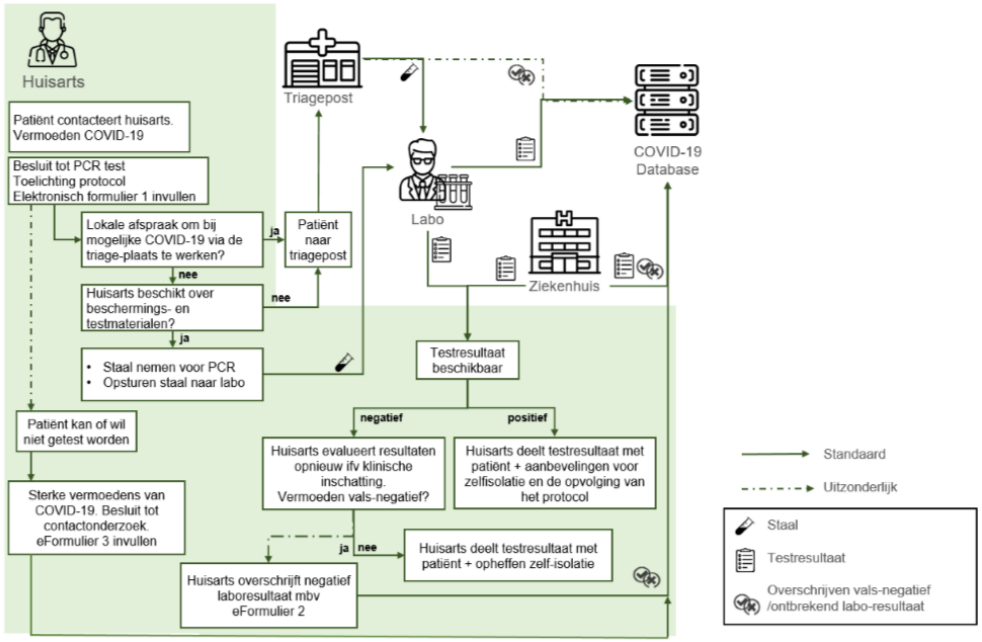
Datum begin symptomen:.....

RX / CT scan abnormaal	❑ ja	❑ nee	❑ nvt
Pneumonie	❑ ja	❑ nee	
Koorts	❑ ja	❑ nee	
Kortademig	❑ ja	❑ nee	
Hoest	❑ ja	❑ nee	
Andere respiratoire.....	❑ ja	❑ nee	
Conjunctivitis	❑ ja	❑ nee	
Hoofdpijn	❑ ja	❑ nee	
Spierpijn	❑ ja	❑ nee	
Abdominale klachten	❑ ja	❑ nee	
Vermoeidheid	❑ ja	❑ nee	

Aanvraagformulier COVID-19_generisch_2020061111

1.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/sites/default/files/Covid19/d%C3%A9claration%20obligatoire%20et%20suivi%20des%20contacts.pdf 12 June 2020 NIHDI https://www.inami.fgov.be/fr/covid19/Pages/retribution-soutenir-postes-triage.aspx	• The GP is the first point of contact for all suspicious patients. All patients with symptoms must contact a GP, which will determine if a test should be performed (based on a telephone anamnesis). All possible cases (see the definition above) should be tested and identified via an electronic form (eForm "Notification and lab application in case of suspicion of SARS-CoV-2 infection"). • Either the GP performs the test himself (only if appropriate protective and testing equipment) or sends the patient to a triage centre (or "sampling centres"). • Sampling centres are specific sites organised by GPs, hospitals, municipalities, etc. and coordinated by the GPs circles. Since March 23rd 2020, these initiatives have received funding from the NIHDI, i.e. the same fee for all physicians working in these centres, a flat rate for nurses, paramedics and care coordinators (per half day) and a flat rate for administrative staff. Sampling in these centres can either be done by a physician or by a nurse. • On May 7th, the IMC decided that 120 sampling centres should remain operational (i.e. one sorting centre per 100,000 inhabitants) with each federated entity being responsible for ensuring an adequate distribution of centres on its territory. 

	B) Patiënt met milde of matige klachten 
25 May 2020 https://covid-19.sciensano.be/sites/default/files/Covid19/COVID19_procedure_sampling_FR.pdf	Two procedures are described: • A nasopharyngeal swab (in one nostril) • Oro-pharyngeal swab combined with a superficial nasal smear (of both nostrils) The nasopharyngeal swab is the preferred option but if no suitable material is available, the combined throat and superficial nasopharyngeal swab is also permitted.

1.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-gevalsdefinitie-en-testing_June_12th 2020 https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Case%20definition_Testing_NL.pdf	Who can be tested through **serology** (reimbursement conditions)? 1. Hospitalised patients who meet the definition of a possible case AND where the CT Thorax is suggestive for COVID-19 but the PCR test is negative. The serology is performed at least 7 days after the onset of symptoms. 2. Hospitalised or ambulatory patients who show a prolonged clinical picture suggestive of COVID-19, but whose PCR test is negative, or who could not be tested within the 7 days following the onset of COVID-19. The serology shall be carried out at least 14 days after the onset of the symptoms. 3. In the context of differential diagnosis in an atypical clinical presentation. The serology is performed at least 14 days after the onset of symptoms. 4. To examine the serological status of health care personnel and personnel in hospitals/services and other collectivities with a high risk of exposure to COVID-19 (COVID departments or rest homes) in the context of local risk management.
RIZIV/INAMI website	Determining antibodies in patients with a suspicion of a COVID-19 infection is not recognised as a primary diagnostic test in acute disease. The RIZIV/INAMI reimbursement includes the following target groups: • 366: care providers and personnel, working in hospitals, clinical laboratories or collectivities, with a high degree of infection (COVID-19 services, residential care centres or clinical laboratories) • 365: patients with an atypical clinical presentation, taken at least 14 days after the onset of symptoms under differential diagnosis • 364: patients with prolonged clinical picture suggestive of COVID-19 with negative PCR result or without PCR test within 7 days of onset of symptoms, taken at least 14 days after onset of symptoms • 363: hospitalised patients with a suggestive clinical picture for COVID-19 where there is a discrepancy between the molecular detection test and a CT scan, taken at least 7 days after the onset of symptoms The provision can be charged a maximum of 2 times per period of 6 months. Only serum is required for the determination. In order to comply with the requirements drawn up by the NIHDI, it is necessary to state explicitly within which target group and indication the patient falls. If the analysis is requested outside the indications, it will be charged to the patient at € 9,60.

1.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
Communication federal taskforce	Extra test capacity was created by the Federal Government in collaboration with Sciensano, the Federal Agency for Medicines and Health Products (FAMHP) and the National Reference Centre as an overflow mechanism to the classical clinical labs through a platform with biotech/pharma industries and two universities (KU Leuven and the University of Liège). At the peak of the first wave the laboratory test capacity was around 35 000 tests a day. Further upscaling the capacity, to 80 000 per day, is planned by October 2020. This will be done through incentives to upscale the installed base of the classical clinical laboratories in Belgium together with a government funded upscale of the installed base in a selection of 5 to 7 laboratory settings (combination of classical clinical laboratory together with a university / biopharma entity). Currently, mid-July, the capacity in Belgium is around 30 000 tests a day. In September 2020, the laboratory test capacity will be around 45.000. Belgium has invested in locally produced virus transport medium, 3D-printed collection swabs, assembling collection kits, filling of tubes in Belgium with inactivated transport medium, virus extraction reagents and associated plastics, The pooling of samples at the patient level (combination of the throat and nose swab from one patient at the sampling site in one tube) is performed and some labs use as an alternative a classic cotton swabs.
Sciensano 19th June 2020 Karin Rondia (May 2020) https://www.covid19healthsystem.org/countries/belgium/countrypage.aspx And Personal communication with the "Cliniques Universitaires de Bruxelles": Pr Frédéric Cotton ; And Sciensano (3 April 2020) https://www.sciensano.be/en/press-corner/veterinary-laboratories-sciensano-start-covid-19-tests	The PCR-testing capacity for COVID-19 was originally limited to one national reference lab (UZ Leuven). On February 21st, Sciensano did an inventory among other labs, to assess their preparedness: four labs answered to have currently at that moment the protocol for the COVID-PCR in place, whereas 19 labs answered to have concrete plans the implement the COVID-PCR soon (Sciensano, private communication). Rapidly, other clinical laboratories developed the technique on their own initiative in collaboration with the national reference laboratory, which led to a national network of clinical labs (mostly hospital labs, and some private non-hospital labs). The list of participating labs is updated daily (https://epidemio.wiv-isp.be/ID/Documents/Covid19/COVID-19_Diagnostic_Labs_FR.pdf). On June 19th, 90 laboratories were registered on this list. University research units also joined the effort by using an 'old' technique requiring less reagents but more workforce. At the beginning of April, veterinary laboratories of Sciensano and other pharmaceuticals and veterinary laboratories joined the efforts. A governmental working group (task force) was created mid-March 2020 to increase the testing capacity. This working group set up a parallel platform gathering some biotech/pharma industries and two universities (KU Leuven and the University of Liège). By the end of April, this platform was essentially devoted to a large campaign of testing in homes for older people and nursing homes, launched by the federal and federated entities. As of mid-May 2020, the samples from roughly 40 to 50% of the triage centres were analysed on the federal platform. At the beginning of April, veterinary laboratories of Sciensano and other pharmaceuticals and veterinary laboratories joined the efforts. The estimated daily capacity in the classical clinical labs was early July around 17 000 a day. The total estimated capacity on July 13th was 30 000 a day.

NRC information session – 25 June 2020	In preparation of the second wave, it should also be considered that Influenza- and RSV-testing will become more important during coming autumn and winter, as an alternative diagnosis for COVID-19-like symptoms, that make COVID-19-infection less likely (but can never completely exclude COVID-19). COVID-19 testing capacity during the season of other respiratory viruses, will highly depend on the epidemic of these other respiratory viruses.
GEES June 2th 2020	Measures have been taken to increase the capacity and organise testing in the laboratories. In case of a second wave, additional tests to broadly test potential new clusters should be foreseen, which could amount to ~1,6 mio € per week or ~€ 80 million on an annual basis for 5,000 tests per day. If the outbreak is more under control, the amount of tests could of course be significantly less and the total annual cost of the tests reduced proportionally.

1.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020	The GP is the central person in the whole process, given his unique relationship of trust with the patient. The treating physician must inform the patient when the lab result is known.
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020	The lab result is communicated to the physician (e.g. GMD patient) in the usual way if the physician/test/triage centre cooperates with a clinical lab. In the start-up of this first phase, many test/triage centres cooperated with the so-called **'federal platform'**. Since 16/4/2020, the results of the federal platform are sent to the CoZo hub through which all physicians with a therapeutic relation can search the results. Since 6/5/2020 results are also sent to the GMD holder (and since 25/5/2020 to the prescribing doctor if mentioned) through the **eHealthBox**. Hence, any physician with a therapeutic relationship with the patient can consult the results in the hub (**CoZo**, but also Flemish Hospital Network, Brussels Health Network and Réseau Santé Wallon).The prescribing physician that acts as the responsible of the triage centre or the coordinating physician of the nursing home/ residential collectivity can also find the results in the **CyberLab application** (real time results) (only when the triage centre/ nursing home/ residential collectivity sends the samples to the federal platform).

1.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020	The mandatory reporting of all possible cases to the health inspectorate of the Federated entity is done via the eForm. Additionally, General Practitioners must report the subsequent information: • Deaths caused by suspected or confirmed COVID-19 outside the hospital or residential care centre (see below) • Clusters of confirmed COVID-19 in collective facilities (prison, reception centre...), with the exception of nursing care centres that already have their own surveillance system. These clusters have to be notified immediately, so that the necessary control measures can be taken. All data are grouped in a COVID-19 database managed by Sciensano, responsible for the epidemiological follow-up of the COVID-19 epidemic in collaboration with its partners and other healthcare actors
Sciensano July 3th 2020 https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_FR_final.pdf	Belgian data on mortality encompass both the deaths of patients who were confirmed COVID-19 cases and those who were suspected of being infected. All settings are included: hospitals, residential care centres for elderly, other residential care centres and deaths occurring at home. As details, data comes from the following sources:

and https://epistat.wiv-isp.be/covid//	• Daily reports from the **hospitals** to Sciensano; deaths due to COVID-19 confirmed by a **laboratory test or chest CT scan and possible cases.** • Daily reports from **residential facilities** (e.g. nursing homes and homes for older people) to the federated entities: **confirmed and possible cases** of COVID-19. Possible deaths involve patients who have not undergone a diagnostic test for COVID-19, but who met the clinical criteria for COVID-19 as judged by the physician. This is the case for the vast majority of people who die outside the hospital. • Compulsory reporting of **general practitioners** to the federated entities (for deaths outside the hospital): **confirmed and possible cases** of COVID-19. Possible deaths involve patients who have not undergone a diagnostic test for COVID-19, but who met the clinical criteria for COVID-19 as judged by the physician. This is the case for the vast majority of people who die outside the hospital. Additionally, it should be noted that for people living in residential facilities: if they die in a hospital, they are included in hospital deaths. COVID-19 deaths are classified by region of death, as information on postal codes of residence is more difficult to obtain during the crisis.
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Seroprevalentie%20SARS-CoV-2%20in%20bloeddonoren_NL.pdf https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Seroprevalentie%20SARS-CoV-2%20bij%20gezondheidswerkers%20in%20Belgische%20ziekenhuizen_NL.pdf	• From two cases in a collective facility: management by federated entities • Registration of: ○ Confirmed cases by date, age, sex and province ○ Cumulative number of confirmed cases by municipality ○ Confirmed cases by date and municipality ○ Hospitalisations by date and province ○ Mortality by date, age, sex, and province ○ Total number of tests performed by date • Four indicators are used to monitor the evolution of the epidemic: confirmed cases, new hospitalisations of laboratory-confirmed COVID-19 cases, intensive care unit occupancy, and deaths (now presented with the 7-day moving average). • Seroprevalence on blood donation samples (n=1500) organised by the Red Cross and Sciensano • Measure and follow-up of prevalence, seroprevalence and seroconversion in healthcare workers (n=785) in Belgian hospitals (Sciensano and the Institute of Tropical Medicine) between March and September 2020

1.2.7 How is testing reimbursed

Date report(ed) and reference	Statement / definition
https://www.inami.fgov.be/fr/covid19/Pages/conditions-remboursement-tests-detection-coronavirus-pandemie-covid19.aspx	• PCR tests are fully reimbursed in the conditions described above (no co-payment and no extra-billings). The limit of maximum 2 PCR tests per patient was removed from April 22th. While previously, PCR tests could not be performed in they do not respected the conditions defined by Sciensano, they are authorized since 22 June 2020 but are at the patient's charge. • Antigen tests are reimbursed since April 1th (also with a limit of maximum 2 tests, which was removed on April 22th) and according to the procedures defined by Sciensano. Negative or doubtful results must be followed by a molecular test. No

	molecular tests can be performed in case of a positive result. These tests are fully reimbursed (no co-payment and no extra-billings). • Serologic tests are reimbursed since June 3th (maximum 2 tests per 6 months period) but only in the conditions described above (as complementary diagnosis or to assess the serologic status of health professionals working in care facilities with a high risk of transmission. In these conditions, these tests are fully reimbursed (no co-payment and no extra-billings). Otherwise, people have access to serologic tests but have to pay a maximum amount of €9.60.

1.3 Isolation strategies and monitoring of confirmed cases

1.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020	• Patients who meet the definition of a possible (suspected) case should contact their general practitioner by telephone. • All patients who meet the definition of a possible case (see indications for PCR testing) should be tested. • Individuals are most contagious right before and after symptoms appear. It is therefore important that patients contact their GP as soon as possible so that he or she can isolate the patient and his or her housemates if necessary.

1.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020	Asymptomatic care staff with a positive PCR test = confirmed case • The person must remain in home insulation until 7 days after the date of sampling. This means that if, for example, the result is only known after 2 days, the person only has to stay at home for 5 days. • The sampling must therefore be organised in such a way that the result is known as soon as possible. • During the (past) peak of the epidemic: If the availability of personnel is limited, the person can continue to work provided that he wears a mask and has enhanced hand hygiene, but only in a COVID-19 department or in a COHORTE team (healthcare providers that only provide home care for positive patients with COVID).
https://covid-19.sciensano.be/nl/covid-19-procedures procedure for GP for patient with suspected COVID-19 June 12th 2020 https://covid-19.sciensano.be/sites/default/files/Covid19/	1. SYMPTOMATIC TREATMENT • Paracetamol remains the first choice for treatment of pain and fever, the usual (contra-) indications for NSAIDs remain valid. Off-label use of medications or experimental treatment against COVID-19 is reserved for hospitalised patients. • Guidelines on the use of anticoagulants in COVID-19 patients have been drawn up by the Belgian Society of Thrombosis and Haemostasis and are available on the Sciensano website. • Guidelines are also available for the proper use of oxygen in COVID-19 patients following discharge from hospital or staying in residential care centres. 2. HOME ISOLATION:

COVID-19_procedure_hygiene_case%20%26household_NL.pdf	• Write a certificate for work incapacity for 7 days;
	• Explain to the patient that leaving the house is to be avoided;
	• Hand over the hygienic measures that can prevent the spread of the virus;
	• Ask the patient to contact you again by telephone:
	  ○ if symptoms worsen;
	  ○ if new symptoms occur;
	  ○ at the end of the period of inability to work. The isolation can be lifted if the patient no longer shows symptoms of COVID-19.

https://epidemio.wiv-isp.be/ID/Documents/Covid19/COVID19_procedure_contact_NL.pdf	• If the patient is a member of the healthcare personnel, the isolation will be lifted at the earliest 7 days after the onset of symptoms AND up to at least 3 days without fever AND with improvement of respiratory symptoms. When returning to work, a surgical mouth mask must still be worn at all times until the symptoms have completely disappeared AND at least 14 days after the onset of the symptoms. 3. CONTACT SUPPLEMENT • The patient's roommates should be placed in home isolation for 14 days. For this purpose, the general practitioner draws up a certificate of quarantine. More information about the contact measures can be found in the specific guideline. • The call centre is automatically informed of the test result and will contact the patient in order to map out his close contacts that then also be contacted.

1.4 Contact tracing strategy

1.4.1 Contact definition

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-gevalsdefinitie-en-testing#accordion6 June 12th 2020	A contact person is any person who has had contact with a confirmed COVID-19 case within the following timeframe: • **Contacts of symptomatic COVID-19 case**: within a period of **2 days before the onset of symptoms** until the end of the period of infectivity of the case (generally 7 days after the beginning of the symptoms, or longer if symptoms persist). • **Contacts of asymptomatic COVID-19 case**: a contact person defined as someone who has had contact with this person within a time span of 2 days before the sample was taken, until 7 days after. N.B. If a person was himself a confirmed case of COVID-19 (PCR+) in the previous 8 weeks, he is not considered as a contact.
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_contact_NL.pdf	**High risk contacts** or **close contacts** For the following persons the risk of infection is considered to be "high". If the contact person underwent an initial test within 7 days of exposure, the doctor may in consultation with the patient decide to perform a second PCR test. This second test must be carried out at least 5 days after the first PCR test and at the earliest 9 days after the last risk contact. At a second negative PCR result can

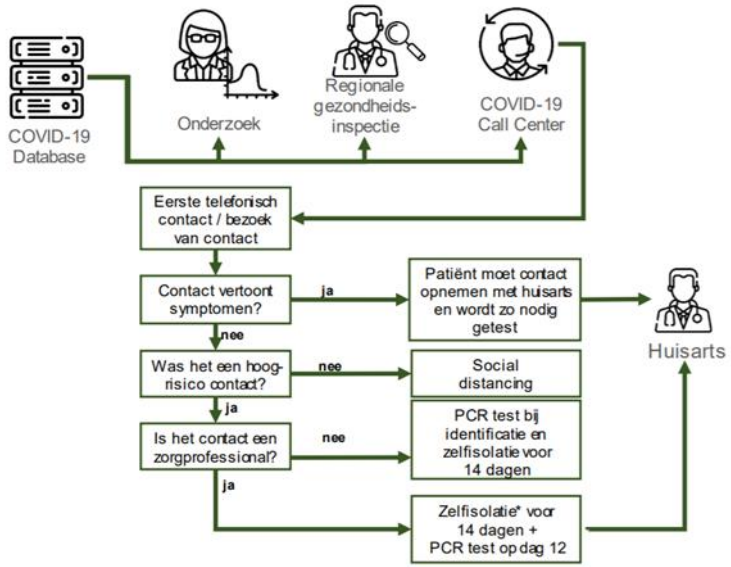
and https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_children_NL.pdf Version July 8th 2020	terminate the isolation (i.e. 10 days at the earliest after the last risk contact). The doctor informs the patient that the isolation may be stopped. These are further referred to in this Directive as 'close contacts': • A person who has cumulative contact of at least 15 minutes within a distance of <1.5 m ("face to face") in a conversation, for example. • A person who was in the same room/closed environment for more than 15 minutes with a COVID-19 patient, where a distance of 1.5 m was not always respected and/or where objects were shared. This includes roommates, all classmates for children 3 to 6 years (kindergarten), children from the same group living in a residential collectivity, possibly neighbours in a classroom with children ≥ 6 years old or at work (except when plexiglas divisions were used). • A person who has had direct physical contact with a COVID-19 patient. • A person who has been in direct physical contact with excretions or body fluids of a COVID-19 patient, such as during kissing and mouth-to-mouth ventilation, or contact with vomit, bowel movements, mucus, etc. • A caregiver in contact with a COVID-19 patient during care or medical treatment or examination within a distance of 1.5 m, without the use of personal protective equipment (according to protocol/activity). • A person who has travelled with a COVID-19 patient for more than 15 minutes, in any means of transport, seated within two seats (in any direction) from the patient. In an aircraft also crew members serving in the section of the plane where the case was. If the severity of the symptoms or the displacement of the patient on the aircraft indicates a potentially greater exposure, passengers who were in the same compartment or all passengers on the aircraft are considered to be high risk contacts (assessment by the Infectious Disease Control Department). **Low risk contacts** For the following persons, the risk of contamination is considered to be "low": • A person who has had contact with a COVID-19 patient for less than 15 minutes within a distance of 1.5 m ("face to face") (If there was a complete separation by a wall made of plexiglass, this does not fall under a face to face.) • A person who was in the same room/closed environment with a COVID-19 patient, but was less than 15 minutes within a distance of <1.5 m. This includes all children in a nursery (cribs), all classmates for children ≥ 6 years, people who work in the same room, or were sitting together in a waiting room. • A caregiver who has been in the same room as a COVID-19 patient without the use adequate protective clothing, but never within a distance of 1.5 m. Care providers to COVID-19 patients and laboratory staff handling samples of COVID-19 cases and using the recommended Personal Protective Equipment are not considered low-risk contacts. However, they are subject to a general recommendation to strict hand hygiene.

1.4.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_contact_FR.pdf Version June 12th 2020	Contact tracing procedures and testing of **Close contacts:** • In order to be able to detect cases between asymptomatic contacts, all close contacts are tested (High risk contacts), as defined above. Testing **low-risk contacts:** • A test to exclude infection in asymptomatic persons is not necessary. • When developing symptoms compatible with COVID-19 (see the "possible case" definition) the person becomes a possible case. Next, this person has to telephone the GP to find out where present himself to be tested for COVID-19 so that a sample can be taken.
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_GP_NL.pdf June 23th	• All possible cases must be reported so that a contact follow-up can be started. This compulsory notification is made via the **eForm 1** ("Lab application in case of suspicion of SARS-CoV-2 contamination") which was integrated in the electronic software packages for general practitioners, reporting the information to the health inspectorate of the federated entity. The eForm MUST be completed in order to start the contact follow-up. • A contact follow-up is then carried out by a central call centre (telephone calls to the patients in order to identify all their contacts). • The contact follow-up only takes place after confirmation of a case with a positive lab result. If the general practitioner is of the opinion that contact tracing and follow-up is still necessary in case of a negative lab result because of a very suggestive clinic (CT-scan) or epidemiological suspicion, he should explicitly indicate this in the central database by filling in the specific **eForm 2** (Request of contact follow-up in case of negative test result). Exceptionally, if the general practitioner wants to start contact tracing and follow-up without waiting for the laboratory result (or if the test cannot be performed), he should fill in the **eForm 3** (Direct application of contact follow-up in case of very strong suspicion of COVID-19 infection). • When following up contacts, the call centre may recommend a PCR test (i.e. if it is a close contact as defined above or if the contact shows symptoms). • These close contacts receive an SMS with a 12-digit code from the call centre. This serves as evidence for the GP that a PCR test should be taken. The GP can verify this code via the web application 'PCR Prescription validation' or via a direct link in the GPs software package. Upon validation of this test, the call centre is informed that the person has indeed contacted a doctor. For each valid test request, an eForm will be filled in and a test will be taken by the general practitioner or at the triage centre (as described in PCR testing conditions). • The GP remains the central figure in the whole process, given his unique relationship of trust with the patient.

https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_GP_NL.pdf

June 23th 2020



Flow of call centre for contact procedure:

These central systems are managed by the Federated entities. The IMC agreed that identical procedures should be followed in all federated entities and a working group was created in order to set up a common platform and tools. Two thousand people were recruited (with adaptation of the number according to the spread of the outbreak), with some of them already working in the administration, and others through public tenders launched by the federated entities. A field supervisor is likely to go to the patient/contact residence (e.g. if a contact by telephone was not possible).

1.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/nl/covid-19-procedures Version June 23th 2020	All close contacts are tested (High risk contacts, as defined above) within the following timeframe: • Asymptomatic close contacts, who have professional contact with persons at risk of a serious form of COVID-19, have to perform between day 11 and 13 of the isolation period (after telephone contact with the GP). In agreement with the patient, the GP can also already carry out a PCR test earlier in the first week after exposure. If the result is positive, the patient will begin a 7-day isolation and a search for close contacts will be initiated. If the result is negative, the quarantine period of 14 days remains valid. This also applies for the close contacts who will continue to work due to staff shortages (for essential professions). • All other asymptomatic close contacts will be tested immediately at identification. If the result is negative, the isolation period of 14 days remains valid. In agreement with the patient, the physician may perform a second PCR test if the first test was performed within 7 days after exposure. A 5-day interval between the two tests must be observed and this second test must be carried out at least 9 days after the last risky contact. If this second PCR test is negative, the quarantine may be stopped (therefore no sooner than 10 days after exposure). The physician will inform the patient that the quarantine has been stopped.

1.4.4 Contact tracing Apps

Date report(ed) and reference	Statement / definition
June 30th 2020	Decision on the use of an Apps are in progress. The following important characteristics are taken into consideration: voluntary basis, blue-tooth technology, anonymised data, and no geolocalisation. This was communicated by Karine Moykens the chair of the Interfederal Committee Testing and Tracing.

1.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition

https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_contact_FR.pdf
June 23th 2020
	• If the test result is negative, quarantine follows 14 days after the last risk contact.
	• If the test result is positive, this person becomes a confirmed case. It follows a home isolation for up to 7 days after taking the test.
	Quarantine measures for **close contacts**:
	• Stay at home for 14 days after the last risk contact (even in case of negative results). Going out is only authorised for small essential purchases (food, pharmacy,...), provided that a textile mouth mask is used and strict compliance with hygiene measures, whereby direct contact with other people is avoided.
	• In case of no professional contacts with people at risk of developing a severe form of the disease and if two PCR tests are performed (with at least 5-day interval between both tests and at least 9 days after the last risked contacts for the second test, see testing of contacts) and that both results are negatives, the quarantine may be stopped before 14 days (but no sooner than 10 days after exposure).
	• If during the quarantine period a housemate develops symptoms and is COVID-19 confirmed, the 14-day period starts again for all asymptomatic housemates exposed to this new patient.
	• For persons exercising an essential profession such as carers, work is exceptionally allowed if this is necessary to ensure continuity of service guarantees, provided:
	  ○ observing strict hand hygiene;
	  ○ active monitoring of body temperature and possible symptoms of COVID-19;
	  ○ maintaining a distance of at least 1.5 m from colleagues;
	  ○ avoiding social contacts outside of work;
	  ○ not travelling.
	Other measures for **close contacts**:
	• Extra attention should be paid to the basic hygiene measures (see Directive hygiene advice for high-risk contact).
	• For 14 days, all close contacts must themselves monitoring (self-monitoring), by measuring their temperature twice a day.
	• Persons professionally in contact with persons who have a risk of a serious form of COVID-19 will be contacted every 3 days by the call centre, to record the state of health.

https://covid-19.sciensano.be/nl/covid-19-procedures June 12th 2020	**Quarantine measures** for **low-risk contacts:** • Quarantine at home is not required for asymptomatic low-risk contacts. • However, it is recommended to keep social contacts to a minimum, while respecting from a distance of 1.5m. Other **measures** for **low-risk contacts:** • Extra attention should be paid to the basic hygiene measures (see Directive hygiene advice for low-risk contact). • A textile mouth mask should be worn for all outdoor movements for persons > 12 years old.

1.6 Early case detection methods

1.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
Sciensano 27 May 2020 https://covid-19.sciensano.be/sites/default/files/COVID19/COVID-19_FAQ_FR_final_0.pdf (in French and Dutch) and https://epistat.wiv-isp.be/covid/	Data reported by GPs, hospitals and collective facilities are grouped in a COVID-19 database managed by Sciensano, responsible for the epidemiological follow-up of the COVID-19 epidemic in collaboration with its partners and other healthcare actors. Example of data reported: • Confirmed cases by date, age, sex and province • Cumulative number of confirmed cases by municipality • Confirmed cases by date and municipality • Hospitalisations by date and province • Mortality by date, age, sex, and region • Total number of tests performed by date Four indicators are used to monitor the evolution of the epidemic: confirmed cases, new hospitalisations of laboratory-confirmed COVID-19 cases, intensive care unit (ICU) occupancy and deaths. These indicators are now presented with the 7-day average to illustrate a trend. One of the consequences of this is that the curve is smoothed and daily variations are reduced.

1.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
	As of two cases in the same collective facility, the federated entities (health directorate) will further decide on the most appropriate further testing strategy, adapted to the local conditions.

1.6.3 In hospitals

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_procedure_hospitals_FR.pdf CIM 17/06/2020	Depending on the testing capacity and the hospital, any new person requiring hospitalisation can be tested (according to the rules drawn up by each hospital, taking into account local context and the specific nature of the concerns). If the test is negative, the test can be repeated once, depending on the clinical evaluation. For each hospitalised patients with COVID-19, hospitals are asked to fill-in a questionnaire at admission (with questions on age, gender, location (postcode) and other information such as being a health care professional, living in a collective residential facility (and which one), etc.) and at discharge (with question on the severity, complications, treatments, etc.) and transmit it to Sciensano for epidemiological research.

https://www.health.belgium.be/fr/news/conference-interministerielle-sante-publique-du-17-juin-2020	Hospitals also report daily information to Sciensano on deaths due to COVID-19 confirmed by a laboratory test or chest CT scan and possible cases. Proposals for strengthening hospitals and their mutual cooperation within local-regional networks, particularly with regard to strengthening infection prevention and control, were discussed at the IMC. These proposals concern not only the hospitals themselves, but also transmural cooperation with actors in the first line of care and residential facilities such as nursing homes.

1.6.4 In nursing homes and other collective residential facilities

Date report(ed) and reference	Statement / definition
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_strategie_testing_NL.pdf April 24th	Collectivities have been recognised as places where grouped cases can occur and where transmission chains are maintained, especially where social distance and hygiene measures are difficult to be respected. Nursing homes have been identified as an at risk collectivity group. Other collectivities that have been in confinement applying very strict rules are settings where children are admitted with medical conditions, in temporary homes or boarding schools, chronically ill, with learning issues. For adults the different settings of the sectors youth care, people with disabilities, psychiatric collectivities, prisons, and lodgings for seasonal workers have been identified.
https://covid-19.sciensano.be/nl/covid-19-gevalsdefinitie-en-testing June 12th 2020	Any person who meets the definition of a possible case of COVID-19 is tested, especially residents and staff of collective residential facilities. As of two cases in the same collective residential facility, the responsible Federated entity will further decide on the most appropriate further testing strategy, adapted to the local conditions. Depending of the testing capacity, each new resident of a collective residential facility could also be tested (e.g. residential care centre, accommodation centre for people with disabilities, reception centres, prison...). If the test is negative, the test may be repeated once depending on the clinical evaluation.
AVIQ (12 May 2020) https://www.aviq.be/fichiers-coronavirus/Note%20information%20d%C3%A9claration%20en%20ligne.pdf	As of May 12th, and in order to standardise data collection in all regions (decided at an the IMC), each collective residential facility has been required to complete a daily declaration regarding: The total number of cases among residents or staff; The number of new cases per day The number of hospitalisations are collected in addition to the total number of cases. Between March and May 12th, these data were already collected on the regional level and each region has its own monitoring tool. For example in Wallonia: The monitoring of facilities with more than 10 cases automatically comes under the coordination of the Governors of the Province. The monitoring of institutions with less than 10 cases is done at the level of the Federated entities, with the possibility, however, of activating the emergency mechanism set up with the Governors of the Provinces if the situation is critical. Particular attention is also paid to the state of stocks of equipment and the level of staff available. Nursing homes and homes for the elderly also report mortality data to the Federated entities for confirmed and possible cases of COVID-19. Deaths of possible cases involve patients who have not undergone a diagnostic test for COVID-19, but who meet the clinical criteria for COVID-19 as judged by the physician.

1.6.5 In schools

Date report(ed) and reference	Statement / definition
French Community 18/05/20 http://enseignement.be/upload/circulaires/000000000003/FWB%20-%20Circulaire%207587%20(7840_20200515_171752).pdf	Children belonging to at-risk groups should not attend the school in the first phase of deconfinement. Parents of children with serious chronic illnesses are advised to consult their GP to determine whether or not they can attend the community. Children or staff with symptoms should stay at home. Children or staff living under the same place as a confirmed case (close contacts) must remain in quarantine at home for a 14 day period (14 days after the last high risk contact or 14 days after the confirmed case in the family has been authorised to stop the home isolation). If a child develops a symptom while attending school : He must be isolated in a dedicated space; His/her parents must be contacted immediately to come and pick him up; An adult from the school regularly inquires about the student's state of health (always the same one if possible); If a temperature reading is necessary, a digital remote thermometer will be used. If this is not possible, an axillary thermometer could be used by children who are old enough to use it themselves. Otherwise, the temperature will be taken by the parent at home; After a sick student leaves, the area should be ventilated and disinfected; Parents should contact the GP by phone. The School Health Promotion Service (SHPS) must be warned. This service can make sure the GP has been contacted. The school keeps the information confidential. If the child is a confirmed case (positive result), the call centre (of the appropriate Federated entity) contacts the School Health Promotion Services (SHPS) of the school. If the child attended school within the two days prior to the onset of symptoms (or sample collection), the SHPS team, in collaboration with the school principal, conducts the contact tracing. A list of persons who had contact with the case will be drawn up and divided into two parts: high-risk/close and low risk contacts (as defined in “contact definition”). The SHPS team also has to identify among the contacts whether there are children belonging to a risk group (pre-existing chronic pathology) who were attending school, in agreement with their GP. Telephone contact with the parents should be made immediately, informing them whether the contact is high or low risk, and asking them to discuss it with their GP. The communication with contacts will preferably be done by telephone, but e-mail or paper mail via the children’s school bags are also allowed. If communication with the parents has not been established despite several attempts through various channels, the SHPS team must report this to their Federated entity.
https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_paeds_NL.pdf	The COVID-19 Belgian Pediatric Task Force published advice for children and young people at increased risk and return to school.

1.6.6 Precarious population

Date report(ed) and reference	Statement / definition
https://kce.fgov.be/sites/default/files/atoms/files/KCE_313C_Performance_Belgian_health_system_Report.pdf Service de lutte contre la pauvreté 09/04/20 https://www.luttepauvrete.be/wp-content/uploads/sites/2/2020/04/200409-aper%C3%A7u-covid-19-FR.pdf	Persons not benefiting from the health insurance of RIZIV-INAMI can be covered by other schemes: Uninsured Belgian citizen (e.g. not in order with their social security contributions) can obtain help from the social assistance (OCMW-CPAS). Prisoners are covered by the Federal Public Service Justice. For asylum seekers, health care costs are either covered by the Federal Agency for the Reception of Asylum Seekers (Fedasil) or by the Ministry of Social Integration via the local welfare centres (OCMW-CPAS) Undocumented migrants are entitled to receive care via Urgent Medical Aid (UMA). During the COVID-19 crisis, measures have been taken to facilitate the administrative procedures and all care provided to undocumented migrants
Service de lutte contre la pauvreté 09/04/20 https://www.luttepauvrete.be/wp-content/uploads/sites/2/2020/04/200409-aper%C3%A7u-covid-19-FR.pdf	An inter-federal Task Force on Vulnerable Groups has been set up and resources have been made available to broaden the range of shelters for the homeless (for other measures, out of scope for this report (e.g. financial help), see the pdf). Many humanitarian volunteer initiatives (from NGOs like Médecins sans Frontières, Médecins du Monde, Croix Rouge, etc.) were also set up for the precarious populations (mobile teams, creation of structures providing information, testing, care, isolations, etc.). In Brussels, a telephone line was set up by the GPs' organisations to direct sick people to the local GP circles where a doctor will answer the call. Prisons, shelters for asylum seekers and the homeless, and equivalent residential facilities also received general hygiene and prevention advice from their respective supervisory authorities and were asked, whenever possible, to increase their capacity and to develop collaborative arrangements with health care facilities and alternative care sites where people with respiratory illnesses could receive appropriate care.

1.7 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
https://www.info-coronavirus.be/en/what-is-the-government-doing-about-it/ accessed June 13th	Belgium has been in the "federal phase of crisis management" from March 12th 2020. In the usual context, public health threats are monitored by the following two bodies: • The Risk Assessment Group (RAG) analyses the risk to the public based on epidemiological and scientific data, under the coordination of Sciensano. The core group is made up of experts from Sciensano and representatives of the health authorities. Depending on the topic, other experts are invited. For COVID-19 these experts include clinicians (GPs, infectiologists, paediatricians), hygienists and microbiologists.

- The Risk Management Group (RMG) takes measures to protect public health, based on the advice of the RAG. This group is chaired by the Federal Public Services (FPS) Public Health and is made up of representatives of the health authorities, both from the federal state and the federated entities.

In the context of the COVID-19 pandemic, a Scientific Committee for Coronavirus was set up in addition, to assist the health authorities in controlling the coronavirus. The Committee provides scientific advice on the evolution of the virus and helps ensure our country is optimally prepared for the spread of this new pulmonary virus

When the National Security Council (consisting of the Prime Minister and the Deputy Prime Ministers, the Ministers-President of the Regions and Communities) makes policy decisions, the various interministerial, interdepartmental and interregional crisis units concretise these decisions, coordinated by a Federal Coordination Committee. The Federal Coordination Committee (COFECO) is chaired by the National Crisis Centre (NCCN). Management of the medical aspects is specifically coordinated by the FPS Public Health (hospital capacity, personal protective equipment, testing, etc.).

COFECO is made up of the Chair of the RMG and representatives of the Prime Minister, the Federal Ministers for Home Affairs, Justice, Finance, Foreign Affairs, Public Health, Budget, Mobility, Defence, Employment and Labour, as well as the Ministers-President of the Regions and Communities. The following administrations are also represented: the FPSs Public Health, Mobility, Economy and Defence as well as the regional crisis centres and the federal police. The committee prepares and coordinates the implementation of the policy decisions of the NSC at strategic level.

The evaluation Unit, CELEVAL, chaired by the FPS Public Health, is made up of representatives of Sciensano, the Scientific Committee for Coronavirus, the Superior Health Council, the administrations responsible for public health at the level of the Regions and Communities, and the FPS Home Affairs and Mobility. It advises the authorities on matters of public health, so they can take decisions to tackle the pandemic.

Finally, beginning of April, a group of 10 experts was constituted by the Prime Minister to prepare the end of the confinement (Group of experts for the exit strategy or GEES).

2 RESULTS FOR DENMARK

2.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
June 9	None reported in early June (complaints of medical doctors in the general press)
July 13, personal communication	No written plan exists per se for a “second wave”, because a number of initiatives have been taken in order to control the spread of the virus in general. On June 9th, **The Danish Health Authorities published a strategic document** with description of initiatives for prevention of spread of the virus, identification of people infected, contact tracing and prevention of outbreaks etc. A comprehensive **contact tracing system** has been put in place and **guidelines for containment in areas with high risk of virus spread and vulnerable populations**, e.g. nursing homes, have been issued, extensive population based information initiatives with information of measures to prevent spread of infection, guidelines for people with symptoms and close contacts etc.

2.2 Testing strategy

2.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
July 7th https://www.sst.dk/en/english/corona-eng/faq https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=1.5%20Testing&Type=Section https://www.regionh.dk/til-fagfolk/presse-og-nyt/pressemeddelelser-og-nyheder/nyt-til-ansatte-i-region-hovedstaden/Sider/Personnel-information-on-the-coronavirus.aspx https://www.sst.dk/covid-turist	Testing can be done through two tracks: 1. The health care track • Symptomatic people (even with mild symptoms) • Close contacts of a confirmed case • Asymptomatic inhabitants of nursing care homes (and other institutions) as well as frontline nursing home personnel in case of infection among inhabitants or colleagues. From 30/06, systematic testing of nursing staff working at nursing homes and in home care. • Patients expected to be hospitalised for 24 hours or more, independently of the patient’s condition (referral by the hospital) • Out-patients who presumably will undergo one or more procedures which constitute a serious risk of exposure to COVID-19

	• Workers caring for patients with a very high risk of becoming seriously ill as a consequence of COVID-19 infection[2] 2. The public track: • Anyone who wants to be tested[3]

2.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
25/06 https://www.coronaprover.dk/Account/WhoCanBookTime 29/06 https://www.coronaprover.dk/lib/coronainformation-2020-06-29_ENG.pdf https://www.sst.dk/covid-turist	1. The health care track: • In general: the doctor (family doctor, nursing home doctor, etc.) creates a referral for testing at a hospital testing clinic. The patient subsequently returns to coronaprover.dk and books an appointment. • Close contacts: all persons with a positive test result are contacted by telephone by Corona Tracking (DK: "Coronaopsporing"), with is a unit under The Danish Patient Safety Authority. The unit helps with contact tracing and can refer those falling under the definition of close contacts for testing. Close contacts can also be referred by their family doctor. Close contacts are referred for two tests at TestCentre Denmark at an interval of two days after exposition to infection[4]. The individual subsequently returns to coronaprover.dk and book an appointment. • Other people falling under testing in the health track: Can be referred by a doctor, e.g. the nursing home doctor 2. The public track: • All Danes aged over 18 and resident in Denmark and migrant workers with an administrative civil registration number may book an appointment for a coronavirus test in TestCentre Denmark (coronaprover.dk). • All travellers and tourists entering Denmark via the airport or the most popular border crossings can get tested on site. • Also, testing can take place at a mobile test station that will be present at certain strategic locations, e.g. travel hotspots and amusement parks during the summer time etc.

[2] "on the basis of the prudence principle you should be tested again 48 hours after symptoms cease, and if this test is negative, you must be tested yet again after an additional 24 hours. If this test is also negative, you can return to work. You will possibly be reassigned to a less sensitive field of work from when you have been asymptomatic for 48 hours, and until there are two negative tests." https://www.regionh.dk/til-fagfolk/presse-og-nyt/pressemeddelelser-og-nyheder/nyt-til-ansatte-i-region-hovedstaden/Sider/Personnel-information-on-the-coronavirus.aspx

[3] You may choose to take a test even though you have no symptoms or are not a close contact of someone infected with novel coronavirus. You can schedule a test online at coronaprover.dk, where you will find everything you need to know in Danish about booking a test, the test itself, test results and what you should do if your test is positive. You may also be called in for testing as part of government monitoring.

[4] Individuals with an administrative civil registration number who have been in close contact with an infected person, must first get a referral before booking a test appointment. They can get a close contact referral by calling the contact tracing centre Coronaopsporing

2.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
25/06 https://www.coronaprover.dk/Account/WhoCanBookTime https://www.coronaprover.dk/lib/InformationAntibodyENGELSK.pdf	Individuals can currently only book an antibody test appointment on coronaprover.dk if they participate in a random sampling survey on the incidence of COVID-19 in the Danish population or if they participate in a research project. However, on the same website, it is explained how to book a test appointment and access results (same procedures as for PCR testing)

2.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
01/06 https://www.healthcaredenmark.dk/news/public-private-cooperation-increases-denmark-s-covid-19-test-capacity-by-100/ https://www.dtu.dk/english/news/2020/06/covid-19-test-14-timer-i-doegnet-7-dage-om-ugen?id=e19f4b88-eefb-492d-a33a-04cd7e5ecba2	Whole country (TestCenter Denmark): 10,000 tests per day Hospital testing clinics: 10,000 per day, which is being expanded further Capital Region: 1 500 tests per day to be extended to 5 000 tests per day in June Public-private cooperation: government & pharmaceutical industry labs.

2.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
29/06 https://www.coronaprover.dk/lib/coronainformation-2020-06-29_ENG.pdf	● Individuals with a NemID[5] will be able to see their test result on sundhed.dk and in the MinSundhed app. Most people can expect to be able to see their test results the day after the sample is taken, but in some cases, it may take up to 72 hours (three days). ● Individuals without a NemID can contact their doctor to get the results (also from sundhed.dk) or by calling the contact tracing centre Corona Tracking (Coronaopsporing) 48 hours after test ● Coronaopsporing calls all individuals with a positive test result. ● Non-Danish residents can get their test result from the clinic where they were tested.

[5] NemID (literally: EasyID) is a common log-in solution for Danish Internet banks, government websites and some other private companies. ... Everyone in Denmark who is over 15 years old and has a CPR-Number is eligible for a NemID that can be used with their bank as well as public institutions.

2.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=1.4%20Monitoring%20and%20surveillance&Type=Section https://www.sundhed.dk/borger/corona/covidmeter/ https://sum.dk/Aktuelt/Nyheder/Coronavirus/2020/April/Ny-digital-loesning-til-borgere-skal-COVIDmeter.aspx	• The system appears to be quite centralized. All appointments for testing must be booked TestCentre Denmark (on-line coronaprover.dk) and Corona Tracking (Coronaopsporing) which is a division of the Danish Patient Safety Authority contacts by phone any individual tested positive to track close contacts • Systems used for surveillance of COVID-19 include: ○ national-level tracking of tests, hospital admissions, patients needing ventilator assistance for breathing and deaths ○ a website with voluntary self-reporting of symptoms where voluntary citizens report influenza-like symptoms (https://influmeter.dk and COVIDmeter) ○ a panel testing surveillance system is initiated by the Statens Serum Institut (SSI) based on a sample of GPs and a sample of their patients who are tested on a weekly basis. ○ Blood banks testing for antibodies ○ testing of random samples of the total population (PCR and antibodies)From May 7, monitoring of the development of COVID-19 infections in the population based on the testing of random samples of the total population.

2.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
02/06 https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=4.2%20Entitlement%20and%20coverage&Type=Section https://www.sst.dk/da/Udgivelser/2020/Haandtering-af-COVID-19-uregistrerede-migranters-ret-til--sygehusbehandling	All legal residents and foreign visitors are entitled to health care including COVID-19 related care. No-one pays out-of-pocket for COVID-19 care (testing, treatment, transport, etc.). On April 2nd 2020 a guideline was published specifically stating that non-documented immigrants also have the right to free acute and continued hospital care in case of acute illness, including COVID-19.

2.3 Isolation strategies and monitoring of confirmed cases

2.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
29/06 https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg	• Immediate self-isolation at home until test comes back negative and there are no longer symptoms of COVID-19. • Within the household: Isolation of the the person suspected of infection from other household members, including maintaining a distance of at least 2 meters and staying in separate rooms, as well as maintaining a high standard of hygiene and cleaning. • Same guidelines for children as for adult. • If you choose not to get tested, you should stay isolated until 48 hours after your symptoms disappear (similar to a confirmed case)

2.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition
29/06 https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg	• **With symptoms**: continue self-isolation until 48 hours after the symptoms are gone (if only a loss of taste and smell remains, the individual is considered symptom-free) • **No symptoms**: self-isolation until 7 days after taking the test. If symptoms appear during the 7 days, self-isolation home for up to 48 hours after you are symptom-free (except the loss of taste and smell).

2.4 Contact tracing strategy

2.4.1 Contact definition

Date report(ed) and reference	Statement / definition
25/06 https://politi.dk/en/coronavirus-in-denmark/frequently-asked-questions https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg	Close contacts are defined as: • People you live with • People you have had direct physical contact with (e.g. hug) • People who have had unprotected and direct contact with infectious secretions from you (for example, if you have accidentally coughed or sneezed at them, or if they have touched your used handkerchief, etc.) • People you have had close "face-to-face" contact with within 1 meter for more than 15 minutes (for example, during a conversation)

	• Healthcare professionals and others who have participated in your care and have not used the recommended protective equipment. Those with whom you have not been nearer than 1 meter for a continuous period of more than 15 minutes, are not considered close contacts.

2.4.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
29/06 https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=1.4%20Monitoring%20and%20surveillance&Type=Section https://www.sum.dk/Aktuelt/Nyheder/Coronavirus/2020/Juni/Nu-er-appen-smittestop-klar-til-danskerne.aspx http://smittestop.dk	An employee from Corona Tracking (Coronaopsporing) which is a division of the Danish Patient Safety Authority contacts by phone any individual tested positive to track close contacts. • **For individuals with symptoms**: close contacts from 48 hours before symptoms started to 48 hours after cessation of symptoms must be traced • **For individuals without symptoms**: close contacts met 48 hours before the test to 7 days after the test must be traced From June 10, the Danish Patient Safety Authority will contact all infected persons with an offer to assist in tracing and contacting close contacts. Contact tracing is strongly recommended, but voluntary. On June 18th 2020 the app SmitteStop was launched allowing for contact tracing using cell phone data.

2.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
25/06 https://www.coronaprover.dk/Account/WhoCanBookTime 29/06	Coronaopsporing (Contact Tracking) will refer close contacts for testing, even if they have no symptoms. Their GP can also refer them for testing if they call him/her. Close contacts: the doctor creates two referrals for testing at TestCenter Denmark, to be tested twice at an interval of two days after exposition to infection[6]. The individual subsequently returns to coronaprover.dk and books an appointment[7].

6 Individuals with an administrative civil registration number who have been in close contact with an infected person, must first get a referral before booking a test appointment. They can get a close contact referral by calling the contact tracing centre Coronaopsporing

7 If one close contacts has previously tested positive, we recommended that the close contact is tested and self-isolate only if more than eight weeks have gone by since the close contact first tested positive.

https://www.coronaprover.dk/lib/coronainformation-2020-06-29_ENG.pdf https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg	

2.4.4 Contact tracing Apps

Date report(ed) and reference	Statement / definition
17/06 https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=1.5%20Testing&Type=Section	The Danish Health Authority asks everyone (on a voluntary basis) who has been tested positive for coronavirus to contact persons that they have been in close contact with, so they too can be tested. This can be done also automatically and anonymously with the app "SmitteStop"[8].

2.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
29/06 https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg	The Danish Health Authorities recommend that individuals self-isolate until the first negative test result is available, i.e. usually within 48 hours. If test is positive, then see recommendations in 1.3.2

2.6 Early case detection methods

2.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
https://www.sst.dk/-/media/Udgivelser/2020/Corona/Retningslinjer/Retningslinjer-for-haandtering-af-COVID-19.ashx?la=da&hash=BE6BE868AA	Surveillance measures are described above. Continuous testing of health care personnel and personnel in nursing homes etc. with no symptoms is being initiated. Prevention of infection by regular staff testing - Denmark July 13th (translated with google) In case of spread of infection with COVID-19 in a municipality or another geographically delimited area, regular testing of health and care professionals in that area should be conducted. This is for the purpose of preventing the spread of infection

8 If a user tests positive for the Coronavirus, they can log into the app using their NemID, upon which a notification will be prompted to users who have been in contact with infected users for more than 15 minutes at a distance of 1 meter.

53E335DD6F7003AD134D5E5D8AD122 https://www.sst.dk/da/Udgivelser/2020/Vejledning-om-forebyggelse-af-spredning-af-COVID-19-paa-plejecentre-bosteder	A cross-cutting group 'signal group' under the leadership of the Statens Serum Institut and with Representatives from the National Board of Health and the National Board of Patient Safety continuously assess the incidence of local spread of infection, with the aim of being able to initiate quickly preventive measures if there is evidence in the surveillance of the spread of infection via chains of infection or outbreaks. If the group assesses that in an area there is a spread of infection, there cannot be immediately explained by a local outbreak at a particular institution or the like, the Danish Agency for Patient Safety should enter into a dialogue with the municipality and their infection hygienic unit for the purpose of initiating regular testing of health and care personnel in the area in question. Healthcare professionals should be tested every 7 days for 2 months or until the spread of infection in the area where the chains of infection are not covered.

2.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
	The Danish Patient Safety Authority contacts all individuals with a positive test result and assists in contact tracing with the purpose of identifying clusters and preventing spread. The Danish Patient Safety Authority also can also assist in contact tracing etc. in case of outbreaks in public institutions, e.g. nursing homes.

2.6.3 In hospitals

Date report(ed) and reference	Statement / definition
July 13th https://www.sst.dk/da/Udgivelser/2020/Retningslinjer-for-haandtering-af-COVID-19	On April 1st it was added to the guideline for management of COVID-19 in the health care system that doctors should test for COVID-19 whenever it was clinically suspected and that also individuals with mild symptoms should be tested. On April 21st it was added that all patients who required admission more than 24 hours and all patients who had to undergo certain procedures with a high risk of virus transmission should be tested within 48 hours before admission/procedure. Continuous testing of health care personnel and personnel in nursing homes etc. with no symptoms is being initiated.

2.6.4 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
April 8th https://www.sst.dk/da/Udgivelser/2020/Vejledning-om-forebyggelse-af-spredning-af-COVID-19-paa-plejecentre-bosteder	Guideline issued on handling of suspected and confirmed cases of COVID-19 in nursing homes and other collective facilities. Continuous testing of health care personnel and personnel in nursing homes etc. with no symptoms is being initiated.

July 13th https://www.sst.dk/da/udgivelser/2020/vejledning-om-forebyggelse-af-spredning-af-covid-19-paa-plejecentre-bosteder	

2.6.5 *In schools*

Date report(ed) and reference	Statement / definition
16/4 https://www.sst.dk/da/Nyheder/2020/Vejledningerne-for-den-gradvise-kontrollerede-genaabning-af-skoler-og-daginstitutioner-er-opd 13/7 https://www.sst.dk/da/Nyheder/2020/Hvordan-skal-skoler-og-daginstitutioner-haandtere-tilfaelde-af-COVID-19	Guidelines for schools and child care facilities were published with the reopening of schools etc in April/May and revised prior to the new school year starting in August.

2.6.6 *Precarious population*

Date report(ed) and reference	Statement / definition
	Since the beginning, individuals in increased risk of serious COVID-19 disease have been prioritized in the testing strategy and in the public information, individuals at increased risk have been encouraged to contact a doctor and get tested, even when experiencing mild symptoms. Since testing opportunities are now broadly available, no specific measures for early case detection methods in populations at increased risk of serious COVID-19 disease exist apart from the contact tracing strategies etc. included in the guidelines for nursing homes, home nurses, continuous testing of personnel etc.

2.7 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
29/06 https://www.sst.dk/en/English/Corona-eng/FAQ#uk-corona-faq-syg https://www.covid19healthsystem.org/countries/denmark/livinghit.aspx?Section=5.1%20Governance&Type=Section	• **Testing**: All demands for testing are centralized by Testcenter Danmark (coronaprover.dk) • **Tracing**: Corona Tracking (Coronaopsporing) which is a division of the Danish Patient Safety Authority coordinates contact tracing The National authorities (Ministry of Health, Danish Health Authority, Danish Medicines Agency, Statens Serum Institut, etc.) have established a “COVID-19 Intensive Task Force” together with the Danish Regions (that are responsible for specialized health care and general practice). The task force is in charge of assessing and governing resources needed during the pandemic.

3 RESULTS FOR FRANCE

3.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	France has established a plan to prevent the second wave based on 4 scenarios: 1. Epidemic under control (based on available indicators), with occurrence of localised clusters that can be controlled. 2. Existence of critical clusters, raising fears of a loss of control of the chains of contamination, and therefore of the control of the epidemic itself. This scenario would require strict, early and localised measures to avoid a wider loss of control of the epidemic. 3. A gradual and low-noise resumption of the epidemic, more difficult to identify. Indicators would then deteriorate without the chains of contamination being identified nor controlled. This scenario would require strict measures as well as the rapid activation of several P2R-COVID measures (see below). The measures to be taken could still be considered on a regional scale if the indicators allow it or at the national level. 4. A loss of control of the epidemic that would require difficult decisions, i.e. a choice between generalised national lock-down, which minimises direct mortality, and other collective, economic and social objectives. A new generalised lock-down is not desirable and probably not acceptable considering its health and socio-economic consequences. They therefore consider it is essential to do everything possible to avoid such a situation. They have drawn up a 7-part “Enhanced Prevention and Protection” Plan (P2R COVID) to prepare measures that can be activated gradually or massively depending on the characteristics of the epidemic in the coming weeks and months. 1. A protocol for the strengthening of barrier and physical distancing measures in the general population; 2. A protocol to reinforce testing, tracing, and isolating strategies; 3. A protocol for the reinforced containment and protection of persons at risk: this protocol aims to protect the persons most at risk, in particular by encouraging voluntary containment and accompanying measures to adapt daily life (carrying meals, domestic help at home, etc. managed by collective authorities), including teleworking if possible or the provision of surgical masks every 4 hours and the strict respect of barrier measures if teleworking is not possible (under the monitoring of the occupational physician). Target population are: people with a chronic disease, people receiving a long term treatment, people from 65 years old, or people with high blood pressure, diabetes, coronary heart disease, or overweight. The risk is assessed by the GP. 4. A protocol for the protection of nursing homes for older people: the Scientific Council has already given its opinion on several occasions on the necessary protection of residents in nursing homes. In this post-confinement period, the Scientific Council proposes a new strategy for these establishments, based on the triptych "Screening - Family visits - Early and adapted care". 5. A protocol for populations in very precarious situations: this protocol is necessary in order to allow the most precarious populations to serenely have recourse to screening. Special assistance is offered to them so that they can adhere to the generalised testing policy. The measure concern: ○ Mobilization of all public and private accommodation solutions in order to increase access to accommodation allowing isolation in single rooms.

- Organizing gathering points, providing water, food but also health and social support, masks and hydroalcoholic solutions, information on barrier measures, etc.), managed by the municipalities in collaboration with the regional health authorities and the associations.
- Proactively informing the population and invite them for testing (e.g. in hosting structure), in collaboration with association specialized in precarious population and other professionals such as interpreters
- Reducing the consequences of a positive result, for example by ensuring that, during the isolation period, their place in collective housing is retained, that all members of the household are taken care of (e.g. for single-parent families), that their animals are taken care of, and that a specific allowance is granted (for precarious people who cannot provide proof of a regular income allowing them to have access to other forms of compensation).
- A prolongation of the specific rights acquired during the lock-down period (e.g. access to state medical assistance, postponement of procedures relating to residence rights).

6. A "Large metropolitan areas" protocol: this protocol is in line with the need already expressed by the Scientific Council to adapt the measures according to local epidemiological situations. The history of the epidemic in France has shown that metropolises, particularly the “Ile de France” region, were faced with different challenges from those in rural areas. This protocol responds to these specific needs. This protocol is particularly linked to the protocol relating to the precarious population..
7. A protocol for hospital preparation: this protocol aims to strengthen the response capacity of public and private hospital structures, but also of medico-social establishments in case of a second wave. Particular attention is paid to the health care workers who have been in high demand over the last two months, as well as to the strategic stocks of drugs, materials and protective equipment that have been replenished.

In the scenario 1 (outbreak under control):

- Barrier measures: Compulsory wearing of masks in all confined spaces, use of hydroalcoholic gel at the entrance and exit of these confined spaces, strict respect of social distancing (1m), suppression of unnecessary gatherings.
- Contact tracing : testing - tracing - isolation (as described below)
- Travel restrictions and the obligation to telework could be gradually lifted and a more comprehensive reopening of schools could be achieved, with very close monitoring of the various surveillance indicators.

In the scenario 2 (One or more critical clusters showing signs of a local resumption of the epidemic):

- A strengthening of barrier measures (protocol 1)
- A strengthening of the testing-tracing-isolation strategy: within the perimeter of the cluster, testing will not be limited to symptomatic cases and an active information campaign encouraging people to get tested will be done (managed by the regional health agencies in conjunction with the GPs and local authorities).
- A focus on precarious population (protocol 5)
- A localized lock down, accompanied by compensatory measures

In the scenario 3 (A diffuse and low-noise resumption of the epidemic):

- Activation of the 7 protocols. The level of intensity of the measures must be determined according to the epidemiological situation and its geography.

In the scenario 4 (The epidemic is reaching a critical stage):

- Increase of hospitals’ capacities (protocol 7).

	• Authorities would have to choose between a generalised national lock-down, which minimises direct mortality, and other collective, economic and social objectives.

3.2 Testing strategy

3.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf and 6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	• All persons presenting symptoms of Covid-19, including shortness of breath, fever, cough, unusual tiredness, headache, muscle pain, sore throat, loss of taste or smell. A prescription is required. • All people identified as having had a contact, with a high risk of transmission, with a person tested positive (contacts at risk, see the contact tracing strategy). No prescription is required. • Preventive testing of specific groups. Specific screening campaigns are planned for (i) the precarious populations, (ii) residents of collective facilities and of staff working in these facilities in the event of a first case confirmed within the facility, and (iii) in areas identified as vulnerable due to their density or the remoteness of access to care. See details in "early detection methods. Systematic testing is not recommended in companies, public services, or for all patients admitted to hospital (Jean Castex).

3.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020) https://lejournal.cnrs.fr/articles/un-test-salivaire-ultra-rapide-pour-depister-le-covid-19 (last update: 15 June 2020, accessed 19 June 2020)	Up to June 15, only nasopharyngeal RT-PCR tests were considered reliable enough to confirm the presence of the virus in the body. To avoid false negatives, both nostrils are explored during sampling. On June 15, market authorization of a saliva test was approved in France. Reimbursement conditions are not yet determined.
6 May 2020; Jean Castex	Two types of health professionals are allowed to take the sample: nurses, and biologists - whether pharmacists or doctors.

https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	

3.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
20 April 2020 Scientific Council (n°6) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_20_avril_2020.pdf and 6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	Serologic tests will be used as a priority not for the determination of individual status but rather for epidemiological investigations in order to determine the level of herd immunity achieved. These investigations should be conducted at the regional and national levels, and will be repeated regularly to monitor the progress of population immunity. They can be carried out on a large scale using ELISA or similar techniques (possible throughput of more than >100,000 tests per day). The usefulness of unit field tests (TROD, Tests unitaires de terrain) at the individual scale is relative, but there is likely to be a high demand. It should be remembered that these tests can only be performed on medical prescription (Scientific Council, N°6). These tests may also be used to identify health workers who have developed an immune response and, if the protective nature of the antibodies is confirmed, will make it possible to reorganise the services of the health establishments concerned (Jean Castex). Reimbursement conditions of serologic tests are described below (How is testing reimbursed?)

3.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	After the lock-down period (May, 11), the objective is to carry out at least 700,000 tests per week. To increase testing capacity, all research and veterinarians labs, in addition to private laboratories, are now requested to support public laboratories. Three types of structures are used: 1. Hospital laboratories providing PCR diagnosis (capacity: 35 000 tests/day). The diagnoses carried out by these laboratories will mainly concern people presenting in emergency departments or hospitalised patients. 2. Dedicated high-intensity PCR diagnostic laboratories: 21 sites created during the crisis, financed by public authorities, being in connection with hospitals or private establishments. They operate 7/7, were equipped by high intensity machines bought in China and are associated with dedicated sampling sites, most of the time with a doctor on site to

	prescribe the test. Access can therefore be made independently of the treating physicians. Their diagnostic capacity is estimated at 40 000 tests/day. 3. Private city laboratories providing PCR diagnosis. These laboratories and their sampling centres are spread throughout the country. In total, the capacity of these laboratories appears to exceed 60 000 tests/day, and may increase further. Results generated by these 3 structures are directly reported into one database in real time (the SI-DEP).
https://sante.fr/recherche/trouver/DepistageCovid (Last update: accessed on 15 July 2020)	A total of 3314 sample points are spread over the territory (on 15 July).

3.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
10 May 2020 https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020)	Results must be available no later than 24 hours after the test has been performed (maximum time limit of 24 hours between the consultation of an individual and the receipt of his or her test result). Results are sent: • by the laboratory (by phone, or on the internet); • and/or by SI-DEP (the national information system for the follow-up of Covid-19 screening set up from May 2020).

3.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
10 May 2020 https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020) 02 June 2020; Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	The SI-DEP is their national information system for the follow-up of Covid-19 testing (set up from May 2020). All results generated by the 3 types of laboratory structures (see above) are directly reported into this database in real time. All data collected may be reused for health surveys (follow-up of patient's diagnosed positive for Covid-19 and/or search for "contact cases"), epidemiological surveillance and research via the health data platform. Data are kept for a maximum of one year. Patient cannot refuse the processing of his/her data in the SI-DEP tool but may access his/her own data, rectify them, and refuse the re-use of his/her data for research purposes. A surveillance is done by regional health agencies to identify potential chains of transmission and clusters of cases at the local area level, in collaboration with the National Public Health Institute and the Ministry of Health. If a cluster is identified, testing will not be limited to symptomatic cases and an active information campaign encouraging people within the perimeter of the cluster to be tested will be done (managed by the regional health agencies in conjunction with the GPs and local authorities).

3.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
Decree of 28 May 2020 Opinion of the HAS of 20 May 2020 (https://www.has-sante.fr/jcms/p_3186099/fr/la-has-est-favorable-au-remboursement-des-tests-serologiques-a-la-fiabilite-validee-et-dans-les-indications-definies)	While in the past PCR-tests were only fully reimbursed if performed in hospitals, they are now (since May) also fully reimbursed when performed ambulatory (according to the indications defined and updated by the health authorities, see above). Serological tests are fully reimbursed if prescribed by a physician in the following conditions, as defined by the "Haute Autorité de la Santé" (HAS): • As initial diagnosis for severely symptomatic hospitalised patients who are PCR negative but whose clinical symptoms or CT scans are suggestive of COVID-19. • As catch-up diagnosis for severely symptomatic hospitalised patients who have not had a PCR tests within the first seven days; • As initial diagnosis of symptomatic ambulatory patients without signs of severity whose PCR test is negative but whose clinical picture is suggestive of COVID-19; • As catch-up diagnosis of symptomatic ambulatory patients without signs of severity but for whom a PCR test could not be performed within the 7 days; • As deferred diagnosis for patients who had been clinically diagnosed since the implementation of phase 2 (from March 2, 2020) but who had not undergone PCR; • As antibody detection in non-symptomatic healthcare professionals, in addition to screening and contact tracing procedures by PCR, if the PCR is negative. • As antibody detection in non-symptomatic staff of collective facilities (social and medical-social establishments, prisons, barracks, university residences, boarding schools, etc.) in addition to screening and contact tracing procedures by PCR, if the PCR is negative. A list of 23 serologic tests has been validated by the national reference centre. Tests validated by the centre (RT-PCR, serological, rapid test) can be found at : https://covid-19.sante.gouv.fr/tests

3.3 Isolation strategies and monitoring of confirmed cases

3.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
10 May 2020 https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020) and 6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	The patient suspected of being infected because of symptoms must follow the same isolation procedure as confirmed cases, even if test results are negative.

3.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition
10 May 2020 https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020) and Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf 6 May 2020 Jean Castex	In case of a positive result, the contact tracing procedure is initiated (see above). Positive patients should isolate themselves until a complete recovery (at least 2 days of symptom free). If symptoms worsen, they should call the 15 (or 114). (The duration of isolation is not specified but in the examples of work incapacity certificates, a duration of 14 days is mentioned). The possibilities for isolating cases and contacts will be reinforced by offering dedicated accommodation (such as hostels, detention centres, etc.), while respecting individual choice. Human rights associations will be authorised to visit these isolation facilities. Isolation in a dedicated facility should be preferred when this is necessary to prevent the spread of disease. If isolation within the household is decided, the other members of the household should also isolate themselves, except to respond to basic needs if asymptomatic (limited frequency and following strictly barrier mesures). The duration of this isolation should be extended if further cases are detected in the household. Regional health authorities are responsible for organising an active and regular telephone follow-up of isolated patients and contacts to ensure that they comply with the isolation instructions and do not encounter difficulties in their daily lives (Jean Castex): i.e. the patient is contacted once or twice a day by the services of their regional health agency to ensure that the isolation (or quarantine for contacts) is respected and that the associated measures are correctly applied. When this is not

https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf 15 July 2020 https://www.ameli.fr/assure/covid-19/isolement-principes-et-regles-respecter/isolement-principes-generaux	possible, the patient may indicate a need for specific support (social, logistical, psychological) and will be redirected to the appropriate services (Ameli).
6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	Modalities for home monitoring of confirmed cases: • Self-monitoring, by the patient himself or his entourage; • Medical monitoring, with or without the help of a self-monitoring or remote monitoring tool; • A reinforced follow-up at home by nurses, in addition to the medical follow-up; • Hospitalisation at Home (HAH).

3.4 Contact tracing strategy

3.4.1 Contact definition

Date report(ed) and reference	Statement / definition
6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	Contacts at risk are defined as: • a person who has shared the same living space • a person who has had direct contact, face to face, at less than 1 metre, for any length of time (e.g. conversation, eating, flirting, hugging, kissing). On the other hand, people who are crossed in the public space in a fleeting way are not considered as risk contacts. • a person who has given / received hygienic / care acts • a person who has shared a confined space (office, meeting room, personal vehicle...) for at least 15 minutes or has been face to face during several episodes of coughing or sneezing • a student or teacher in the same school class However, persons who have benefited from the following protective measures shall not be considered as contact at risk : • hygiaphone or other physical separation such as glass; • surgical mask or FFP2 worn by the sick person or the contact; • masks for the general public manufactured according to the AFNOR standard or equivalent, worn by the sick person and the contact.

	For people identified via the StopCovid19 application, if the “confirmed case” is unknown (i.e. the contact was not identified simultaneously via the standard contact tracing procedure) and therefore the circumstances are unknown, the contact is automatically considered as at risk. For asymptomatic cases, only very close regular contact (e.g. same household) are considered at risk.

3.4.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf and 03 June 2020 Coralie Gandre, Zeynep Or https://www.covid19healthsystem.org/countries/france/livinghit.aspx?Section=1.4%20Monitoring%20and%20surveillance&Type=Section	The following steps are followed: 1) Contact tracing within family members by **health professionals** in primary care (mostly GPs and nurses) and hospital care: A higher fee (€55 instead of €25 for a regular consultation) is foreseen for this “contact-tracing consultation”. 2) Further (outside family members) contact tracing is done by **specifically-trained agents of the national health insurance fund (Ameli).** Health squads/platforms were set up in each department to track the list of contacts. A team of 6500 agents (medical, administrative or social staff), subject to medical confidentiality, received ad hoc training from regional health agencies and local branches of the National Public Health Institute. They must contact by phone within 24 hours all identified contacts of every single confirmed case, in order to inform them regarding the potential contamination risk, and the measures to follow: isolation and testing. These ‘squads’ work every day from 8am to 7pm, even on weekends. Some agents from local territorial public agencies may be called upon to back up the national health insurance fund. Regional health agencies are in charge of contact tracing when a case is detected in a collective place (school, nursing home…). 3) Creation of registries: Two national registries were created, i.e. (1) the cases tested positive (The SI-DEP repertory, ‘Système d’information national de dépistage’) and (2) the contacts of all confirmed cases (Contact Covid) to ease tracing. The National Commission for Data Protection and Liberties (CNIL) was consulted on the creation of such registries (see digital tools). On May 11, the Constitutional Council banned the access of social care providers (notably community social welfare centres /‘centres communaux d’action sociale’, CCAS) to this database. 4) The surveillance by regional health agencies to identify potential chains of transmission and clusters of cases at the local area level, set up since the beginning of the epidemic, must continue (in addition to the local and national surveillance carried by the National Public Health Institute and the Ministry of Health). 5) The “Stop-COVID” mobile application will also be an important additional tool for tracing contacts.
Guide méthodologique d'investigation des cas et des ... https://www.santepubliquefrance.fr/content/download/230089/file/20200513_Guide-CT.pdf	Details of the interview: As soon as possible after diagnosis. If the confirmed case cannot answer, the interview can be conducted with a trusted person. The interviewer first gives information on whether the approach is in compliance with the GDPR and on the conditions of access to and rectification of data. Data collected for each contact: identity, email address and telephone number, circumstances and date of contact. If several contacts have taken place with the same person, the frequency of contact (daily or less frequent), the duration and date of the last contact at risk, or the fact that the person is still in contact with the case at the time of the interview should be collected. For

	minors, their identity must be collected but the contact information (telephone, email) is that of the minor's parent(s) or legal representative. If the case refuses to give the identities and contact details of the contact persons, an alternative may be offered to warn these persons and give them a number to contact at the platform level, depending on the organisation set up locally. The case must also be able to refuse to have its identity communicated to the contact persons. Various means can be used to facilitate the compilation of this list: mentioning typical circumstances (contacts at home, family outside the home, colleagues, people who have travelled with the case), and significant events during the period at risk (public holidays, weekends, etc.). It is strongly recommended that the interviewer use a calendar. If the contact person is a hospital caregiver or intervenes in a medico-social institution, and the contact with the case took place in the professional context, the investigation and evaluation of the contact should be referred to the occupational physician and the operational hygiene team of the health care institution. For the others, the investigation is carried out in the same way as for the community contacts. The interview may be grouped for several contact persons living under the same place (except for collective living places such as nursing homes or prisons), especially for children, but a questionnaire must be completed for each person.

3.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	All contacts at risk are tested. The test is performed: • immediately for people living in the same place and being symptomatic • 7 days after the last contact for other people.

3.4.4 Contact tracing apps

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	The app StopCovid, used on a voluntary basis. The application will use pseudonymized data, without the use of geolocation, and will not lead to the creation of a registry of contaminated persons. Its purpose is to inform users of the risk of contamination when they have been in close proximity to another user who has tested positive. It is a "contact tracing" device based on Bluetooth technology. The Apps inform the “contact” person about the quarantine instructions and recommend him/her to contact the contact-tracing platform. The National Commission for Data Protection and Liberties (CNIL) made a series of recommendations, mainly on the fact that processing responsibility should be entrusted to the ministry in charge of health policy or that there should be no negative legal

Advice of the CNIL 25 May 2020 https://www.cnil.fr/fr/la-cnil-rend-son-avis-sur-les-conditions-de-mise-en-oeuvre-de-lapplication-stopcovid	consequences attached to the choice not to use the application. They also advise on the implementation of some technical security measures. In their latest opinion, they also recommended improving the information provided to users, in particular regarding the conditions of use and on how to erase personal data, providing specific information for minors and parents of minors, allowing a right of opposition and a right to erase recorded pseudonymised data and giving free access to the entire source code of the mobile application and server. The CNIL notes that its main recommendations have been taken into account and believes that this temporary system, based on voluntary work, can legally be implemented. This technology will be assessed and its continuity will depend on such an assessment. According to the advice of the scientific council of 2 June 2020, the issues of protecting the identity of individuals and the confidentiality of data concerning them must be controlled with the highest level of security, as for any medical activity. The Council stresses the importance of working on devices also designed to benefit the people that are not used with digital applications and highlight that efficiency will only be achieved through ownership, inclusion and transparency. Because of their sensitive nature, the Council considers that these tools must be steered by the public health authorities and that their deployment must be limited to the period of a state of health emergency and be framed by clear, open and transparent governance that will encourage our fellow citizens to support their public health objectives. This governance could be constituted by the mobilization of doctors, paramedical staff, volunteers and staff to be recruited. An operational training course providing the prerequisites in terms of data confidentiality, risk assessment on the basis of references, guidelines on how to deal with isolation and referral to local diagnostic and clinical care (general medicine, etc.). This service must be known and understood by the entire population, particularly the less socially privileged. Transparent and appropriate communication, particularly in the area of literacy, will be necessary. It will have to use multiple complementary approaches with, in particular, the active involvement as far upstream as possible from the entire medical community, in particular community medicine.

3.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
10 May 2020 https://www.gouvernement.fr/info-coronavirus/tests-et-depistage (Last update: 10 May 2020, accessed on 10 June 2020) and 6 May 2020 Jean Castex https://www.gouvernement.fr/sites/default/files/rapport_jean_castex_-_preparation_de_la_sortie_du_confinement.pdf	The contact person (at risk as defined above) must remain confined in his/her home and strictly adhere to all barrier measures up to the results of the test. Once test results are obtained: • If the test is positive => see management of confirmed cases (isolation procedure) • If the test is negative but people are symptomatic => same management as for confirmed cases (isolation procedure) • If the test is negative and people are asymptomatic => quarantine procedure for 7 additional days. The isolation is softened and going outside is allowed to respond to basic needs, in a limited frequency and following strictly barrier mesures. Because the test of asymptomatic patients is performed 7 days after the last contact with the confirmed case, the total quarantine lasts 2 weeks. Regional health authorities are responsible for organising an active and regular telephone follow-up of contacts to ensure that they comply with the quarantine instructions and do not encounter difficulties in their daily lives (Jean Castex).

https://www.service-public.fr/particuliers/actualites/A14060	Concerning travelling, a quarantine is also mandatory for: • anyone going to the overseas regions (Guadeloupe, French Guiana, etc); • any person arriving on national territory with symptoms of Covid-19 infection identified during health checks.

3.6 Early case detection methods

3.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	In their last plan to prevent a second vagues, the following monitoring indicators were cited: • Mortality of COVID-19 hospitalised patients (per day and in total); • Mortality of COVID-19 patients in homes for the elderly and nursing homes (per day and in total); • Overall and excess mortality; • The number of new hospitalised patients for COVID-19 and the total number of people hospitalised for COVID-19; • The number of new patients admitted to intensive care unit (ICU) for COVID-19 and the total number of persons admitted to ICU for COVID-19; • The number of tests performed; • The number of confirmed case (PCR-positive); • The deadline of the testing-tracing-isolating strategy; • The effective reproduction number (R) and the doubling time of the epidemic;
9 July 2020 Santé Publique France https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/bulletin-national/covid-19-point-epidemiologique-du-9-juillet-2020	The Public Health institution (Santé Publique France) publish the following data: • Number of new confirmed cases of COVID-19 (SI-DEP) • Positivity rate (%) for SARS-COV-2 (SI-DEP) • Number of SOS Doctor acts for suspicion of COVID-19 • Number of emergency visits due to suspicion of COVI-19 (OSCOUR® network) • Number of new patient hospitalisations COVID-19 (SI-VIC), + cumulative data • Number of new admissions in resuscitation unit for COVID-19 (SI-VIC) • Number of deaths related to COVID-19 (including inpatient deaths and deaths in nursing homes and other collectivities) + cumulative data • Number of (tele)consultations for acute respiratory infections + the percentage of those tested (via sentinel network acute respiratory infections) • Test positivity rate and number of new patients positive for CoV2-SARS per 100 000 population (incidence rate) per region or department

	• Proportion of participants reporting symptoms suggestive of COVID-19 per week (via sentinel network influenza) • Identification of outbreaks / transmission sites (see the definition below: 3 cases within 7 days), with a specific analysis for homes for older people and other medical facilities. • Effective reproduction number • Estimation of seroprevalence of CoV-2-SARS infection by sex, age and region (based on random samples of anonymised sera from the serotheques, i.e. tube bottoms) • The number of reported paediatric multisystemic inflammatory syndromes • The number of departments in situation of vulnerability (estimation based of the whole set of indicators, including the investigation of clusters) They also carry out surveys on the monitoring of the adoption of protective measures and on mental health.

3.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	A surveillance is done by regional health agencies to identify potential chains of transmission and clusters of cases at the local area level, in collaboration with the National Public Health Institute and the Ministry of Health. If a cluster is identified, testing will not be limited to symptomatic cases and an active information campaign encouraging people within the perimeter of the cluster to be tested will be done (managed by the regional health agencies in conjunction with the GPs and local authorities). Regional health agencies are also in charge of contact tracing when a case is detected in a collective place (school, nursing home…)
09 July 2020 Santé Publique France https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/bulletin-national/covid-19-point-epidemiologique-du-9-juillet-2020	An outbreak is defined by the occurrence of at least 3 confirmed or suspicious cases, within a period of 7 days, and who belong to the same community or have participated in the same gathering of people, whether they know each other or not.
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	In process: The creation of mobile contact tracing and isolation teams, particularly to target isolated or precarious populations or in the event of transmission outbreaks.
02 June 2020 Scientific Council (n°7)	How to identify a "critical cluster" is not yet defined but the scientific council recommend to base the definition on a set of indicators: • The absolute number of cases included in the cluster and a very rapid, quasi-explosive dynamic.

https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	• The density of incidence in the district where the epicentre of the cluster is located, which makes it possible to normalise the number of cases to the population density. As an indication, the figures usually retained in particular abroad are 50 cases/100 000 inhabitants/week in the zone concerned. • The context in which this cluster occurs: company, school, EHPAD, precarious population • The fact that without additional resources we may soon be unable to follow the chains of contamination due to the rapid development of the epidemic in this sector.

3.6.3 In hospitals

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	The scientific council does not advise a systematic screening: only persons presenting symptoms of Covid-19 must be tested. A protocol for hospital preparation has been established to strengthen the response capacity of public and private hospital structures (e.g. development of software to determine the number of available and mobilisable beds in each region, managed by regional health authorities in order to know the capacity situation in real time, promoting hospital at home for patients under oxygen, organization of early transfer of patients to post-resuscitation rehabilitation care, organization of inter-regional transfers, etc.) but also of medico-social establishments in the event of the occurrence of a second wave. Particular attention is paid to the health care workers (mental support, respite period & holidays, training of all caregivers in the management of serious patients requiring intensive care and resuscitation, etc.) who have been in high demand over the last two months, as well as to the strategic stocks of drugs, materials and protective equipment that have been replenished.

3.6.4 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf and 03 June 2020 Coralie Gandre, Zeynep Or	Regional health agencies will be in charge of contact tracing when a case is detected in a collective place (school, nursing home…). Currently, the following protocol is in place (16 June): Tests must be proposed to: • New permanent and temporary professionals working in the institution, 2 days before their arrival in the institution; • The professionals of the institution upon return from leave; • To residents or employees presenting the slightest evocative symptom; • To any persons requesting admission to the facility, at the pre-admission stage (i.e. new residents). Additionally: • Barrier measures must continue to be respected; • The presence of a COVID-19 cell in each establishment must be maintained (monitoring of the situation, in liaison with the regional health agency and meeting at least once a week); • Individual rooms for the cases must be preserved;

https://www.covid19healthsystem.org/countries/france/livinghit.aspx?Section=1.4%20Monitoring%20and%20surveillance&Type=Section and https://solidarites-sante.gouv.fr/IMG/pdf/deconfinement-retour-normale-etablissements-hebergement-pa-covid-19.pdf	• Time slots for visits without appointment may be established (but respecting a secure circuit of visit and a physical distance with materialization, prohibiting the exchange of objects or goods, with a self-questionnaire. • The procedure of preventive confinement in the room is stopped (except for new admissions: 7 days). Other restrictions may also be gradually lifted (e.g. exits) depending on the context of each establishment. The scientific council has advised specific measures for nursing homes in case of scenario 3 of the epidemic (A diffuse and low-noise resumption of the epidemic): • A systematic testing, each week, for the whole personnel (caregivers and non-caregivers) of nursing homes, even if they have only a distant relationships with residents. Positive personnel (by definition asymptomatic) will be subject to a 7-day eviction from the test or an eviction of 7 days with at least 2 days of symptom-free if they become symptomatic. • A systematic testing of all residents if a positive case is detected (among the staff or the residents). • Family visits should be maintained, with a strict respect of barrier measures and if possible in ventilated areas or outdoors. • The potential staff reserves of these establishments should be assessed by region (or even at best by department). • The links with the reference hospital structures must be contractually reinforced to define the conditions of case management: transfer to the geriatric services, organisation of COVID- / COVID+ sectors, identification of downstream structures in post-hospitalisation, supply of medicines or medical devices, etc. A specific organisation must be anticipated under the responsibility of the hospitals and Regional Health Authorities.

3.6.5 In schools

Date report(ed) and reference	Statement / definition
8 June 2020, Ministry of education https://www.education.gouv.fr/coronavirus-covid-19-informations-et-recommandations-pour-les-etablissements-scolaires-les-274253, (last update 8 June 2020, accessed 11 June 2020).	No systematic screening. Regional health agencies will be in charge of contact tracing when a case is detected in schools. The modalities of identification and tracing of contacts and the modalities of eviction will be defined by the regional health authorities in collaboration with the academic authorities. Decisions to close a class, an entire level or the whole school may be taken by the latter.

3.6.6 Precarious populations

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	A protocol for populations in very precarious situations has been established in order to allow them to serenely have recourse to screening. Special assistance is offered to them so that they can adhere to the generalised testing policy. The measures concern: • Mobilization of all public and private accommodation solutions in order to increase access to accommodation allowing isolation in single rooms. • Organizing gathering points, providing water, food but also health and social support, masks and hydro alcoholic solutions, information on barrier measures, etc.), managed by the municipalities in collaboration with the regional health authorities and the associations. • Proactively inform this population and invite them for testing (e.g. in hosting structure), in collaboration with association specialized in precarious population and other professionals such as interpreters • Reducing the consequences of a positive result, for example by ensuring that, during the isolation period, their place in collective housing is retained, that all members of the household are taken care of (e.g. for single-parent families), that their animals are taken care of, and that a specific allowance is granted (for precarious people who cannot provide proof of a regular income allowing them to have access to other forms of compensation). • A prolongation of the specific rights acquired during the lock-down period (e.g. access to state medical assistance, postponement of procedures relating to residence rights).

3.7 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
02 June 2020 Scientific Council (n°7) https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf	One a whole, the Scientific Council stresses the need for clear, operational and partly territorialized governance. This governance should include scientific and health competences, but also interministerial and more broadly institutional competences. The association of civil society and economic actors is likely to strengthen its legitimacy and support for the measures envisaged in each scenario. Contact tracing is managed by regional authorities (regional health authorities), according to general rules determined at the national level.

4 RESULTS FOR GERMANY

4.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
5 May 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Ergaenzung_Pandemieplan_Covid.pdf?__blob=publicationFile	The country has a national COVID-19 pandemic plan which has been updated in March 2020. It is a document which summarizes the recommendations, handouts and preparations that have been made and adapted to the situation. It also gives an outlook on the actions to put in place in case the situation in Germany and other countries escalates.
6 April 202 https://www.spectator.co.uk/article/how-germany-has-managed-to-perform-so-many-covid-19-tests	This detailed response plan enabled the government to activate quickly, with no time wasted on disputes related to governance, accounting, or costs. Germany is a federal country and the responsibility for public health lies in the local public health authorities in 16 federal states and approximately 400 counties. The national Robert Koch institute is responsible for the prevention, control and investigation of infectious diseases. They conduct surveillance, risk assessments and epidemiological studies, as well as preparing national guidelines, strategy document and response plans. The states and counties adapt the national guidelines and recommendations to local needs. National authorities facilitate nationwide exchange and negotiate standards and common procedures.

4.2 Testing strategy

4.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
16 January 2020 https://www.charite.de/en/service/press_reports/artikel/detail/researchers_develop_first_diagnostic_test_for_novel_coronavirus_in_china/	Researchers from the German Center for Infection Research (DZIF) at Charité – Universitätsmedizin Berlin were among the first to developed a laboratory assay to detect the novel Chinese coronavirus. The assay protocol has been broadly used and has been published by WHO as a guideline for diagnostic detection. The fast testing capacity enabled Germany to quickly test all suspected cases from the start of the epidemic.
26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Massnahmen_Verdachtsf	Currently laboratory testing for SARS-CoV-2 should be performed for suspected cases according to the following criteria (12 May 2020): 1. Acute respiratory symptoms of any severity and / or Loss of smell / taste in ALL patients regardless of risk factors 2. Contacts of confirmed COVID-19 case up to max. 14 days before the onset of illness AND any symptoms compatible with COVID-19

all_Infografik_DINA3.pdf?__blob=publicationFile	3. Clinical or radiological evidence of viral pneumonia AND related to an accumulation of pneumonia in nursing home / hospital

4.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
16 June 2020 https://www.rnd.de/politik/was-kostet-ein-corona-test-preise-dauer-ablauf-so-funktioniert-der-test-auf-das-coronavirus-RB6MKQNM7VBKNM7A7YAYHKV4BQ.html 9 June 2020 https://www.bundesgesundheitsministerium.de/corona-test-vo.html 26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Vorl_Testung_nCoV.html https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Vorl_Testung_nCoV.html	Testing is performed by a medical doctor during a visit of the doctor at the patient's home, a referral to the hospital or during a special appointment to the family doctor's office. Patients who want to be tested can call their family doctor, the number 116 117 or the health department for more information. In a suspected SARS-CoV-2 patient, depending on the clinical situation, samples should be taken in parallel from the upper and lower airways if possible (observe protective measures). • Upper respiratory tract: ○ Nasopharynx smear or lavage ○ Oropharynx smear ○ Deep airways: • Broncho alveolar lavage ○ Sputum (produced or induced according to instructions ; observe occupational safety) ○ Tracheal secretion All samples should reach the laboratory as soon as possible after collection. The test should take place within 72 hours from collection and meanwhile it can be stored at 4 ° C, also during shipment. In the majority of cases the results of the testing are available within 24h.

4.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Vorl_Testung_nCoV.html	Antibody detection is primarily used for questions regarding the epidemiology of the infection. In the majority of patients, seroconversion takes place in the second week after the onset of symptom, therefore to determine seroconversion during an acute infection, serum should be taken approximately 14 days after infection. The sensitivity and specificity of the commercial antibody tests should be determined in dedicated studies and the serological test results must be interpreted taking into account the pre-test probability, the respective epidemiological situation and knowledge of the specificity/sensitivity values of the test system used. Various test formats (ELISA, CLIA) with different virus antigens (recombinant S or N proteins) are available to detect a previous SARS-CoV-2 infection, with which IgM, IgA, IgG or total antibodies can be detected. Due to low seroconversion

	rates in the early phase (weeks 1 to 2 after the onset of symptoms) of the infection, they are not recommended for acute diagnosis. In the event of a negative or questionable PCR test with symptoms that are still compatible with COVID-19, the finding of a seroconversion should give rise to a second PCR test. To date, there have been no systematic studies allowing an assessment of the antibody titers associated with protection against reinfection. The detection of SARS-CoV-2-specific antibodies does not exclude the fact that a patient might still be infectious. Protective titers are not yet known. The WHO currently recommends the use of rapid immuno-diagnostic tests only in the context of research projects.

4.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
24 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Testzahl.html 25 June 2020 https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/Ausgaben/26_20.pdf?__blob=publicationFile	So far, a total of over 200 laboratories have registered for the RKI test laboratory survey or in one of the other transmitting networks, and mostly transmit their numbers weekly. On week 25 there were 137 laboratories reporting SARS-CoV-2 data, with a capacity of 169 473 tests per day. It should be noted that the number of tests is not the same as the number of people tested, since the data may include multiple tests of patients.

4.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
	No specific information found.

4.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
8 June 2020 https://www.rki.de/SharedDocs/FAQ/NCOV2019/gesamt.html?nn=13490888 4 June 2020	The doctor who suspects that the patient has a disease with the novel coronavirus must report this to the local public health department in accordance with the Infection Protection Act. The laboratory, which detects the novel corona virus in a human being, must report the results to the local public health department. The notification to the local public health department needs to be done within 24h.

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Meldepflicht_Nichtnamentlich.html	COVID-19 cases that meet the Robert Koch Institute (RKI) case definition need to be transmitted electronically by the responsible health authorities to the responsible state authorities and from there to the RKI no later than the next working day. It is mandatory by law for all laboratories also to report all diagnosed SARV-CoV-2 cases to the national RKI. The reporting should be done through the electronic reporting system for infectious diseases Deutsche Elektronische Melde- und Informationssystem für den Infektionsschutz (DEMIS), which is still under development by RKI and the Ministry of Health. Results for negative tests also need to be reported to RKI.

4.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
16 June 2020 https://www.rnd.de/politik/was-kostet-ein-corona-test-preise-dauer-ablauf-so-funktioniert-der-test-auf-das-coronavirus-RB6MKQNM7VBKNM7A7YAYHKV4BQ.html	If the test is prescribed by a medical doctor the costs are covered by the health insurance or department of health. The doctor must also test all suspected cases, defined as: • Anyone who has had contact with a confirmed case within the last 14 days • Anyone who has been in the risk area within the last 14 days and has symptoms (from mild cold to pneumonia) • Anyone who has been in the risk area within the last 14 days or who has had contact with a person from the risk area (and has no symptoms). If the test is not prescribed by a doctor, the patient has to cover the cost.

4.3 Isolation strategies and monitoring of confirmed cases

4.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
June 2020 https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/2020-06-12_regulations_for_travels_new.pdf	People entering the Federal Republic of Germany by land, sea or air from any country or region outside of the Federal Republic of Germany and who have spent time in a risk area, are required to proceed directly to their own home, or other suitable accommodation, immediately after their arrival and remain there exclusively for a period of 14 days after their entry into the country.
6 May 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Quarantaene/Flyer.pdf?__blob=publicationFile	Quarantine of suspected cases, such as close contact to confirmed cases, is performed by local public health authorities and might slightly differ from one state to the other. The suspected cases are normally quarantined for 14 days and need to report daily to the contact tracer about their health status.

26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Kontaktperson/Management.html#doc13516162bodyText1	If the person was previously reported as a COVID-19 case, no quarantine is required, self-monitoring should be carried out and, if symptoms occur, immediate self-isolation and testing should take place. If the test is positive, the contact person becomes a case. With this, all measures should be taken as in other cases (including isolation).

4.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition
15 May 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Entlassmanagement.html#doc13671260bodyText2	All SARS-CoV-2 confirmed cases need to self-isolate themselves in their homes according to the criteria below. a. Without previous hospitalisation (mild course of the disease) • At least 14 days after the onset of symptoms AND • if free symptoms for at least 48 hours related to the acute COVID-19 disease (after consultation with medical care) Note: If the case still tests positive for SARS-CoV-2, the health department and the laboratory would need to consider each case separately. b. After previous hospitalisation (due to a severe course of the disease) • At least 14 days after discharge from the hospital after clinical improvement AND • if free of symptoms for at least 48 hours related to the acute COVID-19 disease (after consultation with medical care)

4.4 Contact tracing strategy

4.4.1 Contact definition

Date report(ed) and reference	Statement / definition
15 May 2020 https://www.sciencedirect.com/science/article/pii/S1473309920303145?via%3Dihub	Since the beginning of the COVID-19 epidemic in Germany, the local health authorities, in collaboration with the Robert Koch institute have done an extensive work in trying to track and trace all possible contacts of a confirm case, assess, quarantine, and monitor them.
26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neua	A contact is a person who was in contact with a confirmed case from two days before the symptoms onset of the confirmed cases. The end of the infectious period is currently not clear. There are three categories of contact:

rtiges_Coronavirus/Kontaktperson/Management.html#doc13516162bodyText1	1. Category I: Higher risk of infection • People with cumulative face-to-face contact for at least 15 minutes, for example during a conversation. This includes, for example, people from communities in the same household. • People with direct contact with secretions or body fluids, in particular with respiratory secretions of a confirmed COVID-19 case, such as kissing, contact with vomit, mouth-to-mouth ventilation, coughing up, etc. • People who have been exposed to aerosol-forming measures or aerosols (e.g. celebrating, singing together or playing sports indoors) • Medical personnel in contact with the confirmed COVID-19 case as part of care or medical examination (≤ 2m), without protective equipment used. • Contact persons of a confirmed COVID-19 case on the plane: ○ Passengers who were in the immediate seat of the confirmed COVID-19 case, regardless of flight time. If the COVID 19 case was in the aisle, the passenger in the same row across the aisle does not count as a category I contact person, but as a category II contact person. ○ Crew members or other passengers, provided that one of the other criteria applies (e.g. a longer conversation, etc.). 2. Category II: Lower risk of infection • People who were in the same room as a confirmed COVID-19 case, e.g. classroom, workplace, but had no cumulative face-to-face contact with the COVID-19 case for at least 15 minutes. • Family members who did not have face (or speech) contact for at least 15 minutes. • Medical personnel who were in the same room as the confirmed COVID-19 case without the use of adequate protective equipment, but who never fell short of a distance of 2 meters. • Contact persons of a confirmed COVID-19 case on the plane: ○ Passengers who sat in the same row as the confirmed COVID-19 case or in the two rows in front of or behind it, regardless of flight time, but not in Category I. 3. Category III • Medical personnel with contact ≤2 m (e.g. case in the context of nursing or medical examination), if adequate protective clothing was worn during the entire time of contact according to category I. • Medical personnel with contact >2m without protective equipment, without direct contact with secretions or excretions of the patient and without aerosol exposure

4.4.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
26 June 2020 https://www.aerzteblatt.de/nachrichten/sw/COVID-19?s=&p=1&n=1&aid=213694 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Kontaktperson/Management.html#doc13516162bodyText1	The contact tracing is a responsibility of the states and each can choose the best approach to deal with it. The local public health offices have one contact tracing team of five people per 20,000 inhabitants and are supported by mobile teams of scouts (medical students). Management of contacts 1. Category I • Determination, registration by name and notification of the telephone number of the contact persons of the health department. • Informing contact persons about the COVID-19 clinical picture, possible disease courses and transmission risks. • Reduction of contacts with other people, segregation at home (possibly in another facility, considering the possibilities and after risk assessment by the health authority) • Generally in the household, if possible, separate the contact person from other household members in terms of time and space. A “time separation” can be done, for example, by not eating the meals together, but one after the other. A spatial separation can take place, for example, by the contact person being in a different room than the other household members. • Frequent hand washing, compliance with a cough label. • Health monitoring until the 14th day after the last contact with the confirmed COVID-19 case in the following ways: • If a contact person becomes symptomatic within 14 days of the last contact with a confirmed COVID-19 case and if the symptoms are compatible with a SARS-CoV-2 infection, they are considered suspect and a further diagnostic clarification should be carried out. The following procedure is recommended: ○ Immediate contact the health department for further diagnostic clarification and discussion of the further procedure. ○ Consultation with the health department, medical consultation, including diagnostics using a suitable airway test in accordance with the recommendations of the RKI on laboratory diagnostics (www.rki.de/covid-19-diagnostik) and, if necessary, therapy. ○ Isolation according to the health department. This can include a home isolation during further diagnostic clarification in compliance with infection hygiene measures or isolation in a hospital. Continuation of the "diary". • Asymptomatic contact persons should be tested for the early detection of pre- or asymptomatic infections. The test should be carried out as early as possible on day 1 of the investigation in order to send possible contacts of the positive asymptomatic contact persons to the quarantine in good time, and additionally 5-7 days after the first exposure, since then the highest probability for a pathogen detection is. It should be emphasized that a negative test result does not replace health monitoring and does not shorten the quarantine time. 2. Category II • If it is considered useful, according to the risk assessment of the health department, give optional: ○ Give optional information on COVID-19, especially on contact reduction and how to deal with symptoms. • Specific for contacts of a confirmed COVID-19 case on the plane:

	○ Give information on COVID-19, especially on contact reduction and how to deal with symptoms. • The measures for medical personnel correspond to Category I (e.g. suspected aerosol exposure) or Category III, depending on the assessment of the exposure risk by the health authority 3. Category III • Daily central documentation of the results of self-monitoring for symptoms and, if applicable, findings (test results) from the day of the first contact until the 14th day after the last (potentially associated with a transmission) contact with patients with confirmed COVID-19. • In the event of symptoms (including unspecific general symptoms), immediate release from work, interviewing employees about possible exposure situations (e.g. problems with the use of PPE), reporting to the health authority and isolation of those affected until diagnostic clarification.

4.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Kontaktperson/Management.html#doc13516162bodyText1	The testing for contacts: 1. Category I ○ Test as soon as possible, also asymptomatic contact persons, i.e. on day 1 after the determination and additionally 5–7 days after the first exposure 2. Category II ○ Test only symptomatic contact person 3. Category III ○ Test only symptomatic contact person

4.4.4 Contact tracing Apps

Date report(ed) and reference	Statement / definition
17 April 2020 https://corona-datenspende.de/#funktion	In April 2020 the Robert Koch Institute released the Corona-Datenspende (Corona Data Donation) smartwatch. It is a smartwatch that associated with a smartphone can measure physical activity and heart rate data which can be associated with a postal code. The idea was to measure the movement and wellbeing of people for potential COVID-19 symptoms. The app installation was voluntary and the data collected through it are being analysed by RKI.
26 April 2020 https://www.reuters.com/article/us-health-coronavirus-europe-tech/germany-flips-on-smartphone-	Subsequently the government had the idea of a centralized contact tracing application which would allow health authorities to alert others who may have come into contact with people who were confirmed positive. This proposal was not accepted to privacy concern.

contact-tracing-backs-apple-and-google-idUSKCN22807J 16 June 2020 www.coronawarn.app	Finally, on June 16, the federal government launched the new Corona-Warn-App. The app helps to notify users as quickly as possible if they have been exposed to a person diagnosed with COVID-19 and to trace and identify infection chains of COVID-19. The app installation is totally voluntary. It is based on technologies with a decentralized approach, notifying users if they have been exposed to COVID-19 via Bluetooth and enabling them to retrieve test results electronically. The Bluetooth technology measure the distance and duration of the encounter between people who have installed the app. The smartphones "remember" encounters if the criteria determined by the RKI on distance and time are met (people who have been in the vicinity of the infected person for a period of at least 15 minutes within the last 14 days). The devices then exchange temporary encrypted random IDs. If people using the app test positive for COVID-19, they can inform other users on a voluntary basis. Then the random IDs of the person diagnosed with COVID-19 are made available to all people who are using the Corona-Warn-App. The interfaces are provided by Google and Apple. The app must therefore be downloaded in the official Google and Apple app stores and only runs on smartphones which have at least Android 6 or iOS (13.5). The app was developed by SAP and Deutsche Telekom at a cost of around EUR 20 million and overseen by cyber security experts from German research institutes. The data is automatically deleted after two weeks. If a testing lab supports the electronic process, users can use the QR code they received during the test to retrieve their results. In case of a positive test result, a specially generated QR code with the test result is sent to that person. This code then needs to be scanned into the person's smartphone. Upon this, an alert can be transmitted by the phone by sending anonymized data of people who have come into contact with the infected person to a central server. A push message is sent automatically to all those people, i.e., people who have been in the vicinity of the infected person for a period of at least 15 minutes within the last 14 days. People who receive a warning will obtain recommendations on how to proceed: for example, to have a test themselves and putting themselves in quarantine. However, not all laboratories and public health offices are equipped with the necessary digital infrastructure to send test results to the system and generate QR codes. Hence, people who have been tested by such laboratories and found to be infected must contact a telephone hotline. Those calling the hotline will have to answer test questions to ensure that they have indeed been tested positive. However, questions and answers must not allow any conclusions to be drawn about the Germany - Monitoring and surveillance Page 13/40 person's identity. The call canter is meant to be able to handle about 1,000 calls per day.

4.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
26 June 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Kontaktperson/Management.html#doc13516162bodyText1	Monitoring of Contacts 1. Category I • Health monitoring until the 14th day after the last contact with the confirmed COVID-19 case: • Measurement of the body temperature twice a day. • Keeping a diary regarding symptoms, body temperature, general activities and contacts with other people: • Daily information from the health office on domestic quarantine and health status. 2. Category II • No monitoring

	3. Category III • Daily self-monitoring • Daily central documentation of self-monitoring by hygienic staff • If the protective measures are impaired: notification to the company doctor and the hospital hygienist, information from the GA; Measures see Contact persons I If the patients develops symptoms: • Contact immediately the health authority • Notify the contact persons

4.6 Early case detection methods

4.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
15 May 2020 https://www.rki.de/SharedDocs/FAQ/NCOV2019/gesamt.html?nn=13490888	The RKI continuously analyses various data sources in order to be able to record and assess the situation in Germany as precisely as possible. This includes, among other things, the official reporting data, but also information from existing surveillance systems (e.g. on influenza) and from projects and studies that are being created as part of the COVID-19 pandemic - also in cooperation with other institutions. The total number of laboratory tests carried out in Germany on SARS-CoV-2 - for which there is no obligation to report - is also recorded. All information is assessed and published in the daily situation report.

4.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
3 June 2020 https://www.rki.de/SharedDocs/FAQ/NCOV2019/gesamt.html?nn=13490888	COVID-19 outbreaks have so far been observed in old people's and nursing homes, hospitals, meat processing companies, community accommodation (e.g. asylum seeker accommodation) and in church settings. Outbreaks are examined by the responsible health authority, supported if necessary by the higher regional authorities or the Robert Koch Institute. The health authorities therefore look specifically for cases of illness in the vicinity of the sick (active case finding) in order to identify them as early as possible and to interrupt infection chains, but also to estimate the extent of the infection process. In the context of SARS-CoV-2 outbreaks, it is important to also test asymptomatic people for SARS-CoV-2. In addition, all data must be systematically recorded in order to identify correlations, understand infection chains and take suitable infection protection measures (e.g. isolating sick people and quarantining close contact persons).

4.7.1 In hospitals

Date report(ed) and reference	Statement / definition
9 June 2020 https://www.bundesgesundheitsministerium.de/corona-test-vo.html	All patients being admitted to hospitals will be tested for SARS-CoV-2 beforehand. There are guidelines on the management of Outbreaks in healthcare setting but no information on early case detection methods.
17 April 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Management_Ausbruch_Gesundheitswesen.html	If SARS-CoV-2 is detected in patients or staff in an area that is not intended for COVID-19 patients, immediate action must be taken (proof is sufficient!). A common approach in coordination with the health department is important: cases, contacts and suspected cases, as well as non-cases, should be treated in three spatially and personnel-separate areas: COVID-19 area, suspected case area, NOT-COVID-19 area. In order to be able to achieve this goal of separation promptly, appropriate plans and requirements should now be created in all health and care facilities. Personnel plans must be adjusted according to the areas, the staff should be permanently assigned to individual areas. In facilities with frequent new admissions, an additional spatial separation is necessary, because new admissions cannot be classified reliably at first (fourth area = new admissions). Transit zones as a transition between the areas must be observed with as little crossing of the paths as possible.

4.7.2 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
27 May 2020 https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Pflege/Dokumente.html	Very specific recommendations and guidelines are provided on how to deal with an outbreak in nursing homes, for residents, staff and visitors. Nevertheless no information is provided if there is an early case detection method for nursing homes.
9 June 2020 https://www.bundesgesundheitsministerium.de/corona-test-vo.html	A ministerial decree has recommended that serial testing campaigns can be carried out in nursing homes, schools, day-care centres, rehabilitations facilities, dialysis centres, asylum seekers' homes or prisons if there has been a case, in order to identify chain of transmission and interrupt it at an early stage. Nursing homes can also be tested regardless of cases. The responsible health authority decides whether such a series test needs to be carried out.

4.7.3 In schools

Date report(ed) and reference	Statement / definition
9 June 2020 https://www.bundesgesundheitsministerium.de/corona-test-vo.html	No specific strategy/tool for early case detection A ministerial decree has recommended that serial testing campaigns can be carried out in nursing homes, schools, day-care centres, rehabilitations facilities, dialysis centres, asylum seekers' homes or prisons if there has been a case, in order to identify chain of transmission and interrupt it at an early stage.

4.7.4 Precarious population

Date report(ed) and reference	Statement / definition
9 June 2020 https://www.bundesgesundheitsministerium.de/corona-test-vo.html	No specific strategy/tool for early case detection A ministerial decree has recommended that serial testing campaigns can be carried out in nursing homes, schools, day-care centres, rehabilitations facilities, dialysis centres, asylum seekers' homes or prisons if there has been a case, in order to identify chain of transmission and interrupt it at an early stage.

4.8 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
23 May 2020 https://www.bundesgesundheitsministerium.de/covid-19-bevoelkerungsschutz-2.html	The overall national strategy is coordinated from the Robert Koch Institute (RKI) in collaboration with the separate states. Founding for testing is provided, with a decision of the Ministry of health, through funds released of the national statuary health insurance. Testing and tracing is conducted locally with local capacity. The testing by general practitioners or hospital, and the contact tracing by local field teams which report the local health authorities. Testing data are transmitted nationally to the RKI which finally produces and shares national estimates, while contact testing data are handles locally. The RKI handles also the national data of the tracing application.

5 RESULTS FOR ITALY

5.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73981&parte=1%20&serie=null	Due to COVID-19 emergency Italy has published a legal decree that defines the surveillance activities to be put in place in order to monitor the health risk in the reopening Phase. The decree lists and explains the indicators that need to be used to fast detect an increasing transmission rate of the coronavirus in the community, long term facilities, collectivities and hospitals. The monitoring system evaluates the risk linked to the probability of infection/transmission and the impact or severity with particular focus on people over 50 years of age. The monitoring of these indicators should allow early detection of transmission hotspots and allow a fast reaction of the authorities to contain it and prevent further spread of the virus. The indicators are grouped into three classes: 1. process indicators on monitoring capacity; 2. process indicators on diagnostic capacity, research and management of contacts; 3. result indicators on transmission stability and resilience of health services. They include: 1.1 Number of symptomatic cases per month in which the symptom onset date is reported / total of symptomatic cases reported to the surveillance system in the same period. 1.2 Number of cases reported per month with a history of hospitalisation (in departments other than ICU) indicating the date of hospitalisation / total of cases with history of hospitalisation (in departments other than ICU) notified to the surveillance system in the same period. 1.3 Number of cases reported per month with history of transfer / hospitalisation in the intensive care unit (ICU) which indicates the date of transfer or hospitalisation in ICU / total of cases with history of transfer / hospitalisation in intensive care notified to the surveillance system during the same period. 1.4 Number of cases reported per month in which the municipality of residence or residence is reported / total of cases reported to the surveillance system in the same period. 1.5 Number of checklists administered weekly to residential social-health facilities (optional). 1.6 Number of residential social-health structures responding to the checklist weekly with at least one problem encountered (optional). 2.1 Percentage of positive swabs excluding as far as possible all screening activities and "re-testing" of the same subjects, overall and by macro-setting, per month. 2.2 Time between start date of symptoms and date of diagnosis. 2.3 Time between symptom start date and isolation date (optional). 2.4 Number, type of professional profiles and person-time dedicated in each territorial service to contact-tracing.

	2.5 Number, type of professional profiles and person- time dedicated in each territorial service to the activities of collection/ sending to the reference laboratories, and monitoring of close contacts and cases placed in quarantine and isolation respectively. 2.6 Number of confirmed cases of infection in the region for which a regular epidemiological investigation was carried out with tracing of close contacts / total of new confirmed cases of infection. 3.1 Number of cases reported in the last 14 days. 3.2 Rt calculated on the basis of the integrated surveillance (two indicators are used, based on the beginning of symptoms and the date of hospitalisation). 3.3 Number of cases reported to the sentinel surveillance COVID-net per week (optional). 3.4 Number of cases by diagnosis date and symptoms onset date reported to COVID-19 integrated surveillance per day. 3.5 Number of new clusters (2 or more epidemiologically linked cases or an unexpected increase in the number of cases in a defined time and place) 3.6 Number of new confirmed cases by Region not associated with known transmission chains. 3.7 Number of accesses to the emergency unit with ICD-9 classification compatible with syndromic panels attributable to COVID-19 (optional). 3.8 Occupancy rate of total ICU beds for COVID-19 patients. 3.9 Bed occupancy rate for COVID-19 patients by province For each indicator, a threshold condition is defined as well as an alert condition, and the source of data to be used.

5.2 Testing strategy

5.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
3 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73799&parte=1%20&serie=null	The diagnosis and confirmation of COVID-19 is done through RT-PCR testing of the virus SARS-CoV-2, in regional laboratories. A test is recommended for the following suspected cases: • A person with an acute respiratory infection AND without another etiology to explain the cause AND history of travel in countries/areas in which local transmission has been reported in the previous 14 days before symptoms onset OR • A person with any acute respiratory infection AND had contact with a probable or confirmed COVID-19 case in the 14 days before symptoms onset. OR • A person with a severe acute respiratory infection (SARI) AND need for hospitalisation AND without another etiology Priority of testing is given the symptomatic and paucisymptomatic cases and their symptomatic contacts, seen in the 48h prior the onset of symptoms.

	If the resources are adequate all the patients with respiratory infection should be tested. In case of need, for example samples to be analyzed accumulate delays in the response, lack of reagents, impossibility of safe storage of samples, overload working of laboratory personnel, it is recommended to apply, in carrying out the tests diagnostic, the priority criteria listed below: • Hospitalised patients with severe acute respiratory infection (SARI) • All cases of acute respiratory infection hospitalised or living in nursing homes and other long-term care facilities • Health workers exposed to greater risk, operators of symptomatic essential public services, even if mildly affected symptomatology to decide the possible suspension from work; • Operators, although asymptomatic, in nursing homes and other residential facilities for elderly • People at risk of developing a severe and fragile form of the disease, such as older people with comorbidities • First symptomatic individuals within closed communities
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	RT PCR test is done in all cases and contacts developing symptoms, including mild symptoms, and in asymptomatic contacts at the end of quarantine whenever possible. Two RT PCR tests are performed after clinical recovery, before discharge. In case of outbreaks in hospitals, long-term residential facilities and other residential facilities for old people, all related patients and health staff are tested.

5.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
2 July 2020 http://www.salute.gov.it/portale/malattieInfettive/dettaglioFaqMalattieInfettive.jsp?lingua=italiano&id=230 3 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73799&parte=1%20&serie=null 29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno	If a person has flu symptoms or thinks they might be at risk of infection, they should stay at home, not go to the emergency room or the doctor's surgery but call the family doctor, paediatrician or the 'guardia medica' (out-of-hours primary care service). Alternatively, they can also call the regional information hotline or the Covid-19 information line at the number 1500. PCR testing in public health facilities and laboratories can be performed if only prescribed by a medical doctor or by a hospital. • The test is a single nasopharyngeal and oropharyngeal swab for each patient. • Multiple swabs from a single patient should be combined in a single diagnostic test. • Patients who have already been confirmed positive should not undergo further diagnostic tests for COVID-19 until the time of clinical healing which must be supported by the absence of symptoms and negative nasopharyngeal swab repeated twice at least 24 hours apart before discharge. • An indeterminate test in the presence of characteristic symptoms of COVID-19 must be considered as a case of COVID-19. • Priority is given to tests of healthcare workers, who should be communicated within a maximum of 36 hours. The Department of Prevention provides for the execution of diagnostic tests.

=2020&codLeg=74178&parte=1%20&serie=null	

5.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
3 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73799&parte=1%20&serie=null	Serological tests are very important in research and in epidemiological evaluation of the viral circulation, but they are not used for diagnosis. The qualitative result obtained on a single serum sample is not sufficiently reliable for a diagnostic evaluation, since the detection of the presence of antibodies through the use of rapid tests is not however indicative of an acute infection in progress, and therefore of the presence virus in the patient and risk associated with its spread in the community. In addition, for reasons of possible cross-reactivity with other related pathogens such as other human coronaviruses, detection of antibodies may not be specific to SARS-CoV2 infection. Finally, the absence of detection of antibodies (not yet present in an individual's blood due to the delay that physiologically connotes a humoral response compared to the viral infection) does not exclude the possibility of an infection in progress in the early or asymptomatic and relative phase risk of contagiousness of the individual.
6 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74021&parte=1%20&serie=null	For serological tests, it is recommended to use CLIA and/or ELISA tests with a specificity not less than 95% and sensitivity lot less than 90%. Serological tests (Antibody tests) cannot be used for replacing diagnostic molecular tests.

5.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
3 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73799&parte=1%20&serie=null	Italy has a capacity of 152 laboratories able to test for SARS-CoV-2. As of 1st July 2020, there is a National Reference Laboratory (National Institute of Health) and 238 laboratories designated at regional level for performing COVID-19 RT-PCR.
29 June 2020 https://lab24.ilsole24ore.com/coronavirus/en/	The number of daily tests is almost around 80 000 per day for the whole country. The regional distribution is different for each region.

5.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
	No specific information found Most probably the results are communicated to the patient from their family doctor who prescribed the test.

5.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
27 February 2020 http://www.trovanorme.salute.gov.it/norme/dettaglioAtto?id=73469 9 March 2020 https://www.epicentro.iss.it/coronavirus/pdf/informazioni-privacy-iss-sorveglianza-integrata-covid-19.pdf 3 July 2020 http://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovoCoronavirus.jsp?area=nuovoCoronavirus&id=5351&lingua=italiano&menu=vuoto	The Order of Chief of Civil protection Department entrusts epidemiological and microbiological surveillance to the National Institute of Health and the surveillance of clinical features to the National Institute of Infectious Diseases in collaboration with the National Institute of Health. The country has set up a new national and integrated surveillance system in order to record the COVID-19 information, since the beginning of the pandemic. In Italy, a surveillance system on the new coronavirus has been active since the beginning of the pandemic. Monitoring of the epidemic of Covid-19 cases in Italy is carried out through two daily data flows: • the flow of aggregate data sent by the Regions coordinated by the Ministry of Health (first with the sole support of Civil Protection) and from 25 June 2020 also with the support of the national Institute of Health, to collect timely information on the total number of positive tests, deaths, hospitalisations in hospital and ICU admissions in every Province of Italy; • the flow of individual data sent by the Regions to the national Institute of Health (Integrated surveillance Covid-19, ordinance 640 of the Civil Protection of 27/2/2020), which also includes demographic data, comorbidities, clinical status and its evolution over time, for a more accurate analysis. The system is an online platform based on electronic questionnaires, which collects and processed the following categories of data: demographics and health data of the subjects positive for COVID-19, data on home and residence, laboratory information (date of collection and the laboratory that performed it), information on hospitalisation (date of hospitalisation, hospital structure and ward) and on the clinical status (synthetic indicator of the severity of the symptoms), the presence of certain risk factors (basic chronic diseases) and the final outcome (healed or deceased and related dates). From 25 June the data sheet with the daily update of the data has been integrated with the "cases identified by the diagnostic suspect" (swab positive cases emerging from clinical activity) and "cases identified by screening activities" (investigations and tests, planned to national or regional level, who diagnose positive swab cases). All data can also be consulted on the interactive map (dashboard) of the National Department of Civil Protection.

5.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
3 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73799&parte=1%20&serie=null 12 May 2020 https://cdn.dday.it/system/uploads/asset/file/141/Delibera_Regione_Lombardia.pdf	Testing can be performed only if prescribed therefore it is reimbursed from the national health system. People can also refer to private laboratories to test for SARS-CoV-2, and in that case they would need to cover the price of the test. Positive tests performed in private laboratories need to be communicated to the local health authority which would need to put in place the same isolation and contact tracing measures that apply to cases detected by public health laboratories.

5.3 Isolation strategies and monitoring of confirmed cases

5.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
7 March 2020 https://www.epicentro.iss.it/coronavirus/pdf/rapporto-covid-19-1-2020.pdf 29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	The types of subjects that must be placed in quarantine at home for 14 days and are monitored daily at home (or in a dedicated facility in case of inadequate domicile) are: 1. Close case contacts (see definition below) 2. Patients who are discharged from the hospital clinically cured but still COVID-19 positive 3. Persons arriving in Italy from third countries (all countries except: a) Member States of the European Union; b) States parties to the Schengen Agreement; c) United Kingdom of Great Britain and Northern Ireland; d) Andorra, Monaco; e) Republic of San Marino and Vatican City State)

5.4.1 Confirmed cases

Date report(ed) and reference	Statement / definition
30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	All confirmed cases need to be isolated until the end of the symptoms and after two sequential negative tests 24 hours apart from each other.

5.5 Contact tracing strategy

5.5.1 Contact definition

Date report(ed) and reference	Statement / definition
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	A COVID-19 contact is any person exposed to a probable or confirmed COVID-19 case in a span of 48 hours before, up to 14 days after, the onset of symptoms or until the time of diagnosis and isolation of the case. If the case does not show symptoms, the time span is to be calculated from 48 hours before sample collection instead of symptoms onset. A Close contact (high risk exposure) is: • a person living in the same house as a COVID-19 case; • a person who has had direct physical contact with a COVID-19 case (eg handshake); • a person who has had unprotected direct contact with the secretions of a COVID-19 case (for example, touching used handkerchiefs with bare hands); • a person who has had direct contact (face to face) with a COVID-19 case, at a distance of less than 2 meters and at least 15 minutes; • a person who has been in a closed environment (for example classroom, meeting room, hospital waiting room) with a COVID-19 case in the absence of suitable PPE; • a healthcare professional or other person who provides direct assistance to a COVID-19 case or laboratory staff involved in handling samples of a COVID-19 case without using the recommended PPE or by using unsuitable PPE; • a person who has travelled sitting in a train, plane or any other form of transportation within two places in any direction compared to a COVID-19 case; travel companions and staff assigned to the plane / train section where the index case was sitting are also close contacts. The epi link has to have occurred within a period of 14 days before symptoms onset.

5.5.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	The Regions and Autonomous Provinces, through the local health structures, are responsible for contact tracing activities - epidemiological surveillance and active contact surveillance. These activities are entrusted to the Prevention Department of the Local Health Authority, which can make use of the collaboration of other recruited personnel. The key stages following the identification of a confirmed or probable case are described below. 1. Interview with the index case The Prevention Department interviews the index case to collect information on clinical history and possible contacts. This should be done through a phone call where possible. If the cases are hospitalised and unable to cooperate, hospital staff or the attending physician can collect the information directly from family members or caregivers. 2. Identification and list of close contacts The Prevention Department identifies close contacts (personal data, address, telephone number) and lists them in a database. For contacts: residents / domiciled in localities belonging to other ASLs of the same Region, the information is communicated within the regional circuit by the ASL which identifies the case to the ASL of residence / domicile, or on the basis of any regional operational indications; residents / domiciled outside the Region, the information must be communicated by the regional Health Authority to identify the case to the Health Authority of the Region or Autonomous Province of residence / domicile and to the Ministry of Health, General Directorate of Health Prevention - Office 5; residents / domiciled abroad, the information must be communicated by the Regional Health Authority to the Ministry of Health - Directorate General for Health Prevention - Office 5, which will inform the State involved, through the platform of the European Commission EWRS - "Early Warning Response System" or through the network of "National Focal Points" (NFP) provided for by the International Health Regulations (IHR 2005). In the collection of information, attention must be paid to the fact that the contact belongs to one of the groups at risk of developing serious forms of COVID-19 and to the work carried out, such as assistance to the elderly, immunocompromised people and other vulnerable populations. 3. Information/indications and surveillance The Department of Prevention provides clear information and indications, also in writing, on the precautionary measures to be implemented and any general educational documentation regarding SARS-CoV-2 infection, including the methods of transmission, the prophylaxis interventions that are necessary (active surveillance, quarantine, etc.), the possible clinical symptoms and instructions on the measures to be implemented in the event of the onset of symptoms.

5.5.3 Testing of contacts

Date report(ed) and reference	Statement / definition
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	The Prevention Department monitors the evolution of the clinical situation of the contacts and carries out diagnostic tests in those who develop symptoms, even mild ones, compatible with COVID-19. If the test on the exposed person is positive, the case is notified and the contact search is started. For the re-entry into the community we will have to wait for clinical recovery (i.e. the total absence of symptoms). The confirmation of healing needs two negative swabs 24 hours apart, otherwise fiduciary isolation will continue. If the test is negative, the contact continues the fiduciary isolation for 14 days after the last exposure and the test is repeated before re-entering the community. It is reiterated that in the event of a negative test for a patient highly suspected of being infected with SARS-CoV-2, it is recommended to repeat the collection of biological samples at different times and from different sites of the respiratory tract. If possible, asymptomatic contacts should be tested at the end of the quarantine. In the case of outbreaks involving hospitals, long-term care, RSA or other residential structures for the elderly, the test must be offered to the residents and to all the health workers involved.

5.5.4 Contact tracing Apps

Date report(ed) and reference	Statement / definition
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	In the COVID-19 emergency context, Italy has chosen the IMMUNI application as an instrument to assist traditional contact tracing. The adoption of a single national application for contact tracing, also interoperable at European level, has the objective of identifying individuals increasingly exposed to SARS-CoV-2 in an ever more complete way and, through health surveillance measures, help to break the transmission chain. The application is based on the voluntary installation and its operation will cease as soon as the emergency phase has ended, with the elimination of all data generated during its operation. The main features of the App are: to send a notification to people who may have been exposed to a COVID-19 case - close contacts - with indications on pathology, symptoms and public health actions to be implemented; invite these people to get in touch with the general practitioner or pediatrician, explaining that they have received a notification of close contact of COVID-19 from Immuni. To achieve these goals, the app uses proximity tracking (also known as contact tracking) based on Bluetooth Low Energy technology, without resorting to geolocation. When a user installs Immuni on his smartphone, the app begins to exchange anonymous identifiers (random codes) with other devices that have installed the same app. These are anonymous codes that do not allow to trace the corresponding device, much less to the identity of the person, in full compliance with the recommendations issued by the European Commission on April 16, 2020 regarding the proximity tracing apps.

	The Immuni App, coupled with the traditional system is intended to facilitate the tracing of contacts, provides for close collaboration between citizens, General Practitioners, Pediatricians and the Departments of Prevention. Personal data will be used for the sole purpose of alerting people who have come into close contact with people who have resulted positive Covid-19 and protecting their health. The same information, in aggregate and anonymous form, may be used for public health, prophylaxis, statistics or scientific research purposes.

5.6 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	The Department of Prevention provides clear information and indications, also in writing, on the precautionary measures to be implemented and general health education materials regarding SARS-CoV-2 infection, including methods of transmission, prophylaxis interventions (active surveillance, quarantine, etc.), clinical symptoms and instructions on the measures to be implemented in the event of the onset of symptoms. In particular, the public health operator of the territorially competent Prevention Department: prescribes the quarantine for 14 days after the last exposure, and informs the General Practitioner or Pediatrician from whom the contact is assisted for the purposes of Social Security certification; carries out active surveillance daily (via phone calls, e-mails or text messages) to obtain information on the clinical conditions of the contact. Close contacts of COVID-19 cases must comply with the following measures: absolute ban on mobility from one's home and of social contacts. The person subjected to home insulation must remain in a dedicated room with good ventilation, preferably with a dedicated bathroom, and limit movement to other common areas of the home as much as possible. In the presence of other people, a distance of at least one meter must be maintained; remain reachable for active surveillance activities; measure body temperature twice a day and in any case of perceived increase in temperature; wash hands frequently, in particular, after any contact with body fluids (respiratory secretions, urine and feces); in the event of onset of symptoms or signs compatible with COVID-19, even mild, in particular fever or at least one of pharyngodynia, cough, runny nose / nasal congestion, breathing difficulties, myalgias, anosmia / ageusia / dysgeusia, diarrhea, asthenia must: 1) immediately call the general practitioner or pediatrician and the Prevention Department; 2) self-isolation, i.e. staying at home in a room with a closed door, ensuring adequate natural ventilation; 3) if symptoms allow, wear a surgical mask when the first symptoms appear; 4) coughing and sneezing directly onto a tissue or in the crease of the elbow. The Department of Prevention provides contacts with surgical masks and thermometers, if they do not have them. Home isolation may require social support measures for the proper conduct of the quarantine. It must be carried out through the collaboration of the territorially competent public health services, the social services of the municipal administrations, the voluntary associations of the territory. Some functions must be guaranteed, such as support for the needs of daily life for people who live alone and

	without caregivers (support of the family and neighborhood network) and psychological support. Where the appropriate conditions for quarantine / isolation cannot be guaranteed at home, it is recommended to propose the transfer to specifically dedicated residential structures with adequate medical support for monitoring and assistance. At the end of the surveillance period, the Prevention Department communicates to the contacts the outcome of the surveillance.

5.7 Early case detection methods

5.7.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73981&parte=1%20&serie=null	The legal decree to contain the second Phase of the epidemic, based on the integrated COVID-19 surveillance, will monitor the daily and weekly number of tests and the number of SARS-CoV-2 cases. Information on the date of disease diagnosis and the symptoms onset will be collected. Evaluation of the number of cases will also be done for the last 7 or 14 days in order to monitor the trend of the infection over time.

5.7.2 Identification of clusters

Date report(ed) and reference	Statement / definition
30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73981&parte=1%20&serie=null	In the integrated COVID-19 surveillance system, together with the number of new cases, also their geographical distribution will be monitored. Investigations about the possible geographical and/epidemiological epi-link of cases will take place in order to establish if there is a possible outbreak ongoing. A cluster is defined as 2 or more epidemiologically linked cases or an unexpected increase in the number of cases in a defined time and place.

5.7.3 In hospitals

Date report(ed) and reference	Statement / definition
30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73981&parte=1%20&serie=null 29 May 2020	The integrated COVID-19 surveillance system will contain information regarding the number of accesses to the emergency unit with ICD-9 classification compatible with syndromic panels attributable to COVID-19 to monitor its evolution and early detect an increase in the incidence. In case of outbreaks in hospitals, long-term residential facilities and other residential facilities for old people, all related patients and health staff are tested.

http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	

5.7.4 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
24 March 2020 https://www.epicentro.iss.it/coronavirus/sars-cov-2-survey-rsa 30 April 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=73981&parte=1%20&serie=null 29 May 2020 http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74178&parte=1%20&serie=null	A national survey was conducted by the National Institute of Health (ISS) on the nursing homes, in order to report the characteristics of the structure, the number of staff, residents, capacity, number or cases, deaths and several indicators. The survey was completed and the last report refers to May 5, 2020. Within the national monitoring system, two indicators are dedicated to long-term residential facilities: • Number of checklists administered weekly to residential social-health facilities (optional). • Number of residential social-health structures responding to the checklist weekly with at least one problem encountered (optional). For the first indicator, results should have a positive trend for at least 50% of facilities in each Region; for the second indicator, the value should be <30% with a positive trend. In case of outbreaks in hospitals, long-term residential facilities and other residential facilities for old people, all related patients and health staff are tested.

5.7.5 In schools

Date report(ed) and reference	Statement / definition
	Schools are still closed and will reopen in September.

5.7.6 Precarious population

Date report(ed) and reference	Statement / definition
	No specific information found

5.8 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
26 June 2020 http://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovoCoronavirus.jsp?area=nuovoCoronavirus&id=5351&lingua=italiano&menu=vuoto	The testing and tracing are conducted a local level by the local public health authorities which do it with teams on the field. The data is collected in different formats and is used at a local level to manage the situation and shared with national coordinating bodies. The flow of aggregate data sent by the Regions is coordinated by the Ministry of Health with the support of National Health Institute (Istituto superiore di Sanita'), to collect timely information on the total number of positive tests, deaths, hospitalisations in hospital and ICU admissions in every Province of Italy. The flow of individual data sent by the Regions through the Integrated surveillance Covid-19 goes directly to the National Health Institute, and it includes demographic data, comorbidities, clinical status and its evolution over time, for a more accurate analysis.

6 RESULTS FOR SPAIN

6.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
General page for professionals is https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/home.htm July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Important factors of the strategy are: • **Early detection of all COVID-19 compatible cases:** one of the key points (above others) in controlling transmission. ○ By strengthening the teams of **primary care professionals**, **guaranteeing diagnostic and case management capacit**y from this level, ensuring the **availability of the necessary material** for this purpose and the availability of **personal protection equipment**. The Autonomous Regions must guarantee this diagnosis and strengthen health centres for the management and monitoring of cases. ○ **PCR testing** should be aimed primarily at the **early detection** of cases with transmission capacity, prioritising this use over other strategies. • **Monitoring the epidemic** requires ○ epidemiological information systems that provide daily information for decision making. ○ adaptations must be made to the health information and **epidemiological surveillance systems** to enable the **National Network for Epidemiological Surveillance (RENAVE) coordinated by the Ministry of Health** which needs the necessary information to react timely. ○ each component of RENAVE, both at the **Autonomous Communities as well as at the National level** (both the Ministry of Health and the National Centre of Epidemiology) should have sufficient human resources especially in the epidemiological surveillance units, and the technological and computer developments necessary to obtain and analyse cases continuously and to manage contacts properly. • **Monitoring the transmission** requires: information from different levels, including public and private health and social care centres, and occupational risk prevention services. **A new information system has been developed to get information directly from laboratories**. Information is requested from the Central level in terms of **the number of PCR tests developed and the number of positive cases.** To this end, the Autonomous Regions' Health Services and both the public and private health care services will adapt their computer systems to enable the minimum required information to be obtained in the time and manner indicated in the corresponding established computer applications. The main goals of this strategy are: 1. Early detection of cases with active SARS-CoV-2 infection. 2. The early establishment of the necessary control measures to prevent new infections 3. The availability of the information necessary for epidemiological surveillance, with an appropriate level of disaggregation and detail The results of laboratory testing, mainly in the context of screening, can also detect cases of resolved infection, but the search for such cases is not the aim of the strategy. In the content of **screening also asymptomatic active cases** can be detected.

6.2 Testing strategy

6.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition

July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	**Detection of COVID-19 cases:**
	Any person with suspected and probable SARS-COV-2 will be tested (PCR). A prescription is required:
	• Any person with **suspected** SARS-CoV-2 infection should have a PCR (or other appropriate molecular diagnostic technique) performed within the first 24 hours.
	  ○ Suspected case:
	  ▪ any person with a clinical picture of acute respiratory infection of sudden onset of any severity, including fever, cough or shortness of breath.
	  ▪ any person with symptoms such as odynophagia, anosmia, ageusia, muscle aches, diarrhea, chest pain or headaches.
	• Any person with **probably** SARS-CoV-2 infection: a PCR that is negative and high clinical suspicion of COVID-19
	  ○ PCR repeated after **48 hours** with a new sample from the respiratory tract.
	  ○ If the PCR remains negative and several days have passed since the onset of symptoms, **IgM** detection could be considered using a serological ELISA2 type test or other high throughput immunoassay techniques.
	  ▪ Probable case:
	  ○ suspected case with inconclusive PCR;
	  ○ a person with severe acute respiratory infection with clinical and radiological picture compatible with COVID-19 and negative PCR results
	  ▪ In close contacts, PCR is only needed when these close contacts are suspected cases (so only when they are symptomatic)

6.2.2 PCR testing conditions: how and by whom?

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf May 26th 2020.	1. PCR testing available upon physician's prescription. 2. PCR testing conducted in Health Care Centres. 3. The samples recommended for the diagnosis of SARS-CoV-2 by PCR are from the respiratory tract: • Upper, preferably nasopharyngeal and oropharyngeal exudate or nasopharyngeal exudate • Lower, preferably bronchoalveolar lavage, bronchoaspirate, sputum (if possible) and/or endotracheal aspirate, especially in patients with severe respiratory disease

https://www.eldigitaldealbacete.com/2020/05/26/coronavirus-test-pcr-sin-bajar-del-coche-en-albacete/	

6.2.3 *Indications and conditions for serological testing*

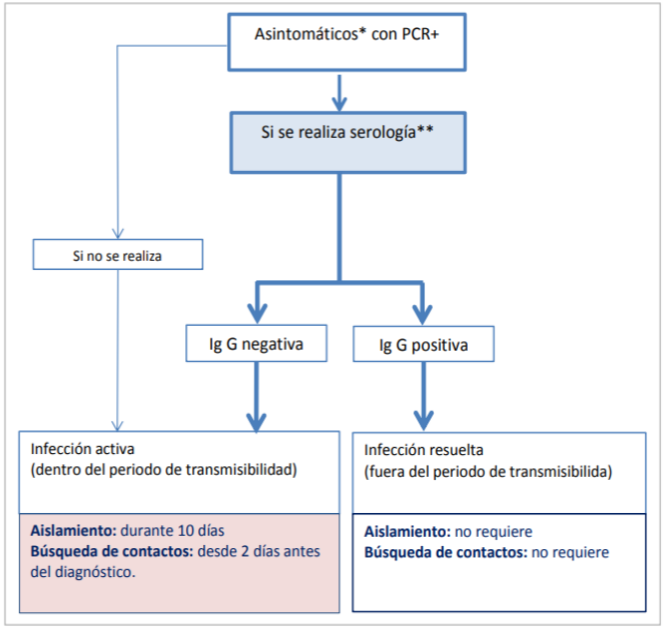
Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Rapid antigen or antibody detection techniques are not considered suitable for the diagnosis of acute infection. Nor are ELISA-type serology or other high-performance immunoassay techniques alone indicated for diagnosis in the acute phase of the disease. This follows WHO guidance. **Serology** can be used in the definition of confirmed cases in the following situations: 1. Confirmed case with active infection: ○ Person meeting clinical criteria for a suspected case, PCR negative and IgM positive by high throughput serology (not by rapid test). ○ Asymptomatic person with PCR positive with IgG negative or not performed. ○ (Person meeting clinical criteria and positive PCR) 2. Confirmed case with resolved infection: ○ Asymptomatic person with positive IgG serology regardless of the PCR result (positive PCR, negative PCR or not performed). Serology is used in the definition of discarded cases in the following situations: ○ suspected case with negative PCR and IgM also negative, if this test has been performed, in which there is no high clinical suspicion.
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	The recommended samples for serological testing are blood obtained by peripheral venous sampling or finger stab, depending on the type of test. **Screening studies** are those conducted on asymptomatic people. It is not recommended to set up screening studies with **either PCR or serological techniques**, because of the difficulties of interpretation the results in asymptomatic and low-risk people. It could only be considered in certain situations when persons are continuously exposed to the virus and always on the recommendation of the public health authorities. • Screening with serological tests (if health authorities consider it): the aim is to improve the quality of life of vulnerable populations or those with greater exposure, such as health and social care personnel or residents of retirement homes or other social centres.

Resultados anticuerpos	Realizar PCR		Interpretación	Actuaciones
Ig totales positivas	Sí	+	Interpretar según algoritmo*	Actuar según algoritmo*
		-	Caso confirmado con infección resuelta	No aislamiento No búsqueda de contactos
IgM positiva[1] IgG negativa	Sí	+	Caso confirmado con infección activa	Aislamiento 10 días Búsqueda de contactos desde 2 días antes del diagnóstico
		-	Falso positivo de Ig M	No aislamiento No búsqueda de contactos
IgM positivo IgG positivo	No		Caso confirmado con infección resuelta	No aislamiento No búsqueda de contactos
IgM negativo IgG positivo				

[1] Si es una prueba diagnóstico solo con IgM y ésta es positiva, debido a la heterogeneidad de los test empleados con diferentes sensibilidades y especificidades, se ha de acompañar un resultado de PCR.

*Ver algoritmo en el siguiente apartado.

- Screening with PCR: at this moment it should only be used for the detection of early cases between contacts, in vulnerable populations in the context of outbreaks or in a prior to some welfare actions. Asymptomatic people who have had a positive PCR test that was negated (due to lack of evidence at the time of transmissiblity from patients who are PCR positive again)



* Se definen como asintomáticos aquellos casos que no refieren haber presentado síntomas compatibles o aquellos que, habiéndolos presentado, hace más de 14 días que se encuentran asintomáticos.
**Serología de alto rendimiento: ELISA, CLIA, ECLIA o técnicas similares. Para esta interpretación serológica no se tendrá en cuenta el resultado de la Ig M ni de la Ig A.

La interpretación del algoritmo puede ser complementada con otra información microbiológica (el umbral de ciclo -Ct- en el que la PCR es positiva) y clínica adicional. En cualquier caso se ha de individualizar su interpretación y esta puede verse modificada según los resultados de lo estudios que se están realizando..

6.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
July 2nd (https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID-19_pruebas_diagnosticas_02_07_2020.pdf)	In total 3,644,458 PCR tests (77,38 tests per 1,000 inhabitants) and 1,993,931 rapid antibody tests (42,33 per 1,000 inhabitants) are conducted across Spain. In the week of June 26 to July 2nd 228,650 PCR and 107,743 rapid antibody tests were conducted.

July 13th, Personal communication	There are currently **176 public laboratories** that can process PCR samples. There are university labs, in hospital microbiological labs, research centres, both military and veterinary labs. During the 'state of alarm' the Ministry of Science and ISCIII validated the diagnostic support capacity of the National Centre for Microbiology (carrying out thousands of diagnostic PCRs) which was done due to circumstances and currently they provide support in necessary cases.

6.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	The general practitioners or treating doctor communicates the result to the patient by phone and provides general information on the virus to the patient, the hygiene measures and isolation or quarantine measures for close contacts.

6.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	The Public Health epidemiological surveillance services of the Autonomous Regions must obtain information on • suspected and confirmed cases, • both in primary care and in hospitals • from the public and private systems, • as well as from prevention services. Confirmed cases (except those of infection resolved or with negative or indeterminate PCR result) are of *obligatory urgent declaration.*
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	The Autonomous Regions have to notify the state level (by using the national COVID-19 confirmed case notification survey) through the **SiViEs surveillance tool** managed by the National Epidemiology Centre each day before 12:00 all information accumulated and updated up to 24:00 the previous day will be incorporated. This surveillance has been in place since 12 May. Suspected cases are reported to the CCAES as follows: • **Number of suspected cases in primary care**. This information shall be reported in aggregate to the CCAES at established intervals. If aggregated information is available from other sources of information on compatible cases (Apps, phone lines, etc.) they shall also be reported, if possible differentiating it from the previous ones. • **Number of suspected cases attended in hospitals** (do not include persons indicated as having PCR for screening purposes). This information shall be reported in aggregate to the CCAES at intervals to be established.

	• **Percentage of suspected cases of COVID-19 in primary care** where a PCR has been performed. This information shall be reported to the CCAES on a weekly basis. It shall be reported on Wednesdays before 12:00 noon with the data from the previous week, from Monday to Sunday. • **Percentage of suspected cases in hospital care** where a PCR has been performed (not including PCRs resulting from screening tests). This information shall be reported in aggregate on a weekly basis to the CCAES. It shall be reported on Wednesdays before 12:00 noon with the data from the previous week, from Monday to Sunday. • **Number of close contacts confirmed as cases:** This information shall be reported in aggregated form on a weekly basis to the CCAES from the monitoring systems when established. Calculated as contacts that are confirmed as case that week/contacts in follow-up that week x 100. It shall be reported on Wednesdays before 12:00 noon with the data from the previous week, from Monday to Sunday. • **Number of professionals in the epidemiological surveillance services** (public health technicians epidemiologists, public health nurses, other technical staff) dedicated to the response of COVID-19 in relation to the number of daily cases detected and the reference population. Indicating the initial personnel and the new backup personnel incorporated. It shall be reported on Wednesdays before 12:00 noon with the data from the previous week, from Monday to Sunday. Information on detected outbreaks should be sent to the CCAES (alertasccaes@mscbs.es) and to CNE (vigilania.cne@isciii.es) following a standard table (see 1.4.2).

6.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Accessing COVID-19 tests requires a physician's prescription.
June 6th 2020. https://www.covid19healthsystem.org/countries/spain/livinghit.aspx?Section=4.2%20Entitlement%20and%20coverage&Type=Section	In the Spanish health system, insurance is mandatory and coverage is virtually universal; provision of services is free of charge at the point of delivery, with the exception of pharmaceuticals and some ancillary goods. Everyone with legal residency status is entitled to receive full coverage for COVID-19 treatments, at any point of care. For non-residents, emergency care and subsequent treatment are also fully covered.

6.3 Isolation strategies and monitoring of confirmed cases

6.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Managing cases with active infection: • All suspected cases will be kept in isolation pending the outcome of the PCR • The search for their close contacts (such as co-habitants and co-workers) will be initiated • In case of negative PCR, and if there is no high clinical suspicion, the case is discarded and the isolation is terminated. Management if the test is positive; see management of confirmed case 1.1.2

6.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	**a. Primary care setting** • home isolation will be provided in case effective isolation can be guaranteed. • When this cannot be guaranteed, isolation in hotels or other facilities fitted for such use shall be indicated. *Symptomatic*: up to three days after resolution of fever and clinical presentation with a minimum of 10 days from onset of symptoms. *Asymptomatic*: until 10 days from the date of diagnosis. Follow-up will be supervised until epidemiological discharge in the manner established in each autonomous community. **b. Hospital environment** • isolated during their stay in the hospital following standard precautions, contact and air-droplet transmission precautions and will be managed according to the protocols of each centre. • discharge from hospital, if clinical conditions allow it, even though the PCR remains positive, but home isolation must be maintained with monitoring of the clinical situation for at least 14 days from the date of discharge from hospital. After these 14 days, and provided that three days have passed since the resolution of the fever and the clinical picture, the isolation may be terminated. In any case, if a PCR is performed and a negative result is obtained (before these 14 days of home isolation from hospital discharge have elapsed) patient's home isolation may be terminated. • If the last negative PCR is performed at the time of hospital discharge and there are no respiratory symptoms in the three days prior, the infection is considered to have been resolved and the patient may be discharged without the need for home isolation. In any case, the provisions of each Autonomous Region will be followed. **c. Nursing homes and other social health care centres** In confirmed cases that are residents in centres for the elderly or in other social health centres

- isolation in the centres where they reside (if clinical condition allows it).
- isolation shall be maintained up to three days after the resolution of the fever and the clinical picture, with a minimum of 10 days from the start of the symptoms.
- The follow-up and discharge will be supervised by the doctor who has done the follow-up in his centre or in the way that is established in each autonomous community.
- If the effective isolation of mild cases cannot be guaranteed, isolation in hotels or other facilities fitted for such use will be indicated if this possibility exists.

Due to the vulnerability of social health centres, the detection of a single case in these institutions will be considered an outbreak for the purposes of implementing action measures. In addition to general actions, PCR will be carried out on close contacts or, depending on the circumstances, on all residents and workers of the centre, in the manner established by each Autonomous Region.

d. Prisons and other closed institutions

- isolation shall be indicated in the facilities where they are confined.
- Isolation shall be maintained until three days after the resolution of the fever and the clinical picture with a minimum of 10 days from the onset of symptoms.
- Follow-up and discharge will be supervised by the doctor who has carried out the follow-up in his centre or in the manner established in each Autonomous Region.

e. Work environment

Health and social-health personnel who are confirmed cases

- Home isolation as in a)
- resolution of symptoms at least 3 days before, and with a minimum of 10 days from the start of the symptoms.
- PCR before return to work,
- In the event of a negative result, return to work.
- If the PCR remains positive no return to work and repeat PCR.

Health and social care personnel who have required hospital admission

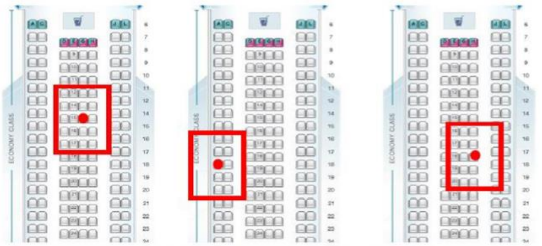
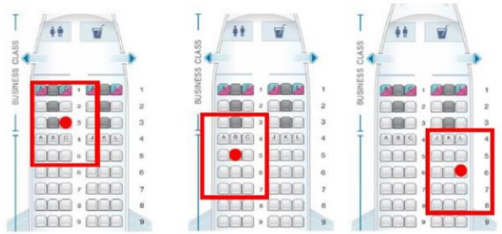
- discharge from hospital if their clinical situation allows it, even if their PCR remains positive,
- kept in home isolation with monitoring of their clinical situation for at least 14 days from the date of discharge from hospital.
- resolution of symptoms at least 3 days before, and with a minimum of 14 days from the start of the symptoms.
- PCR before return to work,
- In the event of a negative result, return to work.
- If the PCR remains positive no return to work and repeat PCR.

Non-healthcare workers who are confirmed cases will be managed as in a)

Monitoring will be supervised by the personal primary care physician, or work physician, in a manner established in each Autonomous Region.

6.4 Contact tracing strategy

6.4.1 Contact definition

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	A close contact (within 2 days before the onset of symptoms of the case until the time when the case is isolated and in asymptomatic cases confirmed by PCR, contacts should be sought from 2 days before the date of diagnosis) is defined as follows: • Any person who has provided care to a case: health or social-health personnel who have not used the appropriate protective measures, family members or persons who have other similar physical contact. • Any person who has been in the same place as a case, at a distance of less than 2 metres (e.g. housemates, visitors) and for more than 15 minutes. • Close contact in an aircraft, train or other long-distance transport (and where possible access to passenger identification) is considered when within two seats of a case and the crew or equivalent personnel who have had contact with that case (see flight schematic). All persons within the 5x5 seatings including path way indicated in the red squares are close contacts on the schematics  El estudio de contactos se debe realizar en un área de 5x5 espacios, tal como se indica en las imágenes. Se considera 1 espacio: un asiento o el pasillo. Este mismo esquema es aplicable a otros aviones con diferentes distribuciones de asientos.  El estudio de contactos se debe realizar en un área de 5x5 espacios, tal como se indica en las imágenes. Se considera 1 espacio: un asiento o el pasillo. Este mismo esquema es aplicable a otros aviones con diferentes distribuciones de asientos.

6.4.2 Organisational process of contact tracing

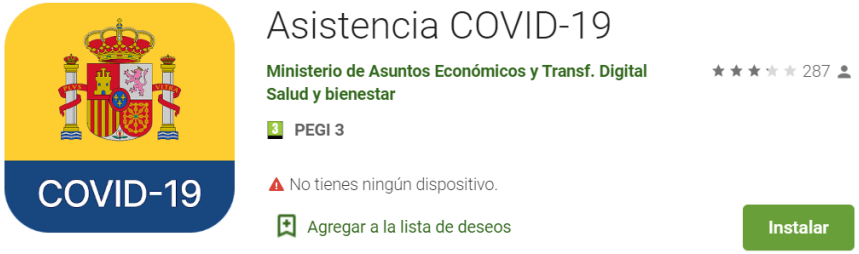
Date report(ed) and reference	Statement / definition
https://coronavirus.sergas.es/Contidos/CSC-Central-de-seguemento-de-contactos?idioma=es	1. **Each Autonomous Region organizes contact tracing.** For instance in Galicia, when PCR is positive, the lab will inform the physician (to inform the patient) and a sort of call centre 'Central de Seguimientos de Contactos' will start the process of contact tracing. 2. According to the strategy, **performance of PCR is recommended in every close contact at the time of identification as contact**, and also a second PCR on day 10 will be conducted. If the latter turns out to be negative, contact's quarantine measures may be lifted. 3. The Autonomous Regions have to **notify the state level** (by using the national COVID-19 confirmed case notification survey) through the **SiViEs surveillance tool** managed by the National Epidemiology Centre each day before 12:00 all information accumulated and updated up to 24:00 the previous day will be incorporated. This surveillance has been in place since 12 May.

6.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	In the event of contacts of a suspicious case: • Identify and controlling contact, and recommend house-members to avoid leaving home immediately • When the PCR result can be guaranteed within 24-48 hours (depends on corresponding Autonomous Community): wait for PCR confirmation. ○ confirmed case with active infection: identification and control of the other close contacts (non-cohabitants) ○ PCR negative, the quarantine of contacts will be suspended.

6.4.4 Contact tracing apps

Date report(ed) and reference	Statement / definition
	On 27th of March, the Secretary of Digitalisation and Artificial Intelligence (a body of the Ministry of Economic Affairs) was ordered to develop an app to support the management of the COVID-19 crisis. Using this app **(Asistencia-Covid19)**, citizens are able to self-assess their health status and how likely it is for them to suffer from a COVID-19 infection, as well as receive advice and recommendations about how to proceed depending on the results of this assessment (Order SND/297/2020 https://www.boe.es/buscar/doc.php?id=BOE-A-2020-4162). Since April 7th, the app is available and covers the population living in those Autonomous Communities that have not developed their own information and monitoring applications (that is, Cantabria, Canarias, Castilla-La Mancha, Extremadura and the Balearic Islands). Similar web or mobile apps are available for the population

	in other Autonomous Communities, such as Andalucía, Madrid, Aragón, Cataluña or País Vasco (https://www.boe.es/buscar/doc.php?id=BOE-A-2020-4829).  The same Order regulates the use of anonymised and aggregated data provided by mobile operators in order to analyse the population movements prior and during the lockdown, with a view to identify hotspots and improve the management and coordination of health care resources (Order SND/297/2020 https://www.boe.es/buscar/doc.php?id=BOE-A-2020-4162). On April 20, the National Institute of Statistics published the main results of the data analysis on population movements at https://www.ine.es/covid/covid_movilidad.htm. The app is also useful for close contacts to monitor their symptoms.
June 23 2020. https://www.elperiodico.com/es/economia/20200623/espana-lanzara-su-app-de-rastreo-del-coronavirus-en-junio-en-canarias-7969239	Spain plans to launch a **COVID-19 tracing app** through a pilot project in the Canary Islands on June 24th 2020 (Canary Islands are chosen because of the tourism). The technology of Apple and Google will be used. It was difficult to implement apps earlier in respect of the rights of individuals and the protection of privacy and personal data. If the pilot phase is successful, it will be applicable nationally with the aim of being interoperable between countries. In the event this app becomes available nationally, **would complement the Asistencia-Covid19 app**, launched a few months ago to support those users who present symptoms of the virus.

6.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Contact management: In the event of a **suspicious case** • Identify and recommend house-members to avoid leaving home immediately • When the PCR result can be guaranteed within 24-48 hours (depends on corresponding Autonomous Community): wait for PCR confirmation. ○ confirmed case with active infection: identification and control of the remaining close contacts (non-cohabitants): see 1.3.2 ○ PCR negative, the quarantine of contacts will be suspended. Close contact must be • informed and active or passive surveillance will be initiated (following the protocols established in each Autonomous Community) • Basic epidemiological data and identification and contact details collected (following the protocols established in each Autonomous Community) • All contacts will be provided with the necessary information about the COVID-19, the alarm symptoms and the procedures to be followed during the follow-up: ○ Because the possible period of transmissibility begins 48 hours before the onset of symptoms you have been classified as a risk contact. You will be actively monitored throughout the maximum incubation period of the disease, which is 14 days, but may be shortened to 10 days depending on whether or not a diagnostic test is performed. ○ During this period you should watch for any symptoms of illness (particularly fever, coughing or shortness of breath) so that you can act as early as possible, especially to prevent transmission to others. In addition, you should remain at home in quarantine for 10 to 14 days. The goal of these measures is to prevent that in case you acquired the infection, you may in turn transmit it to other persons. Moreover, the transmission begins within 48 hours before the onset of the symptoms, if they develop. ○ You should perform a temperature control twice a day, between the following times: - From 08:00 to 10:00 hours - From 20:00 to 22:00 hours ○ The person responsible for your follow-up will contact you to know about the temperature measurements and if you have had any suspicious symptoms, following the protocols established in your Autonomous Region. In addition, you should follow the following recommendations: ▪ Stay at home until 10 or 14 days after the last exposure to risk, i.e. the day you last came into contact with the case ▪ Stay in a single room most of the time and preferably with the door closed (and try to do activities that will entertain you such as reading, drawing, listening to the radio, listening to music, watching television, surfing the internet, etc). ▪ If possible, use your own bathroom, i.e. do not share it with any of your housemates.

        - Wash your hands often with soap and water, especially after coughing or sneezing or handling tissues you have used to cover yourself. You can also use hydro-alcoholic solutions.
        - Restrict exits from the room or house to the absolute minimum and, when necessary, always wear a surgical mask.
        - Limit as much as possible the contact with co-habitants.
    - In case you have a fever (take into account if you are taking antipyretics in order to assess the fever) or develop any symptoms such as cough or breathing difficulty, you should contact immediately (XXX local responsible person telephone number). If this person is not available, call 112/061 and report your symptoms and that you are being followed as a contact for possible exposure to the new coronavirus (SARS-CoV-2).

Action on close contacts shall be as follows:

- Monitoring and quarantine shall be indicated for 14 days after the last contact with a confirmed case. If close contact quarantine cannot be guaranteed, it is recommended that it will be carried out in community facilities prepared for this purpose.
- PCR test is recommended for close contacts with the main objective of early detection of new positive cases. The most effective strategy would be to perform PCR at the time of contact identification, regardless of the time since the last contact with the case. Priority may be given in testing (people who care for) vulnerable people, co-habitants, or (social)-health staff of (social)-health centres or other very important people or people who the Autonomous Region considers in its strategy. In case PCR is negative, quarantine should be conducted for at least 14 days. In addition, to reduce the duration of quarantine, a PCR could be repeated 10 days after the last case-contact, and quarantine can be lifted if PCR is negative.
- If co-inhabitants cannot be isolated from the case under optimal conditions, the quarantine can be prolonged with 14 days from the end of the case isolation.
- The contact will be instructed to remain at home during the quarantine, preferably in a separate room, and to stay as much as possible in the room. If exiting the room is needed, it should be done with a surgical mask. Contact with co-habitants should be restricted as much as possible. Contact should be organized in a way that no exit of the house is needed during the period of quarantine unless in exceptional circumstances.
- washing hands frequently (with soap and water or hydro-alcoholic gel) especially after coughing, sneezing, and touching or handling tissues or other potentially contaminated surfaces.
- They need to be able to be contacted during follow-up periods.
- All contacts should avoid taking antipyretics without medical supervision during
- surveillance period to avoid masking and delaying the detection of the fever.
- If the contact, at the time of identification, presents any symptoms related to suspicious cases, it will be handled in the manner established for suspicious cases. Also if during the follow up the contact develops symptoms, it will be considered a suspected case. The contact should be immediately isolated at the place of stay and immediately contact the monitoring person in charge or contact 112/061 indicating that it is a contact from a case of SARS-COV-2.
- If any contact PCR is positive, the contact will be considered confirmed by immediate self-isolation at the place of stay or where the health authorities establish residence. On its turn, close contacts will be identified.

If the contact remains asymptomatic at the end of the quarantine period, return to normal routine is allowed. However, if it is impossible to continue with the work activities due to the follow up measures, it must be communicated to the company or the company’s prevention service, in accordance with the imposed procedure.

6.6 Early case detection methods

6.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	• Number of suspected cases in primary care • Number of suspected cases attended in hospitals • Percentage of suspected cases of COVID-19 in primary care where a PCR has been performed. • Percentage of suspected cases in hospital care where a PCR has been performed (not including PCRs resulting from screening tests). • Number of close contacts confirmed as cases.

6.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	The information on the detected outbreaks (any cluster of 3 or more confirmed or probable cases with active infection in which an epidemiological link has been established) is sent at start and weekly to • CCAES (alertasccaes@mscbs.es), • NEC (vigilancia.cne@isciii.es) • according to the table below **Not** for **household** outbreaks unless they have special characteristics. For the purposes of this notification,

Anexo 3. TABLA DE NOTIFICACIÓN DE BROTES

Nº identificación del brote	
Fecha de la comunicación al nivel central	
Comunidad Autónoma del brote	
Provincia del brote	
Municipio del brote	
Fecha inicio de síntomas del primer caso	
Número de casos	
Número de casos hospitalizados	
Número de casos fallecidos	
Número de contactos en seguimiento	
Ámbito del brote (se indicará nombre del establecimiento o institución donde se ha producido el brote)	
Primer caso importado (Si/No)	
País del caso importado	
Observaciones: Información sobre factores contribuyentes (no distanciamiento físico, no uso de EPIS, incidencia en el uso de EPIS, viaje, etc.) y cualquier otra información que se considere relevante.	

Lugar del brote: autonomía, provincia y municipio donde se produce el brote.
Temporalidad: Fecha de declaración del brote a los servicios centrales de la CA. Fecha de inicio de síntomas del primer caso.

- Identification number of the outbreak and date of communication to central level.
- Place (Autonomous Community, Province, Municipal)
- Date of symptoms of first case
- Number of cases (number of hospitalisation & deaths)
- Number of contacts
- Name or place (institution, school, restaurant, building, etc.) of outbreak
- Came the first case from outside the country? Which country?
- Other information that could be relevant

6.6.3 In hospitals

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	***Confirmed cases*** will be : • isolated during their stay in the hospital following standard precautions, contact and air-droplet transmission precautions and will be managed according to the protocols of each centre. • discharge from hospital, if clinical conditions allow it, even though the PCR remains positive, but home isolation must be maintained with monitoring of the clinical situation for at least 14 days from the date of discharge from hospital. After these 14 days, and provided that three days have passed since the resolution of the fever and the clinical picture, the isolation may be terminated. In any case, if a PCR is performed and a negative result is obtained (before these 14 days of home isolation from hospital discharge have elapsed) the patient may be discharged. • If the last negative PCR is performed at the time of hospital discharge and there are no respiratory symptoms in the three days prior, the infection is considered to have been resolved and the patient may be discharged without the need for home isolation. In any case, the provisions of each Autonomous Region will be followed. Information on detected outbreaks should be sent to the CCAES (alertasccaes@mscbs.es) and to CNE (vigilania.cne@isciii.es) following a standard table. The table (see 1.4.2) needs to be sent at the time of the detection of the outbreak and shall be updated at least weekly with the relevant information for their follow-up. Information on household outbreaks is not necessary unless there are special features. For this table an outbreak is considered when 3 or more confirmed or probable cases with active infection in which an epidemiological link is established.

6.6.4 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	In ***confirmed cases*** that are residents in centres for the elderly or in other social health centres : • isolation in the centres (if clinical condition allows it). • isolation shall be maintained until three days after the resolution of the fever and the clinical picture, with a minimum of 10 days from the start of the symptoms. • The follow-up and discharge will be supervised by the doctor who has done the follow-up in his centre or in the way that is established in each autonomous community. • If the effective isolation of mild cases cannot be guaranteed, isolation in hotels or other facilities fitted for such use will be indicated if this possibility exists. Due to the vulnerability of social health centres, the detection of a **single** case in these institutions will be considered **an outbreak** for the purposes of implementing action measures. In addition to general actions, PCR will be carried out on close contacts or, depending on the circumstances, on all residents and workers of the centre, in the manner established by each Autonomous Region. An outbreak is considered when 3 or more confirmed or probable cases with active infection in which an epidemiological link is established.

6.6.5 In schools

Date report(ed) and reference	Statement / definition
June 22, 2020 http://www.educacionyfp.gob.es/dam/jcr:7e90bfc0-502b-4f18-b206-f414ea3cdb5c/medidas-centros-educativos-curso-20-21.pdf	Schools will open in September 2020 Main components: **Attendance of all students guaranteed. If necessary, prioritization, or lower level of attendance.** It is recommended that in each educational centre there be a responsible person who can refer to aspects related to COVID-19. It may also be useful for schools to create a COVID-19 team trained by the school management, secretariat, one or more members of the teaching staff, a member of the cleaning service and representation of families and students, which guarantees the the basic principles and that the entire educational community is informed of their implementation. There is a **guide for Prevention and Control of Infection at schools** with the following objectives: 1. Create healthy and safe school environments through prevention, hygiene and health promotion adapted to each educational stage. The basic principles are: a. **Limiting the contacts**: i. >1.5m distance between people in the school (or measures allowing social distancing e.g. panels, partitions, separation, etc. ii. And/or creation of coexistence groups (of 15 to 20 students and a tutor) which can interact with each other on <1.5m distance from each other (this measure facilitates contact tracing). iii. Communication with families by phone, email, messages, or mail. iv. Encouraging walking and cycling (active transportation), to limit contacts. b. **Personal prevention measures**: hand and respiratory hygiene (common strategy). i. **Masks** for students: not compulsory in infant education. In primary and secondary education only compulsory outside coexistence groups when social distancing cannot be held. A mask is not necessary when they are sitting at their desks at least 1,5m apart. ii. Masks for tutors: In infant and primary education, voluntary wearing masks in the coexistence group and mandatory use outside this group when social distance cannot be maintained. In secondary education, mandatory when social distancing cannot be maintained. iii. Compulsory in collective school transport from the age of 6. iv. Use of masks contraindicated: behavioural disorders, impossible to use masks, children under 2y, people with breathing difficulties, etc. v. Objects for share need extreme cleaning between manipulations. vi. Use of **gloves** not generally recommended except for cleaning. c. **Cleaning and ventilation:** i. Specific cleaning and disinfection **protocol** in place with measures such as disinfection at least once a day, special attention to areas/surfaces of common use and private areas, which products to use, etc. ii. Frequent ventilation with measures such as time (5-10 min), weather conditions, etc. iii. Rooms used by multiple people will be ventilated and disinfected during switch. iv. Waste management with measures on masks, drying hands, buckets, etc. d. **Case management:** early management of detected cases (protocol)

i. Person that starts to develop symptoms will be taken to separate space for individual use, a surgical mask will be fitted (both persons), the family will be contacted as well as the Primary Care referral centre. In case of severe symptoms call 112. Worker should leave his job until his medical situation is assessed.
ii. study and follow up of contacts (easier when stable groups), Public Health should monitor contacts in accordance with the surveillance and control protocol in force in the corresponding Autonomous Community. Autonomous Community should assess the actions to be taken in the event of an outbreak.
iii. Protocol of action created by Public Health in the event of outbreak (e.g. temporary closure of classrooms, or schools)
iv. Confirmed case should stay at home in isolation (cfr. strategy)



Transversal actions (specific measures reported in document on 4 major topics):

- Reorganisation of the school:
  - Management of the centre's human resources: verify who is in home isolation or especially at risk, training/informing workers, risk assessment for teachers (similar to community risks - risk 1, but in case of possible infection - risk 2 and surgical mask is indicated)
  - Reorganisation of spaces: social distancing in spaces used by multiple people, outdoor activities encouraged, fixed groups (15-20 students), public spaces will be used in case not sufficient space, classrooms may be used for eating, etc.

	○ Flexible hours will be implemented to minimize the presence of people simultaneously and the use of spaces. ○ Equipment for prevention and hygiene measures will be provided. • Coordination and participation ○ Coordination: Local communication should be improved from the school / institute towards the primary care, with Public Health, with Social Services, with local entities. ○ Participation with families and students (information, education on preventive measures and hygiene, etc.) • Communication and health education ○ Communication: management team must ensure that information on action protocols and prevention, hygiene and health promotion measures are understood by the entire educational community. ○ Health education including the reason why, what, when, support materials, etc. • Equity: attention to the needs of certain groups such as social vulnerability, special need situations, parents working outside or teleworking not possible, etc. Monitoring of absenteeism of tutors, schools must provide supportive, respectful environment, etc. 2. To enable early detection of cases and appropriate management of them through clear action protocols and coordination of the agents involved. There are specific protocols and measures for 'special education' and 'early childhood education' (0-3y) e.g. disinfection diaper changing area every time, beds 2m apart, etc. An outbreak is considered when **3 or more confirmed or probable cases** with active infection in which an epidemiological link is established. This document aims to provide a common framework that can be adapted at the level of each Autonomous Region and implemented according to the reality of each educational centre and its local context e.g. Galicia (https://coronavirus.sergas.gal/Contidos/Documents/412/Plan_reactivacion_ambito_infantoxuvenil.pdf)

6.6.6 Precarious population

Date report(ed) and reference	Statement / definition
July 9th 2020. https://www.mscbs.gob.es/en/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/COVID19_Estrategia_vigilancia_y_control_e_indicadores.pdf	Prisons and other closed institutions: In ***confirmed cases*** of inmates in prisons or other closed institutions that do not meet hospitalisation criteria and are managed in their own facilities, • isolation shall be indicated in the facilities where they are confined. • Isolation shall be maintained until three days after the resolution of the fever and the clinical picture with a minimum of 10 days from the onset of symptoms. • Follow-up and discharge will be supervised by the doctor who has carried out the follow-up in his centre or in the manner established in each autonomous community. An outbreak is considered when **3 or more confirmed or probable cases** with active infection in which an epidemiological link is established.

6.7 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
https://boe.es/boe/dias/2020/06/10/pdfs/BOE-A-2020-5895.pdf	Protocols agreed in the Interterritorial Council are mandatory all over the territory (Royal Decree 21/2020). Regional health authorities are responsible for deployment. The purpose of this **Royal Decree Law** is to establish the urgent prevention, containment and coordination measures needed to deal with the health crisis caused by COVID-19, and to prevent possible outbreaks, with a view to certain provinces, islands and territorial units exceeding Phase III of the Plan for Transition to a New Normalcy and possibly expiring the validity of the state of alarm declared by Royal Decree 463/2020 of 14 March, declaring a state of alert for the management of a health crisis situation caused by COVID-19, and its extensions. In Decree 2210/1995 of 28 December 1995: The **National Epidemiological Surveillance Network** (la Red nacional de vigilancia epidemiológica) (https://www.boe.es/buscar/pdf/1996/BOE-A-1996-1502-consolidado.pdf) is established to enable the collection and analysis of epidemiological information in order to be able to detect problems, assess changes in time and space, contribute to the implementation of control measures individual and collective of problems that pose a health risk of incidence and national or international interest and disseminate information at their operational levels competent. The National Epidemiological Surveillance Network is at the service of the National Health Service. Towards COVID-19 the National Epidemiological Surveillance Network are given a series of obligations for the collection, processing and transmission of information, of the relevant epidemiological and health-related data, always safeguarding the protection rights of personal data, as well as the system established with the laboratories for the collection and referral of information with the result of diagnostic tests by PCR in Spain as a complement to the surveillance system of COVID-19 cases. *In case that Spain is in a 'state of alarm' (declared by the Ministery) the Government may agree jointly with each Autonomous Region, the modification, extension or restriction of the units of action and the limitations on the freedom of movement of persons, on measures of restraint and those of insurance of goods, services, transport and supplies, in order to better adapt them to the evolution of the health emergency in each autonomous community".*
https://www.consalud.es/pacientes/centros-investigacion-validados-pruebas-pcr-diagnostico-covid-19_77602_102.html	The health services of the Autonomous Regions are the ones that have to confirm the need for the diagnostic support that the research centres and qualified universities can provide to the microbiological laboratories of the hospitals, in addition to developing a protocol for sending samples and collecting results that ensures the traceability and anonymity of the tests that have legal validity. **It is therefore the Autonomous Regions that manage the request for support, in coordination with the central government and according to the needs detected, while the ISCIII is responsible for evaluating the capacities and resources of the proposing centres**. The Autonomous Regions are also responsible for policies, protocols and measures taken when no 'state of alarm' is implemented by the National Government.

7 RESULTS FOR THE NETHERLANDS

7.1 Existence of a plan to prevent the second wave

Date report(ed) and reference	Statement / definition
https://lci.rivm.nl/draaiboeken/generiek-draaiboek	There is a **national pandemic response plan (which was already implemented before COVID-19 outbreak)** describing the general actions in case of an infectious disease crisis and is directed towards the Public Health Services. It describes which measures should be taken in which phase of the crisis and who is responsible and how the organisation of the Public Health Service should be modified to deal with the crisis. The phases are the following: (1) after reporting the first case: direct measures including treatment of the patient, testing, contact tracing, and lab diagnostics; (2) scaling up: including cooperation with other parties, information provision, type of measures for scaling up, ensuring continuation of usual care; further measures including social distancing, refining contact tracing and diagnostics, hygiene measures, medical supervision, isolation and quarantine, vaccination and prophylaxis; (3) downscaling: including cancelling the crisis organisation, after care, evaluation, reporting.

7.2 Testing strategy

7.2.1 Indications for PCR testing

Date report(ed) and reference	Statement / definition
June 11th https://lci.rivm.nl/richtlijnen/covid-19#besmettelijke-periode	From June 1st 2020, everyone with symptoms of COVID-19 infection: • must stay at home, • can have themselves tested. GGD's use PCR tests in persons who present symptoms of COVID-19 and in tracing of their contacts if symptoms are presented. It is particularly important that people who care for vulnerable people are tested immediately in the event of symptoms. Vulnerable people or people with serious complaints should be tested by their GP and/or referred to the hospital if needed.

7.2.2 PCR testing conditions: how and by whom?

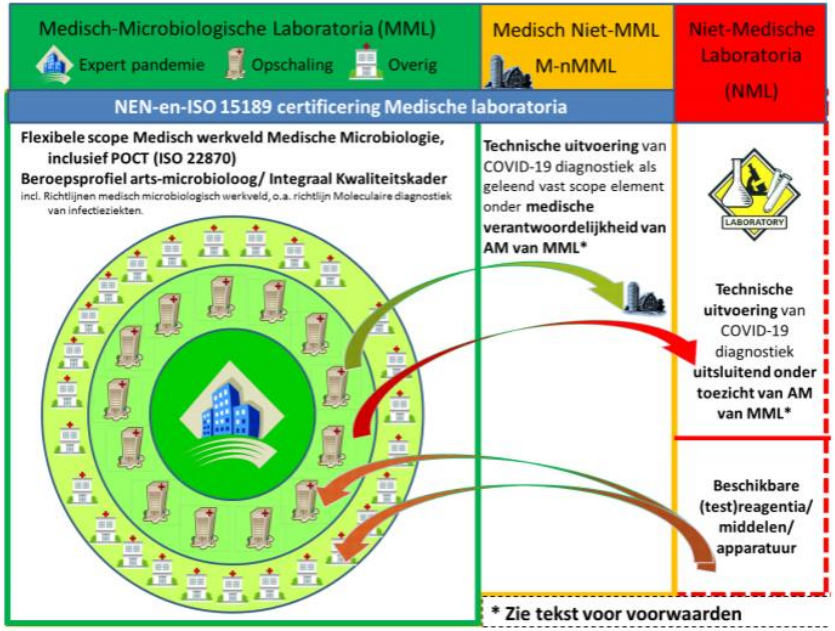
Date report(ed) and reference	Statement / definition
https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/testen/soorten-testen	**For who?** *Initially*, due to the limited testing capacity and the lack of a central overview on the existing testing capacity, *only hospital staff and sick patients* could be tested. In the months of April and May, *more professions and high risk populations presenting symptoms* were tested, in correspondence with the *unlocking strategy* e.g. health care professionals, teachers, childcare employees, police, supervision and enforcement employees, informal care, contact professions, employees in public transport, etc. The ultimate goal was to be able to *test everyone with symptoms*. This goal was achieved on *the first of June*.
https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/testen/afspraak-maken June 2nd https://www.youtube.com/watch?v=ZxZOLFd4ZJk&feature=youtu%2Ebe June 11th https://www.youtube.com/watch?v=ArqP15ZiV2g&feature=youtu.be https://ggdghor.nl/thema/testen-covid-19/	**For who?** As of June 1st, testing will be available for all citizens presenting symptoms of COVID-19 infection (see section 1.3.1) **How?** • The person with COVID-19 symptoms should call a telephone number (0800-1202) and stay at home (except for the test). • During the call the person should indicate his/her 'citizen service number' (I.D. or passport or driver license). • An appointment will be made and confirmed by email and SMS. • Testing is free of charge for the patient. • The person has to drive to the test location* (location nearby a GGD, or drive-in / drive-through location (person stays inside of the car for testing)) at the scheduled time and takes his/her ID and confirmation of appointment (email/SMS). • PCR test is conducted in the nose and throat by a staff member of the testing facility. • After the test, the person tested should return immediately to home and stay home until the result of the test is known. • The result will be telephoned to the person as soon as possible. **By Whom?** *The **GGD** is responsible for testing and tracing. Since the 6th of April, 25 GGD's have together more than 80 testing facilities in the Netherlands. In case of high-risk population or severe illness (e.g. high fever) the general physician, treating physician or general practitioner's office should be called. The testing policy for COVID-19 is constructed by the **'Outbreak Management Team'** (OMT). They decide who can be tested. After every meeting of the OMT, the National Institute for Public Health and the Environment (RIVM) writes an advice for the ministry of Public Health, Wellbeing, and Sports (VWS). That advice is discussed in several boards and with the ministers. Ultimately the cabinet decides what happens with the advice and which groups of people receive which test.

7.2.3 Indications and conditions for serological testing

Date report(ed) and reference	Statement / definition
June 23th https://www.rivm.nl/coronavirus-covid-19/testen	Blood is taken from the patient, currently only in selected labs, and only for research purposes. These tests are especially used to see if there is immunization among the population and for other research purposes. Rapid serological tests (sold on the market) are NOT reliable and should not be used at home (cfr. WHO).

7.2.4 Laboratory capacity

Date report(ed) and reference	Statement / definition
June 4th https://lci.rivm.nl/covid-19/bijlage/aanvullend	*Since February 26th*: **2 reference labs** (Erasmus MC & RIVM-IDS), and **13 regional labs**. *Since the beginning of March*: **Other medical microbiological labs** can be validated if they comply to the following: • proficiency panel testing with good results (validation analytical specificity and correct detection SARS-CoV-2); • run control SARS-CoV-1 and SARS-CoV-2 dilution series with good result (validation of analytical specificity); • confirmation of 5 positive samples and 10 negative samples at one of the expert laboratories (RIVM-IDS or Erasmus MC) with good results (limited clinical validation). *Since April 1st*: Also **bioveterinary labs** and **HPV-screening labs** can be validated to perform SARS-COV-2 analyses. *Since June 6th*: Next to the 2 reference labs and 13 initial labs, 49 extra labs were validated. The criteria indicate that they should be able to assess at least 100 tests a day.



7.2.5 Communication of test results to the patient

Date report(ed) and reference	Statement / definition
June 4th https://lci.rivm.nl/covid-19/bijlage/aanvullend July 1st https://lci.rivm.nl/leefregels	Results of the test are available between **24-48h,** but the norm is to provide them as soon as possible. Results of diagnostics from Erasmus MC and RIVM-IDS: • To the hospitals: As soon as possible through telephone and via secure email ('caremail' or 'zorgmail') if available. It is important to mention a direct 24/7 telephone number of the physician-microbiologist, who should receive the test result, on the request form. • To the GGD: As soon as possible via secure email (zorgmail), until midnight. Positive as well as negative results. Later, a definitive report will be sent through secured email or by mail. The GGD will NOT be called by phone. For questions on the results, the GGD can contact a virologist of the reference centres by telephone. Result of diagnostics from GGD to the patient:

	• In case of a positive test:
	  ○ Patient is told to stay at home
	  ○ Information* is given to patient and housemates
	  ○ GGD investigates contacts and calls them: contact tracing is initiated.
	*There are numerous information leaflets available to inform the patient and their contacts.
	• Videos:
	  ○ https://www.youtube.com/watch?v=ZxZOLFd4ZJk&feature=youtu%2Ebe,
	  ○ https://www.youtube.com/watch?v=ArqP15ZiV2g&feature=youtu.be
	• Standard information letters (https://lci.rivm.nl/leefregels).
	  ○ Someone with (possible) symptoms of SARS-COV-2 infection
	  ○ Confirmed SARS-COV-2 infection:
	  ▪ Confirmed patient (& easy language version)
	  ▪ Positive test but no symptoms (yet)
	  ○ Housemates
	  ▪ Of a confirmed patient (& easy language version)
	  ▪ Positive test but no symptoms (yet)
	  ○ Close contacts
	  ▪ Of a confirmed patient (& easy language version)
	  ▪ Positive test but no symptoms (yet)
	  ○ Other contacts
	  ▪ Of a confirmed patient (& easy language version)
	  ▪ Of a confirmed patient at primary school or childcare
	These letters are all translated and available in Arabic, German, English, Polish, Romanian and Turkish.

7.2.6 Recording and surveillance of test results

Date report(ed) and reference	Statement / definition
June 25th https://www.covid19healthsystem.org/countries/netherlands/livinghit.aspx?Section=1.4%20Monitoring%20and%20surveillance&Type=Section	**Recording of cases** • *Since January 28th*, it is mandatory for health professionals to report COVID-19 cases and suspected cases to the Public Health Services. COVID-19 is considered an A-disease, which enables the government to take far-reaching measures to prevent the spread of the disease, such as isolation, mandatory quarantine, mandatory treatment or prohibition of professional practice. Other A-diseases are for instance MERS, SARS, smallpox and polio. However, because of the relatively mild symptoms for the majority of cases and the limited testing capacity, not all suspected cases can be tested.

	• *Since March 12th*, only confirmed (tested) cases have to be reported to the Public Health Services.
https://lci.rivm.nl/richtlijnen/covid-19	**Monitoring of source and contact tracing** (see section 1.5)
	Immunization across the population:
https://www.nivel.nl/nl/publicatie/weekcijfers-covid-19-patienten-de-huisartsenpraktijk-week-10-29-2-maart-19-juli-2020	Forty GP practices of the Nivel Primary Care Database regularly take sample swabs from people with influenza-like symptoms. Since 7 February, these swabs have also been tested for COVID-19. The aim is to provide a good overview of how the virus is spread over the Netherlands. For example, in week 12, 11% of the swabs contained the coronavirus. The positive swabs were mainly coming from patients living in the highly affected areas.

7.2.7 How is testing reimbursed?

Date report(ed) and reference	Statement / definition
June 2nd https://www.youtube.com/watch?v=ZxZOLFd4ZJk&feature=youtu%2Ebe https://ggdghor.nl/thema/testen-covid-19/ https://www.covid19healthsystem.org/countries/netherlands/livinghit.aspx?Section=4.2%20Entitlement%20and%20coverage&Type=Section	Testing conducted by the GGD (testing, lab process and communication of the results to the general practitioner) is free of charge for the patient and is paid by the Public Health Care budget (OGZ-budget). In principle, medically necessary care is available for all persons who need this in the Netherlands. COVID-19 services are covered by the Health Insurance Act, although patients have to pay the mandatory deductible (as in normal medical specialist care) when admitted to the hospital. No other out-of-pocket expenditure is applicable.

7.3 Isolation strategies and monitoring of confirmed cases

7.3.1 Suspected cases (having symptoms)

Date report(ed) and reference	Statement / definition
June 22 https://lci.rivm.nl/informatiebrief-niet-bevestigde-patient	**Suspicion of COVID-19 infection:** In case of symptoms of COVID-19 infection such as coughing, cold, increased temperature or fever (>38°C), or losing taste and/or smell: • Case should stay at home • In case of fever or dyspnea, housemates should also stay home • In case of becoming more sick or in case of high risk population or vulnerable people, the general practitioner or hospital should be called • Conduct PCR test (process PCR testing in section 1.2.2)

Before and after the PCR test awaiting the results, **following measures should be taken by the suspected case**:

- Stay at home, only exit the house for the PCR test.
- Housemates have to stay home in case you have fever/dyspnea.
- You can go in the garden or balcony, in case no other people are there.
- You cannot receive visitors, except for the general practitioner and GGD
- Only people who live with you, can be at your home
- Also housemates cannot receive visitors
- Stay as much as possible in your own room. Sleep alone.
- Housemates should not access that room.
- Limit contact with housemates and keep 1.5m distance (no kissing, no hugging, no sex)
- Use your own service (plates, cups, fork, knife, spoon, etc.) Wash separately preferably in a dishwasher.
- Throw your waste in a separate bag.
- Use your own towels and toothbrush
- Use a separate toilet and bathroom if possible. In case you have to share, clean the bathroom and toilet every day and ventilate by putting a window open during 30 min.
- Stay in a separate room and ventilate by opening windows. Clean regularly, also tap, switches, handles, etc. Use first regular soap for cleaning and clean frequently used surfaces. Take a new bucket with 5l water, add 125ml bleach (a cup of coffee). Throw a towel in the laundry. Wash your hands with water and soap afterwards.
- Use a paper napkin, cuff in the elbow, use a paper napkin only 1 time and throw it after usage in a plastic bag. Wash your hands.
- Wash hands regularly with water and soap (definitely after coughing, sneezing, toilet, eating, etc.)
- Limit the spread of faeces, urine, sweat, mucus, etc.
- Throw your laundry in a separate bucket and wash at min 40°C with a full washing program and normal soap.
- Write down with whom you had contact the last few days.

Of note, similar measures are also available to **inform housemates of a confirmed case and a confirmed case** see https://lci.rivm.nl/informatiebriefhuisgenootthuis

<u>If test is negative:</u>

- Housemates can exit house, unless they evolve symptoms themselves
- Index patients can exit the house, but if symptoms get worse a second test should be conducted.

<u>If test is positive</u>:

- Source and contact tracing by GGD (see section 1.4)
- Index patient and housemates stay home (see confirmed case 1.3.2)

Stick to the basic measures, even if you are not infected with SARS-COV-2.

7.3.2 Confirmed cases

Date report(ed) and reference	Statement / definition

May 28
https://lci.rivm.nl/informatiepatientthuis
 	
June 23
https://lci.rivm.nl/COVID-19-bco
	Confirmed case - asymptomatic infection:
	• Index case: isolation during 72h after testing
	• Housemates and close contacts: quarantine
	  ○ If the index case does not develop symptoms within 72h, exit isolation
	  ○ If the index case develops symptoms within 72h, the test is conducted in the pre-symptomatic phase. The policy on symptomatic infections should be followed.
	Confirmed case - symptomatic infection:
	• Index case: isolation at home 14 days
	• Housemates: quarantine at home 14 days
	  ○ Exit isolation when 24h symptom free AND 48h fever free AND at least 7 days after becoming symptomatic.
	  ○ In case of decreased resistance, exit isolation when 24h symptom free AND 48h fever free AND at least 14 days after becoming symptomatic.
	In case of severe sickness or increased symptom severity call the general practitioner.

7.4 Contact tracing strategy

7.4.1 Contact definition

Date report(ed) and reference	Statement / definition

June 23th
https://lci.rivm.nl/COVID-19-bco
	Contacts are categorized into:
	• **Housemates (Category 1)**: Living in the same place for a long-time at <1.5m distance from the patient.
	• **Other close contacts (Category 2):**
	  ○ Persons > 15 min at < 1.5m distance with the patient during the infectious period*. Health care professionals who wore protection materials following the guidelines are NOT considered as close contact.
	  ○ When exposure < 15 min but there was a high risk of infection e.g. cuffing in face, direct physical contact, kissing, etc.
	• **Other contacts (Category 3)**: Persons > 15 min at >1.5m distance of the patient during the infectious period e.g. office, class, meetings, etc. The contact tracing of these contacts can be later supplemented with anonymous track-and-trace apps, specifically for contacts who cannot be approached by the index patient.
	*infectious period: starts 2 days before the clinical signs and ends if the patient is 24h free of clinical signs (48h fever free) and minimum 7 days (14 days in case of immunocompromised patients) after the start of the symptoms.

In asymptomatic infections, look back at contacts 2 days before the test.

7.4.2 Organisational process of contact tracing

Date report(ed) and reference	Statement / definition
April 21st (https://nos.nl/nieuwsuur/artikel/2331268-grootschalig-contactonderzoek-nodig-maar-wie-moet-dat-gaan-doen.html).	• Discussions on capacity • National protocol not (yet) available • Since the first confirmed case, contact tracing was in place for confirmed cases. Since 12 March, contact tracing has focussed on groups of vulnerable patients. Contract tracing is done to inform contacts of confirmed cases, especially those in high-risk groups, and highlight the importance of maintaining high hygiene standards and staying at home when symptomatic. (see: https://lci.rivm.nl/richtlijnen/covid-19)
May 8th (https://nos.nl/nieuwsuur/artikel/2333281-protocol-voor-contactonderzoek-kent-twee-grote-zwakke-plekken.html).	• Citizens are asked to inform their contacts by themselves. • Informed contacts are asked to proactively report to the public health organization whether they have symptoms.
June 23th https://lci.rivm.nl/COVID-19-bco	As of June 1st, contact tracing will be conducted in case of a positive test. **The goal of source- and contact tracing?** • to identify the possible source • to identify contacts • to inform and guide them on the risk of COVID-19 infection • to point out the measures that need to be taken to prevent further dissemination Special attention should be given to contact tracing of vulnerable contacts and contacts who work with vulnerable persons, such as health care professionals. The role of source and contact tracing differs from phase of the pandemics. In an exit or transition phase (current phase), all contacts should be traced to curb the epidemics. Contact tracing shortens the duration between the clinical signs and the start of isolation measures, and reduces therefore the transmission. **Protocol available?** Ministry of Wellbeing, environment and sports guideline protocol for source and contact tracing: • Protocol is based on ECDC protocol. • Execution is the responsibility of the local health authority (the 'GGD' or 'Gemeentelijke Gezondheidsdienst'). Different protocols are available for testing, source and contact tracing and in case of outbreaks. **How?** In a confirmed case, the GGD ('Gemeentelijke gezondheidsdienst', local health authorities) starts source- and contact tracing. If the capacity for the GGD is not sufficient, the GGD can scale up nationally. This allows complex source and contact tracing to be carried out in the region.

	Source tracing:
	• The patient is asked where/how (s)he might got infected
	• Watch out for local, regional or national clusters of confirmed cases. Conduct more investigation and take if necessary supplementary measures.
	Contact tracing:
	• GGD initiates contact tracing asap and within 24h, after receiving notification of a confirmed case.*
	• Rapid notification by treating physicians and lab are essential including patients' contact details.
	***Source and contact investigation conducted by GGD**:
	• Discuss who could have infected you (source)
	• Discuss which people you met during last days (contact)
	  ○ The GGD informs them (by phone) that they were in contact with an infected person and could possibly be infected also.
	  ○ The GGD provides information on what they should do.
	  ○ The GGD calls the housemates and close contacts a few times (at least on day 1, 7, and 14) to verify (possible) symptoms and measures.
	  ○ Contacts that present symptoms that could be related to COVID-19 should call the GGD for rapid testing.
	Each contact tracing procedure is custom work and is concentrated on the 3 categories of contacts (see section 1.5).

7.4.3 Testing of contacts

Date report(ed) and reference	Statement / definition
https://lci.rivm.nl/COVID-19-bco	Contacts are **only tested in case they present symptoms** such as: One or more of the following symptoms: • colds such as rhinitis, nose cold, sneezing, sore throat; • (minor) coughing; • sudden loss of smell and/or taste (without nasal congestion); • shortness of breath; • increase or fever > 38°C And other symptoms that may fit COVID-19 infection, sometimes in combination with the above stated symptoms: • general malaise; • headaches; • muscle pain; • pain behind the eyes;

	• fatigue and anorexia Less common symptoms: • chills; • general pain; • breathing pain; • dizziness; • hoarse voice; • irritability/confusion/delirium; • abdominal pain; • diarrhea; • nausea/vomiting; • conjunctivitis; • various skin abnormalities **Since the current policy is based on intensive source and contact research, a contact of a COVID-19 patient will be easily tested if there are indications of one of the complaints from the entire broad palette of COVID-19 complaints.**

7.4.4 Contact tracing Apps

Date report(ed) and reference	Statement / definition
June 25th https://www.covid19healthsystem.org/countries/netherlands/livinghit.aspx?Section=5.1%20Governance&Type=Section (https://nos.nl/artikel/2330914-overheid-presenteert-zeven-corona-apps-maar-nog-veel-zorgen.html ; https://www.nrc.nl/nieuws/2020/04/21/kabinet-houdt-vast-aan-app-in-strijd-tegen-covid-19-a3997460)	The OMT suggested that intensified contact tracing should be one of the conditions for relaxing COVID-19 restrictions (current phase). The Public Health Organisations (GGD's) are responsible for contact tracing, but they might lack the capacity. Following this recommendation, the government studied the idea of a COVID-19 app for mobile phones. A tender was issued and **7 apps were evaluated**, but after an initial assessment **none of these appeared to meet the privacy criteria**. At present, the **government itself is developing such an app** with a group of experts and with the prerequisite that the app has to be open source in order to show the population that their privacy will be protected.
June 25th https://www.rijksoverheid.nl/onderwerpen/coronavirus-app/nieuws/2020/06/24/coronavirus-app-test-in-twente	At the beginning of July, users will be able to test a **corona-notification-app** in the region of Twente. It is a **pilot** to see if the app is in congruence with privacy, user friendliness and safety. The app will be used supplementary to the regular source and contact tracing of the GGD. The app remembers e.g. train contacts, street contacts etc. It works through Bluetooth technology. It is aimed that the cabinet can decide mid-July on the use of the app.

7.5 Quarantine strategies and monitoring of contacts

Date report(ed) and reference	Statement / definition
June 23 https://lci.rivm.nl/COVID-19-bco June 1, https://lci.rivm.nl/lci.rivm.nl/covid-19/bijlage/zorgmedewerkersinzetentestbeleid	**Quarantine strategies for 3 categories of contacts:** 1. **Housemates (Category 1)**: The GGD informs all housemates (also children) orally and written with the following advice: • Quarantine at home during 14 days after the last contact with the confirmed patient i.e. telework, no public transportation, no visitors - especially not with a high risk to be infected. • Taking care of cough- and hand hygiene. • To be alert, during 14 days, for clinical signs and symptoms of COVID-19 (coughing and/or nose cold and/or fever) and (i) in case of suspected fever (≥38°C) measuring temperature (rectal or via the ear), (ii) call GGD immediately for appraisal and diagnostics. • GGD should be able to contact you during the period of quarantine. In case the housemates show clinical signs/symptoms of SARS-COV-2 infection, the GGD is responsible for testing them asap. Exit quarantine for housemates: • 14 days after the last moment of contact with the confirmed case, or 14 days counting from the day the confirmed case is symptom free AND at least 7 days after the start of the symptoms (14 days in immunocompromised patients) • And the housemate is symptom free during this period. Telephone call from the Municipal Health Service (GGD) to housemate at the beginning of the contact tracing, around day 7 (half-way) and day 14 (end) of the monitoring period, to follow up quarantine measures and discuss symptoms. Transmission within members of the same family can lead to prolongation of the monitoring period. The moments to call are adjusted. People working in the vital sector / crucial professions stay at home in quarantine. There are exceptions in consultation with GGD and the company physician, and only when they are asymptomatic. 2. **Other close contacts (Category 2):** The GGD informs other close contacts orally and written with the following advice: • Quarantine at home during 14 days after the last contact with the confirmed patient i.e. telework, no public transportation, no visitors - especially not with a high risk to be infected. • Children ≤ 12y can go to school and play sports. • Keep at least 1.5m distance from other persons if you come out of home. • Taking care of cough- and hand hygiene • To be alert, during 14 days, for clinical signs and symptoms of COVID-19 (coughing and/or nose cold and/or fever) and (i) in case of suspected fever (≥38°C) measuring temperature (rectal or via the ear), (ii) call GGD immediately for appraisal and diagnostics

The GGD should test ‘other close contacts’ asap if they present symptoms of SARS-COV-2 infection. Pending test results, they stay strictly at home and make an overview of their own contacts from 2 days prior to the symptoms.

Telephone call from the GGD around day 7 (half-way) and day 14 (end) of the monitoring period, to follow up measures and discuss symptoms.

People working in the vital sector / crucial professions also stay at home. An exception can be made for these groups in consultation with the GGD and the company physician and only if they are asymptomatic. For care workers outside the hospital: see Testing policy and deployment of care workers.

If a contact 14 days after the last moment of contact with a COVID-19 patient has remained complaint-free, no infection has occurred and the contacts can rejoin society just like other citizens.

3. **Other contacts (category 3):** The GGD ensures that contacts are informed about the determination of COVID-19 in a person in their environment.

The contacts are advised:

- good cough and hand hygiene;
- take general measures to prevent COVID-19 (social distancing);
- be alert during the 14 days after the last contact for symptoms of infection, and
- in case of suspected fever (≥ 38.0ºC), measure the temperature (rectal or through the ear)
- call the GGD directly for assessment and use diagnostics;
- to stay at home at the moment of symptoms.

The GGD ensures that contacts are tested for SARS-CoV-2 as soon as possible if symptoms fit COVID-19.

In anticipation of the test results, they stay strictly at home and make an overview of their own contacts from 2 days prior to the symptoms.

Quarantine strategies for contacts of specific groups:

1. **For contacts in child care and primary education**:

- If an adult or pupil in primary education or child care is diagnosed with COVID-19, colleagues and peers are informed in accordance with policy category 3 (other (not close) contacts), and are tested in case of symptoms.
- Exceptions are intensive contacts between children and adults, such as during the care of very young children at a children's centre or lowest groups in primary education. In these cases, the child and the adult are considered to be category 2 contacts (other close contacts).
- Adult category 2 contacts in childcare and primary education are in principle not allowed to work.
- Children designated as category 2 contacts in childcare and primary education are in principle allowed to go to a childcare centre or primary school, provided they have no complaints

2. **Health care practitioners outside hospitals** (different sectors)

Suspected health care practitioner with symptoms:

- Everyone should stay home when having symptoms of COVID
- Health care practitioners and housemates should let them test immediately when having symptoms

- The symptomatic person stays home until the test results are available. If the person has fever / dyspnea, the housemates should stay also home until the results are known.

Test negative: health care practitioner with mild symptoms and NO fever can work again.

Test positive: source and contact tracing GGD. Index and housemates stay home until 2 weeks after last contact at home. Index stays at home at least 7 days after the start of the symptoms (or test) AND 48h fever free (<38°C without t° control medication) AND 24h symptom free.

Asymptomatic health care practitioner (different scenarios):

- Housemate COVID 19 positive: stay home until 14 days after last contact (exceptionally the health care practitioner may work in communication with the GGD or company doctor, with the use of type II mask and gloves.
- Close contact COVID 19 positive: health care practitioner may work (till 14 days after last contact, the health care practitioner should use mask of type II and gloves)
- Housemate with respiratory complaints and fever / dyspnea: health care practitioner may work (till test result is known, the health care practitioner should use mask of type II and gloves)

3. Foreign travellers in the Netherlands

If foreign travellers staying in the Netherlands test positive for COVID-19, the Dutch guidelines are used.

- The GGD of the region where the traveller is staying carries out the contact test in the Netherlands.
- If the index was also abroad during the infectious period, the GGD informs the Centre of Infectious Diseases (LCI) (https://cib.healthandsafety.nl/).
- Foreign travellers in home isolation or quarantine are not allowed to travel, not even to their country of origin. If this is nevertheless necessary, the Centre of Infectious Diseases will be consulted. If a tourist leaves the Netherlands without permission, the GGD will inform the LCI.(more info https://cib.healthandsafety.nl/)

4. Aircraft Contact Policy

Contact research of aircraft contacts is started:

1) if the index has been on board of an aircraft during the infectious period

The following aircraft contacts are defined as 'other close contact' (category 2):

- Passengers seated within 2 seats away from the front, back and side of the index (max 24 contacts), where the aisle is considered as a row of seats and aircraft compartments/sections as a boundary. (see also www.seatguru.com)
- Crew members who have had intensive contact with the index (e.g. because extra care has been provided).

If the index is a passenger, the data of the index will be transmitted to the GGD of the airport of arrival via secure mail connection.

2) If a crew member was contagious:

The following aircraft contacts are defined as 'other close contact' (category 2):

- passengers with whom this crew member had intensive contact (e.g. because extra care was provided)
- directly cooperating colleagues who had > 15 min of continuous contact at a distance < 1.5 m. In practice, these will often be the crew members who worked in the same compartment or section.

- Other crew members are considered to have had other non-high level contact if they have had non-intensive contact with the index (category 3)

If the index is a crew member who has flown during the contagious period, the contact tracing shall be coordinated with the arrival airport GGD. (more info https://cib.healthandsafety.nl/)

Monitoring of source and contact tracing:

To monitor the effects of source and contact tracing the transfer of daily information from the electronic patient file (checkbox) to the National Institute of Public Health and the Environment is done and used already at the beginning of the pandemics. In the electronic patient file the following data is reported:

- personality characteristics (gender, year of birth, postal code);
- link to index (Osiris number) or situation;
- contact category;
- first and last day of exposure;
- monitoring period;
- call contacts during monitoring period;
- occurrence of complaints including first day of illness and type of complaints;
- collected diagnostics;
- GGD region.

Regular evaluation will take place to adjust policy where necessary and possible.

7.6 Early case detection methods

7.6.1 Surveillance based indicators used to detect early cases

Date report(ed) and reference	Statement / definition
June 23 https://lci.rivm.nl/covid-19-testbeleid%20personen%20zonder%20klachten	Currently, the GGD and institutions should pay attention to clustering of confirmed cases. **Testing of asymptomatic persons?** Here you may find a policy on testing asymptomatic persons https://lci.rivm.nl/covid-19-testbeleid%20personen%20zonder%20klachten. • Asymptomatic persons could be tested to prevent outbreaks. • It is still unknown to which extent asymptomatic people contribute to infections (subject of current research). • Several studies have shown that testing people without symptoms can help to map out the extent of distribution. • Testing people without complaints also has disadvantages, because results are difficult to interpret and have a *limited negative predictive value*. In this phase of the pandemic, testing policy is used to monitor virus circulation as closely as possible, as part of the policy to limit the spread of the virus as much as possible and thus prevent and significantly dampen a second wave. On the basis of current knowledge, it is unclear whether differences in testing policies where people are tested without symptoms actually contributed to containment. • Asymptomatic testing has added value in well-defined groups, where there is an outbreak (suspicion of an outbreak) (where the expected pre-test probability is higher than the percentage of positives in the general population), and the findings have consequences for the policy to be followed to prevent the spread of SARS-CoV-2. • Indication for asymptomatic testing can take place in consultation with the GGD, LCI and/or in consultation with the infection prevention department of the hospital in the context of a hospital outbreak. • Asymptomatic testing may also be useful in case of admittance in elderly care or in case of source and contact tracing in combinations with a potential app. • In the examples mentioned, asymptomatic testing helps to map the extent of spread and is therefore currently being researched.

7.6.2 Identification of clusters

Date report(ed) and reference	Statement / definition
June 23th https://lci.rivm.nl/COVID-19-bco	In a confirmed case, **the GGD** starts source- and contact tracing and should therefore pay attention to local, regional or national clusters of confirmed cases. They should conduct more investigation and take if necessary supplementary measures. In **institutions,** staff should pay attention at confirmation of several infected cases. The advice is not to make a distinction in the type of sector in which the outbreak takes place. Asymptomatic testing of patients/residents and/or healthcare personnel can also play a role in outbreaks within healthcare institutions. Specific regulations on outbreak for primary schools and childcare (see under)

7.6.3 In hospitals

Date report(ed) and reference	Statement / definition
June 24 https://lci.rivm.nl/covid-19-testbeleid%20personen%20zonder%20klachten	Only patients with **symptoms** (at triage, at gate) are tested on COVID-19, thus not all patients who enter the hospital.

7.6.4 In nursing homes and other collective facilities

Date report(ed) and reference	Statement / definition
June 24 https://lci.rivm.nl/covid-19-testbeleid%20personen%20zonder%20klachten	Only patients with **symptoms** are tested. Asymptomatic testing could be of added value in elderly people in care institutions, for example at the time of admission to a care institution, as it has been shown that the clinical presentation of COVID-19 in this group can be very variable, and there is an increased risk of serious course. Currently, the role of SARS-CoV-2 spread by atypical or asymptomatic infections in nursing homes is being investigated. Based on the results of this research, a specific advice can be drawn up.

7.6.5 In schools

Date report(ed) and reference	Statement / definition
June 23th https://lci.rivm.nl/handreiking-uitbraakonderzoek-covid-19-op-kindercentra-en-basisscholen	**So far there have been no outbreaks among children in schools or children's centres** in the Netherlands. When asked about all 25 GGDs, there appears to **have been no report of possible COVID-19-clusters related to** (emergency care for) **school or child care before school closure from 16 March to 11 May**. In this period the schools were closed and there was only child care for parents in crucial/vital professions. After the reopening of primary education and childcare, some infections were reported among staff

members at schools. As far as is known, there are no staff members who have been infected by children. The international literature also supports the conclusion that children and schools do not seem to play an important role in the transmission of SARS-CoV-2.

1. In general:

- Anyone with symptoms of COVID-19 stays at home and can be tested.
- If the person presents symptoms, all housemates should stay at home until after the test result.

Negative test: children present mild symptoms, they are allowed to go to school or children's centre and do not have to stay at home.

Positive test:

- source and contact tracing by the GGD
- housemates stay at home until 2 weeks after the last contact.
- a positive tested case remains at home at least 7 days after the start of symptoms and 48 hours fever free and at least 24 hours symptom free.

2. For children applies:

If the child's symptoms are recognizably unrelated to a pre-existing disorder (such as hay fever or asthma), the child may attend school or children's centre.

If the pattern of symptoms changes or if new symptoms arise in addition to the known pattern of symptoms, the child remains at home until these new symptoms have passed or the known pattern of symptoms has returned.

Any child with newly developed rhinitis symptoms or a change in the pattern of symptoms can be **tested at the request of the parents**. It is **especially important to test the child if it is a contact of a proven COVID-19 patient or if the parents have complaints that may fit COVID-19.**

If in a group of a primary school **3 or more children have complaints that fit COVID-19, it is advised to test these children.**

In case of mild symptoms with children, they are allowed to go to school or children's centre and do not have to stay at home.

3. First study among 54 families by RIVM shows this:

- no evidence that children are a major source of infection in the spread of the new coronavirus;
- spread of SARS-CoV-2 among children or from children to adults is less common than among adults or from adults to children;
- most of the spread occurs among adults and from adult relatives to children.

4. Adults in childcare and primary education should be kept as far away as possible from other adults and children as much as possible. This condition includes all contacts of positive adults in a children's centre or at a primary school in category 3 (other (not close) contacts). In practice, however, maintaining a 1.5-metre distance between adults and children, especially in childcare and in the lower groups of primary education, will not always succeed.

5. Children from 0 to 12 years of age do not keep a distance from each other, but they do keep as much as possible 1.5 metres distance from adults. This condition includes all contacts of positive children in a children's centre or at a primary school in category 3 (other (not close) contacts)). In practice, however, maintaining a 1.5-metre distance between adults and children, especially in childcare and in the lower groups of primary education, will not always succeed.

6. Specific advice for contacts in childcare and primary education:

- In principle, if COVID-19 is established in the case of an adult or pupil in primary education or child care, colleagues and peers are informed in accordance with policy category 3 (other (not close) contacts) and are tested in case of complaints.
- Exceptions are intensive contacts between children and adults, such as during the care of very young children at a children's centre. In these cases, the child and the adult are regarded as category 2 contacts (other close contacts)(see protocol contact).
- Adult category 2 contacts in childcare and primary education are in principle not allowed to work.
- Children who have been designated as a category 2 contact in childcare and primary education are in principle allowed to go to a childcare centre or primary school, provided they have no complaints.

Testing policy, contact tracing and measures taken for 6 possible scenario's in adults working with children in children's centre or primary education.

1. An employee reports sick and has a suspicion of COVID-19

- does not go to work
- gets tested on COVID-19
- stays at home in isolation awaiting the test result

2. An employee is reported to the GGD as confirmed COVID-19

- does not go to work
- stays at home in isolation

In cooperation with the school management and the youth doctor, the GGD conducts source and contact research around the employee.

The same applies to the employee's contacts within the children's centre or primary school:

- adults and children who had prolonged contact (> 15 minutes) at a distance of > 1.5 metres with the staff member, in the same room, for example in the classroom or during meetings, are regarded as a category 3 contact (other (not close) contacts) and are allowed to go to school or continue working;
- adults and children who had prolonged contact (> 15 minutes) at a distance of < 1.5 metres with the employee, or who had a high-risk exposure of < 15 minutes, are considered as a category 2 contact (other close contacts); adults are in principle not allowed to work, children are allowed to go to a children's centre or primary school, provided they have no complaints;
- persons without contact with the employee are excluded from contact examination.

3. A child reports sick and has a suspicion of COVID-19

- does not go to school,
- gets tested on COVID-19**
- stays at home in isolation awaiting the test result

4. A child is reported to the GGD as a confirmed case of COVID-19

- home isolation

In cooperation with the management of the children's centre or primary school and the youth doctor, the GGD conducts source and contact research on the child. This applies to the contacts of the child within the children's centre or primary school (staff and children):

	○ an employee who has had more than 15 minutes of intensive contact with a tested positive child (feeding, changing, comforting) is considered a category 2 contact (other close contacts) and in principle is not allowed to work; ○ the other adults and group and classmates are in principle all considered as a category 3 contact (other (not close) contacts) and are allowed to go to school or children's centre; ○ persons without contact with the child are excluded from contact examination. **5. ≥ 3 children from a group/class or several staff members report sick and have a suspicion of COVID-19** The school/children's centre notifies the IZB ('infectieziekteverspreiding' doctor) physician (and the youth physician) of the GGD in question on the basis of art. 26 of the Public Health Act. If necessary, in consultation with the GGD, the school informs the parents that the GGD will contact them. The GGD advises to: ○ test the sick children/employees for COVID-19 ○ stay at home in isolation awaiting the test result Test result: ○ negative: the persons are allowed to go to school provided they are not ill. ○ In case of 1 positive test: apply scenario 2 or 4. ○ In case of multiple positive tests in the group, class or school: **cluster/breakout** apply scenario 6**.** **6. Cluster/outbreak-out scenario: multiple staff and/or children tested positive or reported to the GGD with suspicion COVID-19** ○ The GGD in cooperation with the management of the children's centre / elementary school, carries out source and contact research on the positive staff members and/or children. ○ Under the guidance of the IZB-doctor, the GGD in question starts an outbreak investigation to map out the situation at school. ○ The GGD advises the school on the provision of information to the parents. ○ Other staff members and children are registered whether they have complaints and whether they have been or can be tested. Depending on the context, only the group/class or several groups/classes are questioned. ○ In case of an outbreak with > 3 confirmed children/adults, consider further outbreak diagnostics (and/or also whole genome sequencing (WGS)). ○ Policy for children's centres/schools can be tailored to the results of the outbreak investigation. Outbreak investigation and WGS: ○ Consider also testing asymptomatic children and staff in case of a large outbreak. GGD's can consult with the LCI to make a choice. ○ Consider also to have WGS performed on all positive samples.
6th May 2020 HSRM https://www.rivm.nl/coronavirus-covid-19/testen	As of 6 May, tests will also be available for primary school teachers, child day care workers, and those with professions that require physical contact.). Testing will be done after triage by a physician.

7.6.6 Precarious population

Date report(ed) and reference	Statement / definition
18th May 2020 HSRM	As of 18 May, tests will also be available for informal carers and paid carers that are hired by a patient living at home (https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/richtlijnen/20 20/05/12/richtlijn-testbeleid-mantelzorgers-vrijwilligers-palliatieve-zorg-en-pgb-gefinancierde-zorgverleners/Richtijnen+mantelzorgers+PGB+en+vrijwilligers.pdf). Testing is not available upon request for individual citizens, and is only done after triage by a physician.
	As of June 1st, all patients presenting **symptoms** of COVID-19 can be tested.

7.7 Coordination and responsibility of testing and tracing

Date report(ed) and reference	Statement / definition
	To monitor the effects of source and contact tracing the transfer of daily information from the electronic patient file (checkbox) to the **National Institute of Public Health and the Environment** (Art 26 of the Public Health Act) is done and used already at the beginning of the pandemics. In the electronic patient file the following data is reported (see section 1.5) Since June 2020, according to the protocol, **Regional Health Services i.e. GGDs** will perform **source and contact investigations on all reported persons**.

Colophon

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Disclaimer:	This document is a rapid review of scientific literature retrieved from several publicly funded COVID-19 resource collections. The literature included in these repositories is not always peer-reviewed or externally validated. KCE synthesised the evidence in a short time frame to respond to urgent questions and could therefore not follow its regular methodological procedures. This work is used to inform guidance of other governmental agencies (like Sciensano, CSS/HGR, AFMPS/FAGG and SPF/FOD).
Publication date:	29 July 2020
Legal depot:	D/2020/10.2733/14
ISSN:	2684-5830
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