

# Public health measures and strategies to limit the spread of COVID-19: an international review

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# **Version history**

Version	Date	Specific updates	
V1.0	24 November 2020	Provided to the National Public Health Emergency Team (NPHET) for information.	
V2.0	1 December 2020	Updated and provided to NPHET for information.	
		<ul> <li>Included an additional table (Table 1) to summarise the recent changes in current public health measures.</li> </ul>	
		<ul> <li>Updated the epidemiological data to the latest available data from the European Centre for Disease Prevention and Control (ECDC).</li> </ul>	
		<ul> <li>Included information on the proposed plans for mass testing in Austria.</li> </ul>	
V3.0	8 December 2020	Updated and provided to NPHET for information.	
		<ul> <li>Updated the epidemiological data to the latest available data from the European Centre for Disease Prevention and Control (ECDC).</li> </ul>	
V4.0	15 December 2020	Updated and provided to NPHET for information.	
		<ul> <li>Updated the epidemiological data to the latest available data from the European Centre for Disease Prevention and Control (ECDC).</li> </ul>	

# **About the Health Information and Quality Authority**

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children, Equality, Disability, Integration and Youth, HIQA has responsibility for the following:

- Setting standards for health and social care services Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.
- Regulating social care services The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.
- Regulating health services Regulating medical exposure to ionising radiation.
- Monitoring services Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.
- Health technology assessment Evaluating the clinical and costeffectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.
- Health information Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.
- **National Care Experience Programme** Carrying out national serviceuser experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.

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# **Key points**

- Since October 2020 there has been a resurgence in the incidence of COVID-19 in the 17 European countries included in this review. In some countries, including Austria, Belgium, Czechia, and Switzerland, the 14-day incidence surpassed 1,000 cases per 100,000 population. Although the growth in new cases was slowing or declining across most countries during November, the 14-day incidence of new cases increased in a number of countries between 7 and 14 December, including Czechia, Denmark, France, Germany, Ireland, the Netherlands, Sweden, and the UK.
- Following on from the increase in the incidence of new cases since October 2020, most countries have experienced a corresponding increase in the number of new deaths due to COVID-19. However, the 14-day death rate per million population is now declining in most countries, excluding Denmark, Germany, and Portugal, where the rate has increased between 7 and 14 December.
- Across many countries the impact of the increase in COVID-19 cases is also being observed through increased hospitalisations and admissions to intensive care:
  - To date, hospitalisations and admissions to intensive care have been highest in Belgium, Czechia, and Italy; hospitalisations surpassed 60 per 100,000 population in these countries in November 2020.
  - Admissions to hospital and intensive care are decreasing or stabilising across most countries; however, in Denmark, the rate of hospitalisations per 100,000 population increased between 29 November and 6 December (latest available data).
  - Despite the recent increase in the rate of hospitalisations in Denmark, the numbers in hospital and intensive care have remained low relative to other countries, as they have in Ireland; the latest data suggest the number of people in hospital due to COVID-19 is approximately 5 per 100,000 population in both countries, while the number in intensive care is as low as 1 per 100,000 population.
- A number of jurisdictions, including Austria, Belgium, Czechia, Denmark, England, France, Ireland, Italy, Netherlands, Portugal, Spain, and Scotland, have developed frameworks or systems for living with COVID-19, which assess the level of risk associated with the virus and the type of public health measures, or restrictions, that are needed to contain it.

- To guide decision-making on public health measures, a variety of epidemiological parameters are being monitored internationally including the 14-day incidence of COVID-19 cases per 100,000 population, mortality rate, test positivity rate. Decisions to escalate or de-escalate public health measures also take hospital statistics into consideration, which may lag behind changes in the incidence of the disease.
- Internationally, restrictions have been applied at different levels. Some jurisdictions are applying restrictions at a nationwide level (for example, Ireland, the Netherlands and Wales), others are doing so at both a nationwide and regional level (for example, Denmark, Portugal and Switzerland) while others are applying restrictions solely at a regional/area level (for example, England, Italy and Scotland).
- The situation remains extremely fluid with restrictive measures under constant review across Europe.
- Between 4 December and 11 December, 38 municipalities in Denmark moved from Level 3 (applied nationwide to date) to Level 4 (second highest risk level), with additional local restrictions introduced. Restrictions have also been tightened and or extended in Czechia, Denmark (nationwide), France, the Netherlands, Portugal and Switzerland.
- Between 4 December and 11 December, restrictions on both movement and retail operations have been eased somewhat in Austria and schools for those aged six to 14 years have reopened. Restrictions have been eased more broadly in Northern Ireland following the end of a two week circuit breaker. All 11 regions that were in Level 4 (highest protection level) in Scotland have now moved to Level 3. The number of 'Red' (highest risk level) regions in Italy has fallen from five to one.
- Since 11 December, the strictest lockdown to date has been announced in the Netherlands (effective 15 December), with further restrictions also announced in Germany (effective 16 December) and Switzerland (effective 12 December). Tier 3 (highest alert level) restrictions will be applied in a number of additional regions in England from 16 December.
- While the type of measures that have been applied are generally consistent across countries, the detail varies considerably particularly in terms of restriction of movement, numbers permitted at gatherings and events and the operating hours of businesses within the hospitality sector.
- As a national strategy, individuals displaying symptoms consistent with COVID-19 are prioritised for testing in each of the countries included in this review. In

Denmark and France, however, testing is provided for anyone that requests a test, irrespective of the presence of symptoms.

- Most countries have expanded testing to also include screening of asymptomatic individuals in certain settings (for example, serial testing of staff and residents in residential care facilities, such as in Austria, Czechia, Denmark, England, Italy, Ireland, Northern Ireland, Scotland, Spain, Sweden and Wales).
- With the exception of Austria, which has made rapid antigen tests available to the general public (anyone aged 10 years or over) through a voluntary free-ofcharge mass testing programme over December, population-wide testing has yet to be implemented in any of the other included countries.
- Jurisdictions such as Denmark, England, Ireland, Northern Ireland, Portugal, Scotland and Wales have developed a centralised approach to contact tracing, which is implemented by a national body. Other countries such as Belgium, Spain, Italy, Germany, the Netherlands and Switzerland employ a more decentralised approach, whereby contact tracing is devolved to individual health authorities, for example.
- Apart from Sweden, all of the countries included in the review have employed a mobile application to supplement contact tracing.

# 1 Background

Since the onset of the coronavirus disease 2019 (COVID-19) pandemic in early 2020, governments across the globe have applied restrictive public health policy measures, or non-pharmaceutical interventions, at various stages, and with different levels of intensity, to reduce or slow down transmission of the virus. National testing strategies have been developed to identify cases of COVID-19 in symptomatic individuals and expanded over the course of the pandemic to identify and isolate asymptomatic cases through preventive screening programmes. Mass testing programmes have also been implemented to rapidly identify and isolate cases in high-risk areas, for example, as well as across populations. To further interrupt chains of transmission, governments, either at a national or local level, have been tracing contacts of confirmed cases to isolate potentially infected individuals in the community. In some situations, enhanced contact tracing measures have been deployed to identify the index case, as well as any close contacts. Governments have also relied on technology as a means to either solely identify close contacts of a confirmed case, or to support traditional contact tracing efforts. The Health Information and Quality Authority's (HIQA's) Health Technology Assessment (HTA) Team has been requested to review the public health measures and strategies that are being used internationally to limit the spread of COVID-19.

# 2 Methods

A detailed summary of the methods used for this review is provided in the protocol: *Public health measures and strategies to limit the spread of COVID-19: an international review*, available on <a href="www.hiqa.ie">www.hiqa.ie</a>. Briefly, the review focuses on the national response to COVID-19 in 17 countries that were experiencing a resurgence in COVID-19 cases in October 2020 and which were identified by NPHET as being in a similar phase of pandemic response as Ireland. The countries comprise 12 EU/EEA countries (Austria, Belgium, Czechia, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden), the UK (England, Northern Ireland, Scotland and Wales), and Switzerland.

A number of key epidemiological parameters were extracted as part of the review for the purposes of describing the current epidemiological situation in each country. The data were sourced directly from the European Centre for Disease Prevention and Control (ECDC).<sup>(1)</sup> Since the data for the UK are aggregated, a breakdown of the epidemiological data by country is not provided. The epidemiological parameters include the:

- 14-day notification rate of newly reported COVID-19 cases per 100,000 population
- 14-day notification rate of newly reported COVID-19 deaths per million population
- daily hospital occupancy rate (number of COVID-19 patients in hospital on a given day per 100,000 population); where this information is not available, the weekly number of admissions to hospital due to COVID-19 is presented
- daily intensive care unit (ICU) occupancy rate (number of COVID-19 patients in ICU on a given day per 100,000 population); where this information is not available, the weekly number of admissions to ICUs due to COVID-19 is presented
- weekly number of tests performed per 100,000 population
- percentage of COVID-19 tests performed weekly that are positive.

Information on public health measures (that is, restrictive measures or non-pharmaceutical interventions) that are currently in place to limit the spread of COVID-19 was sought from government resources. The public health measures of interest include those related to:

- movement of people (for example, stay at home measures or curfews)
- social or mass gatherings
- education
- business activities
- sporting activities
- religious activities
- travel (domestic and or international)
- extended use of face coverings
- special arrangements for the Christmas or end of year holiday period.

Where countries have developed detailed frameworks for living with COVID-19 at varying levels of community transmission, for example, this information was extracted, alongside any criteria that are being used to inform a change in public health measures, or level of restrictions.

Finally, details of national testing and contact tracing strategies were extracted for each country to provide information on the extent that these measures are being used to quickly identify and isolate cases of COVID-19.

The review was first undertaken on 24 November. Weekly updates will be provided, as required by the NPHET.

# 3 Findings

This section summarises the international public policy response to COVID-19.

- Section 3.1 presents an overview of the current epidemiological situation in each country:
  - Appendix A provides a detailed breakdown of the trends over time for each of the key epidemiological parameters by country.
- Section 3.2 describes the frameworks that have been developed for living with COVID-19, alongside the criteria that are being used to guide decisionmaking on public health measures:
  - Appendix B provides a detailed summary of the frameworks and criteria by country.
- Section 3.3 presents a summary of the current public health measures that are in place in each country:
  - Table 1 presents a summary of recent changes in public health measures between the week ending 4 December and 11 December 2020.
  - o **Table 2** catalogues the different public health measures by country.
- Section 3.4 presents an overview of the testing and contact tracing strategies that are being used to interrupt the transmission of COVID-19:
  - Appendix C details each country's approach to testing
  - Appendix D details each country's approach to contact tracing.

# 3.1 Summary epidemiological data

There has been a considerable resurgence in the number of coronavirus cases across the different countries included in this review since October 2020 (Figure 1a). The greatest increase in the incidence rate to date has been observed in Belgium. At its peak, the 14-day incidence per 100,000 population was 1,817 (1 November 2020); it has since dropped to below 300 per 100,000 population (14 December); this may have been impacted by the fact that preventative screening has been paused in the country – further details are provided in section 3.4 and Appendix C. As well as Belgium, Austria, Czechia, and Switzerland have seen their 14-day incidence surpass 1,000 cases per 100,000 population since October. In contrast, at the peak of its recent resurgence in cases, the 14-day incidence rate in Ireland was 300 per 100,000 population (27 October 2020). Ireland has seen a considerable drop in the 14-day incidence rate to 80.4 per 100,000 population on 14 December 2020. However, over the previous seven days, the 14–day incidence rate increased by 4.0% (from 77.2 per 100,000 population on 7 December). A number of other countries have also seen an increase in the 14-day incidence rate over the previous seven days, including:

- Czechia (576.1 versus 512.4 new cases over 14 days per 100,000 population seven days earlier [representing a 12.4% week-on-week increase]
- Denmark (523.7 versus 346.5 [51.1% increase])
- France (236.3 versus 227.3 [4.0% increase])
- Germany (341.1 versus 306.6 [11.3% increase])
- the Netherlands (546.7 versus 419.5 [30.3% increase])
- Sweden (738.8 versus 713.8 [3.5% increase])
- the UK (348.2 versus 316.9 [9.9% increase]).

The incidence rate in Belgium has remained relatively stable over the previous seven days at approximately 168 per 100,000 population, while the incidence rate declined in Austria (472.5 versus 619.2 seven days earlier [23.7% decrease]), Italy (428.3 versus 530.2 [19.2% decrease]), Portugal (524.9 versus 600.6 [12.6% decrease]), and Spain (218.1 [on 13 December] versus 272.5 [20.0% decrease]).

Following on from the increase in the incidence of new cases since October 2020, most countries have seen a corresponding increase in the 14-day death rate per million population (Figure 1b). Since October 2020, the highest rates have been observed in Czechia and Belgium, where the 14-day death rate was 271.8 (12) November) and 237.7 (13 November) per million population, respectively. This compares with the original peak of 12 per million population in Czechia, observed on 15 April (Appendix A). However, the 14-day death rate per million population is now declining in most countries. For example, over the previous seven days, the 14-day death rate per million population declined in Belgium (104.4 versus 136.6 deaths per million population one week earlier [representing a 23.6% week-on-week decrease]), Czechia (138.1 versus 160.2 [13.8% decrease]), France (83.4 versus 95.8 [13.0% decrease]), Sweden (36.6 versus 67.6 [46.0% decrease]), and Spain (63.0 [on 13 December] versus 77.4 [18.6% decrease]). A number of other countries have also seen the death rate decrease over the previous seven days (including Austria (down 2.4%), Ireland (4.0%), Italy (6.0%), the Netherlands (12.2%), Switzerland (9.7%), and the UK (8.8%)). In contrast, over the previous seven days, the 14-day death rate per million population increased in Denmark (19.3 versus 17.4 seven days earlier [10.9% increase], Germany (69.0 versus 57.9 [19.1% increase], and Portugal (110.2 versus 103.7 [6.2% increase]).

The impact of the increase in COVID-19 cases can also be observed in the numbers of people in hospital (Figure 2a) and intensive care (Figure 2b) due to COVID-19. To date, Belgium and Czechia have had the highest rates of people hospitalised with

COVID-19. However, the numbers hospitalised appear to be declining in both countries: at their peak, 63.6 and 77.8 people per 100,000 population were hospitalised in Belgium (5 November) and Czechia (6 November), respectively; the rate has since dropped to 28.0 and 38.5 per 100,000 population, respectively (6 December; latest available data from the ECDC). Over a seven-day period (between 29 November and 6 December), this represents a 19.6% and 8.9% decrease in the numbers hospitalised per 100,000 population in Belgium and Czechia, respectively. The rate also declined in Austria (35.8 versus 40.2 people hospitalised per 100,000 population one week earlier [11.0% decrease]), France (39.2 versus 42.2 [7.1% decrease]), Ireland (4.8 versus 5.2 [9.3% decrease]), Italy (56.1 versus 60.7 [7.6% decrease]) and the UK (22.2 versus 22.9 [3.0% decrease] over the previous seven days. In contrast, although the number of people in hospital in Denmark has remained relatively low since October, the rate increased by 18.0% over the previous seven days, from 4.4 to 5.2 people hospitalised per 100,000 population. The rate of hospitalisations remained relatively unchanged over the previous seven days in Portugal with approximately 31 people hospitalised per 100,000 population.

Belgium and Czechia have also had the highest numbers in ICU per 100,000 population since mid-October, although the rate is declining in both countries: between 29 November and 6 December, the rate fell from 7.9 per 100,000 population to 6.5 in Belgium (representing a 17.8% decrease over seven days) and from 6.2 to 5.1 (17.2% decrease) in Czechia. The rate also declined over seven days in Austria (from 7.8 to 7.1 [8.5% decrease]), France (from 5.6 to 4.8 [14.3% decrease]), Italy (6.2 to 5.7 [8.0% decrease]), and Portugal (5.2 to 5.0 [4.1% decrease]). The numbers in intensive care in Denmark and Ireland have remained low throughout October and November. The latest data from the ECDC suggests the rate was below 1 per 100,000 population in both countries (6 December), which is relatively unchanged over the previous seven days. It is unclear how many people in the UK have been admitted to intensive care (these data are not reported by the ECDC). The ECDC separately reports the weekly number of admissions to hospital per 100,000 population for Germany, Netherlands, and Spain, where the numbers have remained relatively low throughout October and November, and to intensive care for Spain and Sweden. In both countries, the weekly number of admissions to intensive care is decreasing (further details are provided in Appendix A). Hospital occupancy data are not available for Sweden or Switzerland; similarly, ICU occupancy data are not available for Switzerland.

Figure 3a presents the weekly number of tests performed per 100,000 population in each country, while Figure 3b presents the share of tests performed weekly that are positive. It is important to note that cross-country comparisons are not straightforward as the unit of 'tests performed' varies across countries. For example, the unit may refer to the number of tests performed or the number of people tested.

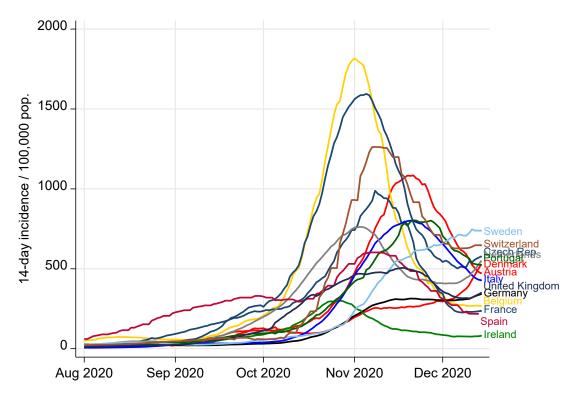
Health Information and Quality Authority

Irrespective of how it is defined within a country, across each country the rate of testing per 100,000 population has increased since August. The weekly number of tests performed in Denmark surpassed 9,000 per 100,000 population in December, the highest of any country included in this review. Yet, to date, the test positivity rate in Denmark has remained below 2%, which is the lowest rate of positive tests in any of the included countries. In Ireland, the test positivity rate was slightly higher than in Denmark on 2 December (the latest available date), at 2.6%, while the rate of testing was approximately 1,500 per 100,000 population. However, in both countries, the test positivity rate increased over the previous seven days from 1.7 to 1.9% in Denmark and 2.4 to 2.6% in Ireland, representing an 11.5 and 10.8% weekly increase in each country, respectively. The test positivity rate also increased slightly between 25 November and 2 December in Germany (from 9.5 to 9.8% [3.4% increase]), Portugal (13.2 to 13.8% [4.4% increase]), and Sweden (from 13.5 to 13.7% [1.5% increase], while in all other countries the rate continued to decrease. On 2 December, the highest test positivity rates were observed in Czechia (19.5%) and Austria (14.6%).

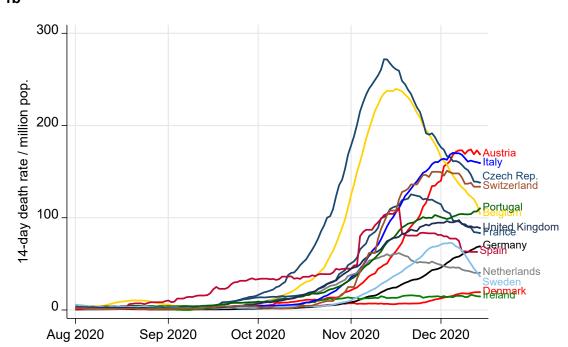
All reported percentage increases and decreases have been calculated from epidemiological data prior to rounding. A detailed breakdown of the epidemiological data by country between March and early December is presented in Appendix A.

**Figure 1** 14-day notification rate of new cases (**1a**) and deaths (**1b**) per 100,000 and million population, respectively (1 August to 14 December 2020)





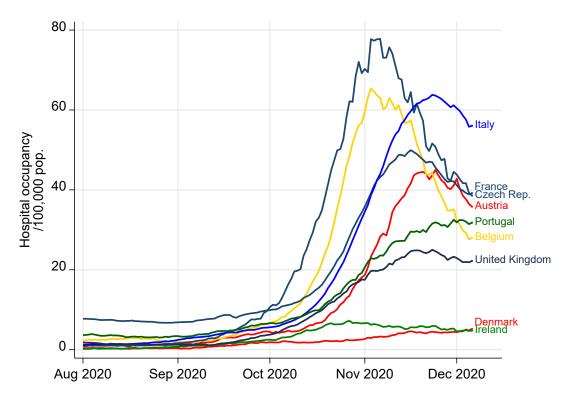




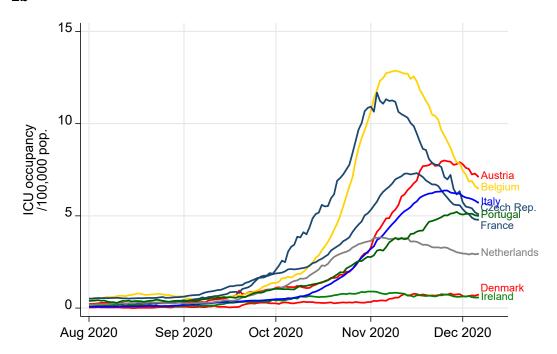
**Source**: European Centre for Disease Control and Prevention www.ecdc.europa.eu/en/covid-19/data

**Figure 2** Daily number of people in hospital (**2a**) and ICU (**2b**) per 100,000 population (1 August to 6 December 2020)

2a



2b

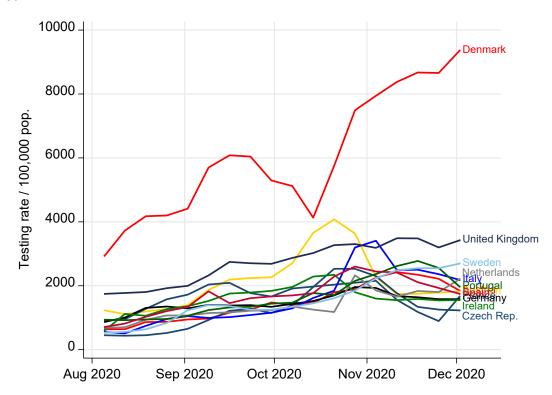


**Source**: European Centre for Disease Control and Prevention www.ecdc.europa.eu/en/covid-19/data

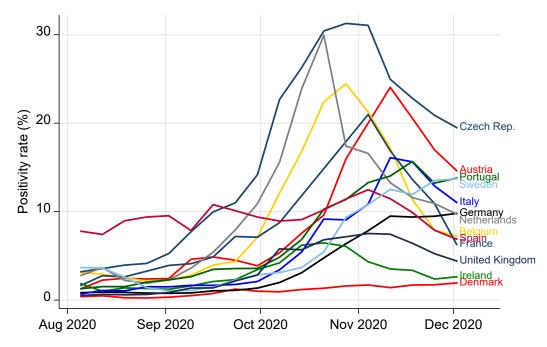
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**Figure 3** Weekly number of tests performed per 100,000 population (**3a**) and % of tests performed that are positive (**3b**) (5 August to 2 December 2020)

3a



3b



**Source**: European Centre for Disease Control and Prevention www.ecdc.europa.eu/en/covid-19/data

Health Information and Quality Authority (HIQA)

# 3.2 Public health frameworks for living with COVID-19

A number of countries have developed frameworks or systems for living with COVID-19, which assess the current level of risk associated with the virus and the type of public health measures, or restrictions, that are needed to contain the virus. For example, in Ireland, a framework for restrictive measures in response to COVID-19 was developed to ensure an appropriate public health response could be implemented at different levels of community transmission. The framework is a constituent part of *Resilience and Recovery 2020 to 2021; plan for living with COVID-19.* The framework consists of five levels of public health measures: *Level 1* is the lowest level and has the fewest restrictions (low risk of transmission), while *Level 5* is the highest level and has the most restrictions (reflecting widespread community transmission).

Other countries that have also developed a public health framework for assessing the level of risk associated with COVID-19 and the type of national response that is needed to contain that risk include Austria, (3) Belgium, (4) Czechia, (5) Denmark, (6) England, (7) Italy, (8) Netherlands, (9) Portugal, (6) Spain, (10) and Scotland. (11) In Italy, regions are classified as Yellow (moderate), Orange (medium-high) or Red (high) risk areas, whereby a different set of restrictive measures are applied to each category.(11) A similar three-tiered alert level system has been implemented in England to categorise areas according to the level of risk of COVID-19<sup>(7)</sup> The alert levels include: Medium, High and Very High; Medium is associated with the fewest restrictions while Very High is associated with the most restrictions and has been implemented in areas with high levels of infection. The framework developed in Scotland is similar to that of Ireland, in that it also has five levels ranging from Level 0 to Level 4 with Level 0 being the least restrictive and Level 4 being the most restrictive.(11) Czechia recently moved from a three-level framework to a five-level framework where the score for each level is based on parameters which each citizen can evaluate and calculate using available data. (5) The authorities want the public to understand the situation in their region and whether they should prepare for the easing or tightening of the implemented measures. There is no evidence that a public health framework for living with COVID-19 has been developed in Germany, Northern Ireland, Wales, or Switzerland; however, each country has implemented public health measures to limit the spread of COVID-19, as detailed in section 3.3.

To inform a change in alert levels, or public health measures, a variety of triggers appear to be taken into consideration across the different countries. Some of the key epidemiological parameters that are evaluated to influence a change in public health measures include, but are not limited to, the 14-day incidence of COVID-19 per 100,000 population; the incidence of COVID-19 per 100,000 population for particular age groups; the number of COVID-19 deaths; testing data (including the number of

COVID-19 tests administered and the percentage of COVID-19 tests that are returned as positive); the number of outbreaks; the nature and types of outbreaks; the source of clusters; estimates of the reproductive number; and the impact on vulnerable groups. Any decision to escalate or de-escalate public health measures also requires careful consideration of hospital statistics, which may lag behind a change in the incidence of the disease. For example, while the number of new infections may be declining, the healthcare sector may still be dealing with large numbers of patients recovering with COVID-19. As such, consideration is also given to available hospital and ICU bed capacity, for example.

Further details of the frameworks that have been developed in each country are provided in Appendix B, alongside any criteria or triggers that are being used to inform a change in alert levels or public health measures.

### 3.3 Current public health measures

Jurisdictions are currently imposing restrictions at various levels. Some are doing so at a nationwide level (for example, Ireland,<sup>(12)</sup> the Netherlands<sup>(13)</sup> and Wales<sup>(14)</sup> others are doing so at both a nationwide and regional level (for example Denmark,<sup>(15)</sup> Portugal,<sup>(16)</sup> Sweden<sup>(17)</sup> and Switzerland<sup>(18)</sup>) while others are imposing restrictions solely at a regional/area level (for example, Italy<sup>(8)</sup>, England<sup>(7)</sup> and Scotland<sup>(19)</sup>).

Table 1 provides a summary of the change (if any) in restrictions between the week ending 4 December and the week ending 11 December. In brief, 38 municipalities in Denmark have moved from Level 3 (applied nationwide to date) to Level 4 (second highest risk level), with additional local restrictions introduced. (15) Restrictions have also been tightened and or extended in Czechia, Denmark (15) (nationwide), France, 10 the Netherlands, 13 Portugal 16 and Switzerland. Restrictions have been eased somewhat in Austria 17 and to a broader extent in Northern Ireland 18 following the end of a two week circuit breaker. All 11 regions in Scotland that were in Level 4 (the highest level of protection) have now moved to Level 3. (19) The number of 'Red' (highest risk level) regions in Italy has fallen from five to one and the number of 'yellow' regions (lowest risk level) has increased from seven to 12. (8)

Since 11 December, the strictest lockdown to date has been announced in the Netherlands<sup>(13)</sup> (effective 15 December), with further restrictions announced in Germany<sup>(24)</sup> (effective 16 December) and Switzerland<sup>(18)</sup> (effective 12 December). Tier 3 (highest alert level) restrictions will be applied in a number of additional regions in England from 16 December.

**Table 1** Summary of changes in restrictions between week ending 4 December 2020 and 11 December 2020.

Country	Current Level (4 December 2020)	Current Level (11 December 2020)	Changes reported
EU/EEA countries	( December 2020)	(== 55655. = 525)	
Austria	Very high risk - Red	Very high risk - Red	Easing of some restrictions.
Belgium	Alarm Level 4	Alarm Level 4	No change.
Czechia	Level 3 Orange	Level 3 Orange	Extension of restrictions.
Denmark (nationwide)	Level 3	Level 3	Extension of restrictions.
Denmark (38 municipalities)	Level 3	Level 4	Increase in risk level. Additional local restrictions.
France	Confinement	Confinement	No change. Extension of restrictions advised.
Germany	Not reported	Not reported	No change. Further restrictions advised.
Ireland	Level 3	Level 3	No change.
Italy - yellow	7 yellow regions	12 yellow regions	Yellow regions ↑ from 7 to 12.
Italy - orange	9 orange regions	8 orange regions	Orange regions ↓ from 9 to 8.
Italy - red	5 red regions	1 red regions	Red regions ↓ from 5 to 1.
Netherlands	Temporary tightening of Severe	Temporary tightening of Severe	Extension of restrictions. Further restrictions advised.
Portugal (nationwide)	State of Emergency	State of Emergency	Extension of restrictions.
Portugal - high risk	86 high risk regions	92 high risk areas	High risk areas ↑ from 86 to 92.
Portugal - very high risk	80 very high risk regions	78 very high risk areas	Very high risk areas ↓ from 80 to 78.
Portugal - extremely high risk	47 extremely high risk regions	35 extremely high risk areas	Extremely high risk areas ↓ from 47 to 35.
Spain	National State of Alarm	National State of Alarm	No change.
Sweden	Not reported	Not reported	No change.
UK countries			
England – Tier 1: Medium Alert	Area restrictions	Area restrictions	No change.
England – Tier 2: High Alert	Area restrictions	Area restrictions	No change.
England - Tier 3: Very High Alert	Area restrictions	Area restrictions	No change. Further additions advised.
Northern Ireland	Renewed 2 week circuit breaker	End of 2 week circuit breaker	Easing of restrictions with end of 2 week circuit breaker.
Scotland - Level 1	5 Level 1 regions	7 Level 1 regions	Level 1 regions ↑ from 5 to 7.
Scotland - Level 2	6 Level 2 regions	7 Level 2 regions	Level 2 regions ↑ from 6 to 7.
Scotland - Level 3	10 Level 3 regions	18 Level 3 regions	Level 3 regions ↑ from 10 to 18.
Scotland - Level 4	11 Level 4 regions	0 Level 4 regions	Level 4 regions ↓ from 11 to 0.
Wales	Not reported	Not reported	No change.
Non-EU/EEA or UK countries			
Switzerland	Nationwide restrictions	Nationwide restrictions	Tightening of some restrictions. Further restrictions advised.

### 3.3.1 Movement of people

The restrictions relating to movement range from nationwide 'confinement' in France, (21) where travel is prohibited except in certain circumstances and completion of a travel certificate required in all instances, to night time curfews in a number of countries (for example, Austria (22), Belgium, (25) and Spain (26)) and regions of Portugal (16) and Italy, (8) to no restrictions on movement in other countries. 'Confinement' in France now allows physical activities and walks within a radius of 20km of home and for a max duration of 3 hours. (21) Some jurisdictions that do not have nationwide restrictions have specific advice regarding movement between regions for example, England (7), Italy, (8) Portugal (16) and Scotland. (27) In Ireland, travel is currently limited to within your own county, with certain exceptions. (12)

### 3.3.2 Social or mass gatherings

Denmark, (15) England (7) and Northern Ireland (23) are exceptions with regard to permitted size of gatherings. In Denmark, gatherings of up to 500 people are permitted in premises, locations, events and activities where customers, visitors or participants are mainly seated in designated seats facing a stage, cinema screen, playing field or the like. In England, numbers permitted at performances and shows, spectator sports and business events range from a maximum of 4,000 people outdoors or 1,000 people indoors in Tier 1 (moderate risk) areas to a ban on such events in Tier 3 (very high risk) areas. In Northern Ireland, up to 500 people can attend an organised outdoor event if it has a recognised person responsible for organising or operating the gathering and it has been subject to a risk assessment which meets the requirements of health and safety regulations. In all other countries, gatherings are mostly limited to 15 people or less, with the exception of Switzerland (n=50)<sup>(18)</sup> and Czechia (n=50 for outdoor events).<sup>(20)</sup> While organized gatherings with a maximum of 15 people are permitted in Ireland, indoor gatherings should not take place. (12) The Dutch government has announced that from mid-January it intends to carry out a number of controlled trials with spectators at sports matches, larger audiences in theatres, and more participants at business conferences to establish how these events can be organised safely as soon as the situation allows.(13)

### 3.3.3 Places of worship/religious services

Places of worship are generally open with services also being conducted in a number of jurisdictions including Czechia, (20) France, (21) Ireland, (12) Northern Ireland, (23) Scotland (19) and Switzerland, (18) although with severely reduced capacity. In the Netherlands, there is a limit of 100 attendees at a funeral service. (13) Numbers allowed in other countries range from 50 to 10 in enclosed spaces in Spain. (26) The maximum number of guests permitted at weddings and or civil partnerships ranges from 50 in a number of countries to only two witnesses permitted in Belgium. (25) In

Ireland, up to 25 mourners can attend a funeral service and up to 25 guests can attend a wedding ceremony and reception.<sup>(12)</sup>

### 3.3.4 Business activities

Non-essential retail has reopened in Austria<sup>(22)</sup> and Northern Ireland<sup>(23)</sup> and remains closed in one 'Red' region in Italy only.<sup>(8)</sup> However, most countries are operating with restricted opening hours and a maximum number of customers permitted in store at one time, while regional exceptions also apply in some cases. Bars, restaurants and other outlets selling food and drinks remain closed in Austria,<sup>(21)</sup> Belgium,<sup>(25)</sup> France,<sup>(21)</sup> Germany,<sup>(24)</sup> the Netherlands<sup>(13)</sup> and the higher risk areas of Denmark,<sup>(15)</sup> England<sup>(7)</sup> and Italy.<sup>(8)</sup> However those that are closed are generally permitted to provide takeaway service. Similar to the situation in Ireland,<sup>(12)</sup> those that are open have limited opening hours, reduced capacity and restrict the number of people within any one party. Accommodation in the hospitality sector has reopened in Northern Ireland<sup>(13)</sup> but remains closed in a number of countries and higher risk regions where it is operating for exceptional reasons only, including hosting those travelling on business.

### 3.3.5 Education

Primary schools in Austria have reopened<sup>(22)</sup> and are currently open in all countries with the exception of the higher risk municipalities in Denmark. (15) Secondary schools are also fully or partially open in most countries. However, in Austria<sup>(22)</sup> and the higher risk municipalities in Denmark, (15) online learning is in place for most students. Similarly, Belgium, (25) France(21) and Italy(8) are currently operating a combination of face-to-face and distance/online learning. Secondary schools in Czechia are reopening on a phased basis but classes are alternating weeks of regular attendance and remote instruction. (20) In Italy, face-to-face teaching activities must be guaranteed to 75% of the student population by 7 January 2021. (8) The Swedish Public Health Agency now recommends that the country's upper secondary schools partially close and switch to distance learning for the period from 7 December to 6 January 2021 in order to further reduce congestion in society and on public transport. (28) Universities are open in Denmark (15) (with the exception of the higher risk municipalities), England, (7) Portugal, (16) Spain (26) and Sweden (17), although restrictions do vary between universities in Sweden. A combination of in-person and online learning is in place in Scotland<sup>(19)</sup> and Wales.<sup>(14)</sup> The universities in all other countries are operating online learning mainly, with exceptions for practical and laboratory based classes as is the case in Ireland. (12)

### 3.3.6 Domestic travel (including transport)

Public transport capacity has been reduced in a number of jurisdictions (Ireland,<sup>(12)</sup> Italy<sup>(8)</sup> and Wales<sup>(14)</sup>), although school transport is not affected. There is a general recommendation in a number of countries to avoid public transport at rush hour and at times when it is likely to be busy. In Austria only two people are permitted per row in taxis and when car-pooling.<sup>(29)</sup> In Portugal, private vehicles with capacity for more than five seats can only be driven with two thirds occupation, unless all occupants are from the same household.<sup>(16)</sup> From 24 December, cable cars, gondolas and lifts will reopen in ski areas in Austria for leisure purposes, with capacity restricted to 50%.<sup>(29)</sup> Capacity in cable cars and gondolas in Switzerland will be restricted to two-thirds.<sup>(18)</sup>

### 3.3.7 International travel (inbound)

Entry is possible from EU or Schengen area countries without restriction in a number of countries, e.g. Sweden<sup>(17)</sup> and Portugal.<sup>(16)</sup> In a number of other countries, restriction of movement or quarantine is required if travelling from a 'high risk'/'red zone' within the EU or Schengen areas. Passengers arriving into Ireland are generally requested to restrict their movements for 14 days.<sup>(12)</sup> However, in line with the EU traffic lights approach, this does not apply to those arriving from 'green' regions. Passengers arriving from an 'orange' region, who have received a negative/'not detected' result from a COVID-19 PCR test taken during the three days before departure to Ireland do not have to restrict their movements. Additionally, passengers arriving into Ireland from an 'orange', 'red' or 'grey' region can end their period of restricted movement if they receive a negative/'not detected' result of a PCR test that has been taken a minimum of five days after arrival in Ireland.

Those passengers travelling from countries outside the EU or Schengen areas or countries that are not on a travel corridor list are mostly required to quarantine. The duration of quarantine ranges from seven days (Belgium<sup>(4)</sup> and France<sup>(21)</sup>) to 14 days (Italy,<sup>(8)</sup> Ireland<sup>(12)</sup> and UK (except Wales)<sup>(7)</sup>). From 14 December, the duration of quarantine in all UK jurisdictions will be reduced to 10 days.<sup>(7)</sup> In some countries, certification of a negative test (PCR not specified in all cases) for COVID-19, no older than 72 hours, can eliminate the requirement to quarantine (Austria,<sup>(29)</sup> Denmark<sup>(15)</sup> and France<sup>(21)</sup>).

All passengers travelling into Spain from a high-risk country/area must present a certificate with a negative COVID-19 PCR or transcription-mediated amplification (TMA) test result, carried out within 72 hours prior to arrival. (26) Furthermore, the regional government of Spain's Canary Islands has passed a decree (with effect from 10 December) allowing tourists to enter the territory with a negative antigen test, rather than a PCR/TMA test. (30) The test must have a sensitivity of more than 80%

and a specificity of more than 97%. Inbound travel to Czechia is currently permitted for essential reasons only.<sup>(20)</sup> Passenger locator forms are required to be completed on entry to all countries with the exception of France,<sup>(21)</sup> Portugal<sup>(16)</sup> and Sweden.<sup>(17)</sup>

### 3.3.8 Culture/leisure/entertainment

Outdoor facilities including parks, playgrounds, gardens, lakes and beaches are generally open, with zoos also open in a limited number of countries. Public buildings, including museums and galleries, are largely open but remain closed in France, Germany, Hally, Wales Wales Hally, and the higher risk regions in some countries. Theatres and cinemas are also closed in these jurisdictions as well as in Austria and Belgium. France had planned to open cinemas, museums and theatres on 15 December but closures have now been extended until 7 January 2021. In Ireland, cinemas are open while theatres remain closed. Where open, all cultural and entertainment venues are operating with restrictions. In countries with more severe restrictions, libraries are generally open, at least for the provision of IT services and click and collect services. In Ireland, library services are available for browsing, call and collect and online services.

### 3.3.9 Sporting/recreational activities (amateur and professional)

Indoor sports centres, fitness centres and swimming pools remain fully closed in Austria, (29) France(21) and Germany. (24) They are operating with varying restrictions in other countries including Ireland, (12) with restrictions around individual and group activities and class size. Additionally they are operating in some countries principally for children's activities and or with the number of participants also restricted. In Belgium a maximum of 50 children under 13 years can partake in organised indoor sports activities. (25) Similarly in Denmark a maximum of 50 young people are permitted to gather for sports activities. (15) In Ireland, non-contact training is allowed outdoors for school-aged children in pods of 15.(12) In Switzerland(18) and Wales<sup>(14)</sup> a maximum of 15 adults are permitted to attend an organized indoor activity and in Spain indoor facilities are operating at 50% capacity. (26) Group training outdoors is permitted, with restricted numbers, in a number of countries and where people can maintain social distancing. Numbers permitted range from a maximum of 30 adults in Wales<sup>(14)</sup> to a maximum of four adults in Belgium.<sup>(25)</sup> In Ireland, non-contact training is permitted in pods of up to 15 outdoors while indoor training is limited to an individual basis. (12) Professional and elite sport training and competition is largely unaffected, but in most countries it must take place behind closed doors.

### 3.3.10 Face masks

In Italy it is mandatory to carry a face mask with you at all times. (8) Face masks are generally mandatory when indoors and travelling on public transport, with the exception of Sweden. (17) Furthermore a number of countries mandate or advise wearing face masks when in crowded open public spaces and or where it is not possible to maintain physical distance. This extends to the workplace in Czechia, (20) Portugal<sup>(31)</sup> and in Germany<sup>(24)</sup>, Ireland<sup>(12)</sup> and Switzerland<sup>(18)</sup> if social distance cannot be maintained. In Scotland you are obliged to wear a face covering in communal areas in the workplace. (19) In Germany, the requirement to wear a face mask applies to the space in front of retail shops and in car parks. (24) Furthermore they are required on all school premises where social distancing cannot be observed and during class in secondary school from grade seven onwards in those regions with an incidence of more than 50 new infections per 100,000 inhabitants. (24) From 1 December, Germany has further expanded the requirement to wear a mouth and nose cover to include: closed rooms that are accessible to the public or receive visitors or customers, in all public places in inner cities, and in work and production facilities, unless a distance of 1.5 meters to other people can be safely maintained.(24) Face masks are also mandatory in Czechia(20) and the Netherlands(13) if travelling in a car with someone not from the same household. The minimum age for mandatory face mask wearing ranges from three years old in Czechia<sup>(20)</sup> to 13 years in Belgium, (25) Ireland(12) and the Netherlands. (13) Face masks are compulsory in school from six years of age in France<sup>(21)</sup> and from 10 years of age in Austria.<sup>(29)</sup> In Denmark, teachers and educators in primary and secondary schools must wear a visor. (15) Face masks must be worn by athletes in Czechia with exemptions for all active athletes on sports premises outdoors and for professional athletes only when indoors. (20) Masks must also be worn in fitness centres in Switzerland unless the room is large enough for social distancing to be maintained and there is adequate ventilation. (18) In Austria, mouth and nose protection must be worn in the waiting and boarding areas of cable cars, lifts and gondolas. (29) In Switzerland, masks must be worn when queuing for and travelling on ski lifts and all other forms of transport at ski resorts.(18)

### 3.3.11 Christmas and end of year holidays

In Belgium, current social contact rules will continue to apply during the Christmas period, including the ban on gatherings and the night time curfew remaining in force. Plans to increase the number permitted for social gatherings (from five to 10 people) during the holidays in Germany have been halted, although federal states may allow exceptions from 24 to 26 December only. The strictest lockdown to date will be in place in the Netherlands over the Christmas period. On 24, 25 and 26 December the maximum number of visitors permitted to an individual's home will

be 3 people aged 13 years or older. In Spain, a maximum of 10 people (increased from the current limit of six) are permitted at social gatherings on key dates (24, 25 and 31 December and 1 January). From 18 December until 7 January, a maximum of two other households can visit your home in Ireland. In the UK, the maximum number of people permitted for social gatherings will be expanded for a limited time over the Christmas period where bubbles can be formed by people from up to three households for the period between 23 December and 27 December.

In Italy, movement is restricted between 21 December and 6 January with all travel between regions prohibited, including travel to reach second homes. (8) Furthermore on 25 and 26 December and 1 January, movement between municipalities throughout Italy is not permitted. Italians who travel abroad for tourism from 21 December to 6 January will have to undergo quarantine on return. Foreign tourists arriving in Italy at the same time will also have to undergo quarantine. Passengers arriving into Austria from a risk area between 19 December and at least 10 January 2021 are required to guarantine for 10 days. Risk areas are defined as all countries with a 14-day incidence rate higher than 100 per 100,000 population. Quarantine can be ended on receipt of a 'not detected' PCR test taken 5 days after arrival. (29) In Portugal, restrictions on movement will also be introduced from the 23 to 26 December inclusive and from 31 December to 4 January inclusive. (31) In Spain, movement between regions is permitted between 23 December and 6 January, provided these trips are made to visit relatives or close friends. (26) Additionally, a 1.30am curfew will be applied for the nights of Christmas Eve and New Year's Eve, rather than the earlier times of between 10pm and midnight that are currently in place in some regions.

### 3.3.12 Other

It should be noted that restrictions may vary between regions, municipalities and cities within the same country.

# 3.4 Testing and contact tracing strategies

A review of each country's approach to testing and contact tracing was undertaken as part of this report. The information, described separately below for each strategy, was extracted on Friday 20 November 2020.

### 3.4.1 International testing strategies

As a strategy, all countries included in this review, with the exception of Denmark and France, target their testing on symptomatic individuals. (32-48) In Denmark and France, and Trance, and Trance

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specifically prioritised in the national strategies for Belgium, Czechia, France, the Netherlands, and Sweden. (32, 33, 35, 39, 42)

However, most countries have expanded testing to include screening of asymptomatic individuals in certain situations. Internationally, asymptomatic testing is mostly aimed at frontline staff and residents of care facilities or healthcare users. For example, serial testing is conducted on staff and or residents in long-term care facilities (LTCF) in Austria, Czechia, Denmark, England, Italy, Ireland, Northern Ireland, Scotland, Spain, Sweden and Wales. (22, 33, 34, 37, 38, 41-43, 49-51) Screening is conducted in healthcare settings in regions experiencing high incidence in France, Germany and the UK. (35, 36, 43) England and Wales are also conducting regular testing on all frontline health and social care workers and non-clinical staff. (50, 52) Regular testing will be soon offered to up to two family members or friends per resident in LTCFs in England and for all visitors in Czechia. (43, 51, 53) Testing is being expanded in Scotland to include care home visitors. (54) Since 21 October 2020, Belgium has paused all preventative testing programmes except for those that screen new residents in care institutions for the elderly, new residents with a risk profile in other care institutions, and hospitalised persons. (32)

Other non-healthcare populations have been targeted including; households of mink farm workers and in schools in Denmark, (34, 55) teaching staff in Czechia, (53) university students in England, Northern Ireland, Scotland, and Wales using self-administered lateral flow tests and pooled RT-PCR testing, (50, 51, 56) France currently conducts screening in territories identified as vulnerable because of their density or the distance from access to care, (57) and workers in key industries in the Netherlands to enable an expedient return to work. (58) The UK has widen targeted mass screening, using PCR and lateral flow tests, of high risk areas or regions utilising a mix of test centres and self-administered sampling, to across the four jurisdictions of the UK following completed pilots in Liverpool, Lower Cynon Valley and Merthyr Tydfil. (43, 59) In addition, testing will also be offered to secondary school children in the worst affected areas of Essex, Kent and London. (60) Students in Scotland will be offered lateral flow COVID-19 testing when they return to term-time accommodation after Christmas, similar to testing that is being offered ahead of Christmas. (61)

Use of rapid antigen tests has been supported in Austria, Belgium, Czechia, Denmark, England, France, Germany, Italy, Northern Ireland, Portugal, Scotland, Spain, Sweden, Switzerland and Wales. (22, 33, 36, 38, 40, 41, 43, 47, 50, 51, 62-65) In most cases, positive rapid antigen test results must be confirmed by RT-PCR. In Ireland and the Netherlands, rapid molecular tests are used to diagnose current infection with SARS-CoV-2 in certain situations; validation studies of rapid antigen tests are ongoing in both countries. (39, 66) Austria has expanded rapid antigen testing to targeted groups on a voluntary basis, including teachers and kindergarten workers,

as well as 400,000 police officers from across the country. (67) Austria has begun testing the majority of the population using rapid antigen tests as the current restrictions lift in early December, with Salzburg and other regions scheduled to begin testing by 10 December. (68) All positive rapid tests will receive a follow up RT-PCR test at the same test location.

With the exception of Austria, population-wide testing has not yet been implemented in any of the included countries. Czechia has suggested that a 'close-to-blanket' testing strategy could be implemented if rapid antigen tests are validated in the country. The Netherlands plans to begin large scale testing pilots in January with the aim of expanding the programme to population-wide screening on a monthly basis from March 2021. The UK is widening community testing to Tier 3 areas with high incidence levels while a municipality (South Tyrol) in the province of Bolzano in Italy has expanded their screening programme to include voluntary antigen testing of randomly selected citizens from selected subgroups, once a week for four weeks.

Further details of each country's approach to testing are provided in Appendix C.

### 3.4.2 International contact tracing strategies

### Approach to contact tracing

All of the countries included in this review have some form of national strategy in place. However, countries can broadly be divided into two groups in terms of how the strategy is implemented. Jurisdictions such as Denmark<sup>(72)</sup>, England<sup>(73)</sup>, Ireland<sup>(74)</sup>, Northern Ireland<sup>(75)</sup>, Portugal<sup>(76)</sup>, Scotland<sup>(77)</sup> and Wales<sup>(78)</sup> have a centralised approach whereby the national strategy is implemented by a national body. Other countries such as Belgium<sup>(79)</sup>, Spain<sup>(80)</sup>, Italy<sup>(81)</sup>, Germany<sup>(82)</sup>, the Netherlands<sup>(83)</sup> and Switzerland<sup>(84)</sup> employ a more decentralised approach. In these countries, autonomous regions, provinces, cantons or local health authorities are responsible for the implementation of the contact tracing strategy.

### Methods of tracing

Information on the specific method of contacting individuals is poorly reported. In cases where methods of contact were reported, it was usually uncertain which methods were preferred. For example, in England, "Infected individuals will receive a text or email alert or call with instructions of how to share details of people with whom they had close, recent contact and places they have visited."<sup>(73)</sup>

The type of professionals carrying out the contact tracing varies across the countries examined. In most cases, it is a combination of GP/family doctors and public health/local health authority employees. In many cases, countries have recruited and

trained new staff to work as contact tracers; however, it was unclear which fields these staff were recruited from.

There were some notable exceptions to the general trends:

- In the Wallonia region of Belgium, contact tracing has been outsourced to an external operator<sup>(79)</sup>.
- In Czechia, contact tracing is operated with extensive involvement of the army and overseen by the Prime Minister<sup>(69, 85)</sup>.
- In France, contact tracing is conducted by physicians and national health insurance employees<sup>(86)</sup>.
- In Sweden<sup>(87)</sup> and Denmark<sup>(72)</sup>, the individual who tests positive may be asked or given the option to contact their own personal contacts.

### Type of contacts traced

The type of contacts traced varies according to two parameters; i) the definition of a contact and ii) whether any risk classification was conducted.

Countries such as Ireland<sup>(74)</sup> and Italy provide extensive definitions on who is considered a close contact. Other countries employ a looser classification, relying on the training of contact tracing staff. For example, in Wales a close contact is "anyone that a contact tracer considers may lead to a risk of infection or contamination with coronavirus"<sup>(78)</sup>.

In many countries, the course of action followed by the contacts will depend on their risk status, as determined by the contact tracers. For example, in Austria, all contacts are classified as either category 1 (high risk exposure) or category 2 (low risk exposure). This classification combined with whether or not the contact is experiencing symptoms determines the prescribed course of action <sup>(29)</sup>.

Czechia is a notable outlier in that it relies extensively on an IT-based system for identifying contacts. This system uses a combination of card payment data, mobile location data from mobile phone operators and data from the contact tracing app to identify individuals who may have been in contact with an index case<sup>(88)</sup>.

In Belgium, contact tracing is regarded as only being viable/useful when transmission is low.

### Duration of contact tracing

In most of the countries where information was available on this question, contact tracing included contacts in the 48 hours prior to the onset of symptoms. In asymptomatic cases, this was modified to 24 hours prior to the positive sample

being collected. Only five countries (Denmark, Ireland, Germany, Scotland and Austria) specify contacts post-identification of the index case. Germany<sup>(82)</sup>, Scotland<sup>(77)</sup>, and Austria<sup>(29)</sup> define this post-detection period as 10 days from the onset of symptoms, although the German guidance recommends this period can be extended if symptoms are persistent or severe. In Ireland, the guidance specifies that the post-diagnosis period is usually ended after the index case has been 10 days symptom-free and five days fever-free (or 14+5 days for patients in hospital/residential care)<sup>(74)</sup>. Denmark regards the post-diagnosis contact tracing period to be up to 48 hours after symptoms have ceased<sup>(72)</sup>.

### Use of contact tracing apps

Apart from Sweden, all of the countries included in the review employ a contact tracing app as part of their contact tracing strategy. There was a high degree of commonality across the various apps. In general, they:

- employ Bluetooth technology
- store contact data for 14 days
- operate by a 2m/15min rule
- operate to supplement or in parallel to "manual" contact tracing.

### Exceptions to this generalisation included:

- In Czechia, the app is a core part of their tech-based contact tracing strategy.<sup>(88)</sup>
- In Denmark, the app employs a 1m/15 min rule for contact rather than 2m.<sup>(89)</sup>
- The Austrian app has two alert levels, red for those who have been in close contact (<2m/>15min) and yellow for contact, but not close contact.<sup>(90)</sup>
- Sweden's symptom tracker app appears to be used to map the disease prevalence rather than identifying contacts.<sup>(91)</sup>

Further details of each country's approach to contact tracing are provided in Appendix D.

### Backward or reverse contact tracing

Backward or reverse contact tracing refers to the practice of identifying the source of infection for each newly identified index case. Modelling research conducted by the London School of Hygiene & Tropical Medicine suggests that backward contact tracing increases the proportion of subsequent cases prevented by a factor of 2 to 3.<sup>(92)</sup> Some countries, most notably Japan and South Korea, have successfully implemented reverse contact tracing. In South Korea, the source of infection is sourced through prompt epidemiological investigation and quarantine of contacts.<sup>(93)</sup>

Japan has chosen to employ a cluster-based approach, whereby an epidemiological investigation is conducted to ascertain the origin of a cluster outbreak. (94)

Of the countries and jurisdictions included in this review, many have identified backward or reverse contact tracing as an important part of their strategy. For example, Germany's contact tracing guidance notes that both forward determination of possible transmission from a confirmed case and backward determination to search for sources of infection are important. (82) Northern Ireland's COVID-19 Management Framework notes future plans to introduce reverse contact tracing. (95) However, it is unclear how many of the included countries are currently conducting reverse contact tracing. Guidance in the Netherlands and Belgium explicitly notes that contact tracers should attempt to identify the source of infection for each new index case, through asking the index case who they think they may have infected by. (79, 83) Sweden's guidance notes that it is not usually possible or meaningful to conduct reverse contact tracing, except in cases of a clearly defined cluster or outbreak. (87) Given that symptom onset occurs on average 5-6 days post exposure, (96) and contact tracing in most of the included countries typically only extends to 48 hours before the onset of symptoms, most of the included countries currently appear to place a greater emphasis on forward contact tracing.

# 4 Conclusion

Public health measures are currently being applied across all countries included in this review, either nationally, regionally or a combination of both. Although the measures that are being applied are largely consistent, there are many differences in the detail between countries. The more prominent differences between countries include how movement is restricted (for example, curfew hours, travelling distances permitted and requirement to complete a certification card if leaving home); numbers permitted at gatherings, events, religious services and sporting activities; and the operating hours of businesses allowed to open within the hospitality sector. The situation remains extremely fluid with ongoing changes and further restrictions being introduced in a number of countries ahead of the upcoming Christmas period.

While a range of epidemiological data are presented here to describe the current situation in each country, it is important to note that comparisons across countries are difficult for a number of reasons.

1. The number of cases in any country can be heavily influenced by (1) the testing strategy adopted in that country and (2) case definition used, which can vary over time, causing large and small fluctuations in the number of new cases recorded each day. The number of new cases on a given day can also

- be affected by the return of awaited or delayed test results, as well as reduced testing on the weekends or outsourcing of testing.
- 2. The number of deaths in any country is affected by (1) the way in which deaths are recorded and (2) the age profile of the population. Some countries do not record deaths across all sectors (for example, hospitals, long-term care facilities, while others report confirmed deaths only.
- 3. Comparisons of the rate of testing across countries is complicated by the varying units used to describe 'tests performed'. In some countries this may refer to the number of people tested, whereas in other countries, it may refer to the number of tests performed. It is also important to note that some variations in the epidemiological data (such as the 14-day notification of new cases) may be observed across different data sources due to differences in underlying population data. The population data used for this analysis is provided by the ECDC. In the case of Ireland, this is based on 2019 Eurostat data. (97)

As a national strategy, individuals displaying symptoms consistent with COVID-19 are prioritised for testing in each of the countries included in this review. In Denmark<sup>(34)</sup> and France,<sup>(35)</sup> however, testing is provided for anyone that requests a test, irrespective of the presence of symptoms. High-risk groups based on preexisting conditions, age or setting are specifically prioritised in the national strategies of five of the 17 countries. Most countries have expanded testing to include screening of asymptomatic individuals in certain situations. This is mostly aimed at frontline staff and residents of care facilities or healthcare users. For example, serial testing is conducted on staff and or residents in long-term care facilities, while some provide or plan to test visitors to long-term care facilities. Screening programmes are also being implemented in non-healthcare settings, such as in education settings and critical industries, as well as in areas of high density and in communities and regions with high incidence. Most countries recommend the use of rapid antigen tests with positive test results followed up with PCR test. With the exception of Austria, (98) which is making rapid antigen tests available to the general public through a voluntary free-of-charge mass testing programme, population-wide testing has yet to be implemented in any of the other included countries.

Whilst almost all of the countries included in the review have developed and launched a contact tracing mobile app, the role these apps play in the contact tracing process is often poorly defined. Questions remain about the uptake of the apps and their utility as contact tracing tools. In many cases, the contact tracing app serves as an optional extra, with manual contact tracing representing the central focus of the contact tracing programme. Furthermore, the acknowledgement in Belgium that contact tracing is only feasible when transmission is low raises the

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question of the appropriate use of healthcare resources when transmission is elevated.

Although a comprehensive search of international resources was undertaken, it is possible that the sources identified in this review are not current or do not accurately capture all public health measures and strategies that are being undertaken. For example, some countries may have expanded testing beyond what was observed in this review, or could be using rapid or near-patient tests to support the diagnosis of current infection with SARS-CoV-2 in settings not identified in this review. In addition, the public health measures adopted by countries to limit the spread of COVID-19 are constantly changing. As such, the review may have missed relevant information that was just (or about to be) published at the time of the review. To the best of our knowledge, the review is accurate as of 11 December 2020.

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Austria <sup>(22)</sup>	Current Level: Very high risk – Red	Effective from and to: 07/12/2020 - 06/01/2020	
Movement of people	<ul> <li>The restriction on leaving your home now applies from 8pm to 6am, up until 16 Dec initially.</li> <li>The public service is switching to home office in the federal and state administration where possible and is setting up a staggered start of work depending on capacity.</li> </ul>		
Social/mass gatherings	<ul> <li>Two households (up to 6 adults and 6 children) can meet between 6am and 8pm.</li> <li>Further contacts should be avoided if they are not absolutely necessary.</li> <li>Events are generally prohibited. This does not include professional meetings and demonstrations (provided that minimum distances are observed and mouth and nose protection is worn).</li> <li>Funerals</li> <li>Max 50 people.</li> </ul>		
Business Activities	Retail  All open including personal services (e.g. hairdressers, masseurs and beauty salons).  Opening times are limited to 6am to 7pm.  For customer areas there is a restriction of 10m² per customer.  In shopping centres there should be no lingering in general areas and no consumption of food and drinks.  Food and beverage  Restaurants and bars can only offer takeout/delivery services. Dining is not permitted. Scheduled to reopen on 7 Jan.  Catering establishments are only allowed to offer food for collection from 6am to 7pm.  Food can be delivered around the clock.  Accommodation  Hotels are closed to leisure travellers/tourists.		
Primary schools	Only business travellers are allowed to stay in hotels.      Open.		
Secondary schools	<ul> <li>High schools, with the exception of those up to 14yrs and classes that will be selection.</li> </ul>	sitting secondary school final examinations, continue to operate by distance	
Higher and adult education	High schools and technical colleges continue to operate by distance learning.		
Domestic travel (including transport)	<ul> <li>Carpooling, taxis and taxi-like operations can still be used if only two people are transported in each row of seats, including the driver. This also applies to training trips, such as driving schools.</li> <li>Cable cars, gondolas and climbing aids may not be used for recreational purposes.</li> <li>From 24 Dec, cable cars, gondolas and lifts can reopen for leisure purposes. A capacity restriction of 50% applies.</li> </ul>		
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Entry from an EU Member State or Schengen Associated country with a stable COVID-19 situation is possible without restrictions. However, it is a prerequisite that travellers have only been to a list of specified countries or in Austria within the last 10 days.</li> <li>Travellers from remaining areas within EU Member States and Schengen Associated countries, are required to provide a health certificate not older than 72 hours, confirming a negative SARS-CoV-2 test, or they are required to start a 10-day quarantine.</li> <li>Children up to the age of 10 years are exempt from compulsory testing upon entry.</li> <li>From 19 Dec until at least 10 Jan 2021, if you are travelling from a risk area, you have to quarantine for 10 days upon arrival in Austria. Risk areas are defined as all countries with a 14-day incidence rate higher than 100.</li> </ul>		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Austria <sup>(22)</sup>	Current Level: Very high risk — Red	Effective from and to: 07/12/2020 - 06/01/2020		
	Mandatory Travel Documentation			
Cultura /laiaura /	• An entry and transit declaration is required.			
Culture/leisure/ entertainment		Closed  • Theatres, cinemas, gyms, pools, zoos, amusement parks, and other cultural and leisure facilities.		
Circuration	• Concerts, plays, exhibitions etc. are cancelled.			
	• Christmas markets.			
	Onen			
	• Museums, art halls, cultural exhibition halls, libraries and archives. The 10m² rule per visitor applies.			
	• Libraries.	The 10th Tale per visitor applies.		
	• Parks.			
	Ski Areas			
	• Ski areas including cable cars open on 24 Dec but the hospitality ind			
Amateur sport and recreation	• Individual and recreational outdoor sports are allowed if there is no physical contact in the sport-specific exercise. The necessary safety distances of at			
recreation	least one metre must be observed.  • Outdoor sports facilities are open but the minimum distance must be observed, team and contact sports are not permitted and the restriction of 1 person			
	to 10m <sup>2</sup> applies.			
	• Indoor sports facilities remain closed.			
Professional sport	Facilities			
•	Professional ski teams can train.			
	Indoor sports facilities remain open for top athletes.			
Sports events  Sports events by ten athletes can take place as follows:				
Sports events by top athletes can take place as follows:  • Max of 100 athletes indoors.				
	<ul> <li>Max of 200 athletes outdoors, plus trainers, supervisors and people who are necessary for the implementation of the event.</li> </ul>			
Facemasks	Mouth and nose protection must be worn in public, closed rooms.			
<ul> <li>Mouth and nose protection must be worn in subway stations, on platforms, at stops, train stations and airports as well as their connection must be worn in taxis, ubers and private cars if containing people from different households.</li> <li>Mouth and nose protection must be worn in the workplace if the minimum distance is less than 1m.</li> </ul>				
	Mouth and nose protection must be worn in the waiting and boarding areas of cable cars, lifts and gondolas.			
	Masks are also compulsory in schools, outside of classrooms.			
	<ul> <li>Children under 7 years are not required to wear masks.</li> <li>A mask is required in school lessons from the age of 10.</li> </ul>			
Other	Regionally, additional measures can be taken beyond national meas	פאוו		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Belgium <sup>(25)</sup>	Current Level: Alarm Level 4	Effective from and to: 02/11/2020 - 15/01/2020	
Movement of people	Curfew from midnight to 5am.     Working from home mandatory where possible.		
Social/mass gatherings	Social gatherings  Close contact with max of 1 person.  Max of 1 close contact per family can be invited into your home.  If you live alone, a max of 1 close contact and 1 other person can be invited into your home. These people cannot be in your house at the same time.  Max of 4 people can meet in a group on the street. You have to keep 1.5 meters distance.		
	<ul> <li>Funerals and weddings</li> <li>Max of 15 people at a funeral (not including children &lt;12 years). No food may be served afterwards.</li> <li>Weddings can go ahead. Only the couple, a max of 2 witnesses, the civil registrar or the officiator of the service (e.g. priest or imam) may attend. No food may be served afterwards.</li> </ul>		
	Prayer houses  - Can remain open, but no services allowed. Max of 4 people at gatherings.		
Business Activities	Retail  Open with the following conditions: The rule of 1 customer per 10m² applies. Shops with a surface area of less than 20m² can allow max of 2 customers at the same time, provided that social distancing rules are respected. Large stores of more than 400m² must provide for access control. Max shopping time is 30 minutes. Night shops open until 10pm. No alcohol purchases after 8pm.		
	Markets Open but flea markets, winter and Christmas markets are not allowed.		
	Food and beverage		
Primary schools	Open		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Belgium <sup>(25)</sup>	Current Level: Alarm Level 4	Effective from and to: 02/11/2020 - 15/01/2020	
Secondary schools	• Open.		
-	Pupils in the second and third levels will have a max of 50% contact education.		
Higher and adult education	Distance learning will be provided as follows:		
	• For all students (except first year students), at least until the end of the calendar year.		
	Teachers must have online meetings; the same applies for pedagogical study days.      No physical team buildings allowed.		
	No physical team buildings allowed.		
Domestic travel	You are allowed to move around freely.		
(including transport) International travel	Futur Doctulations		
	<ul> <li>Entry Restrictions</li> <li>Travelling from EU Member States + Schengen Associated countries is allowed.</li> </ul>	Pofero entering Polaium, check the latest information on travel advice (with	
(inbound)	particular reference to the different zones corresponding to the local COVID-19 s		
	particular reference to the different zones corresponding to the local covid-15 s	ituation) at diplomatie.beigiam.be.	
	Procedure as follows on arrival:		
	• Fill in the Public Health Passenger Locator Form within 48 hours of your arrival	in Belgium.	
	<ul> <li>Based on your answers, the form will calculate whether you are at high risk.</li> </ul>	- 3	
	Did you receive a text message?		
	- If so, you have a high risk of coronavirus and you have to quarantine for 7 day	/S.	
	- This is compulsory if you come from a red zone.		
	- The text message contains a code with which you can get tested after 7 days.	If you then test negative, you no longer need to quarantine. If you test	
	positive, you need to isolate yourself and stay at home for at least 7 more days.		
	If you do not wish to take a test, you have to quarantine for 10 days.  Output  Description:		
	• Did you not receive a text message? You don't have to quarantine.		
	People who have stayed abroad for more than 48 hours and will stay in Belgium for more than 48 hours will be subject to stricter controls. They must:		
	• Fill in the Passenger Locator Form.		
	Comply with the mandatory quarantine.		
	Mandatory Travel Documentation		
	• All persons returning to Belgium or travelling through Belgium, and who are staying at least 48 hours, must fill out a Passenger Locator Form.		
	• A self-assessment test is also integrated on a voluntary basis in the Passenger Locator Form. In case of a positive self-assessment, quarantine can be		
	avoided.		
Culture/leisure/	Closed		
entertainment	Cinemas, theatres, casinos, amusement parks, animal parks and zoos with no events or performances.		
	Holiday parks.		
	Out 17		
	Open • Libraries.		
	Outdoor playgrounds.		
Amateur sport and	Max of 4 people allowed to exercise outdoors.		
recreation	Sports clubs, swimming pools, wellness centres and fitness centres closed.		
	Transfer and the state of the s		
	Facilities		
	Facilities (or parts of them) belonging to the sports sector are closed to the public. However, indoor sports halls and infrastructures remain open for:		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Belgium <sup>(25)</sup>	Current Level: Alarm Level 4	Effective from and to: 02/11/2020 - 15/01/2020
	<ul> <li>groups of children up to the age of 12 years, as part of compulsory school or extracurricular activities, with the exception of swimming pools;</li> <li>sports activities, courses and camps organised or authorised by the local authorities for children up to the age of 12 years, with the exception of swimming pools;</li> <li>training for professional athletes;</li> <li>professional competitions;</li> <li>Indoor horse arenas in equestrian centres and racecourses also remain open, however, this is for the sole purpose of animal welfare</li> </ul>	
	Sports activities  Amateur athletes who are 13 years or older can only train outdoors. They can use the outside areas of sports infrastructures (e.g. a football field or basketball court) to train together with a max of 4 people.  Children up to 12 years of age can do sports activities or camps, both indoors and outdoors (and as long as they don't go in a swimming pool), provided they take place:  with a max of 50 children;  in an organised context, more specifically in a club or an association;	
Professional anath	<ul> <li>in the context of an indoor sport activity or camp organised or authorised by the local authorities;</li> <li>always in the presence of a trainer, coach or adult supervisor;</li> <li>in the presence of not more than one household member per participant.</li> <li>Children up to the age of 12 years may participate in school or extra-curricular sports activities of compulsory school education (provided the activity does not take place in a swimming pool) and according to the rules of the applicable protocol.</li> </ul>	
Facemasks		
Other	<ul> <li>When it is not possible to wear a face mask or any fabric alternative due to mee</li> <li>Some cities and municipalities will also have extra rules in place.</li> </ul>	a.s saccons, a tacc difficial dati be from

Belgium <sup>(25)</sup>	Current Level: Alarm Level 4	Effective from and to: 02/11/2020 - 15/01/2020
	<ul> <li>All the above measures are applicable until 15 Jan 2021. At the beginning of Ja whether a transition to the management phase is possible and for which sectors.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Czechia <sup>(20)</sup>	Current Level: Level 3 Orange	Effective from and to: 03/12/2020 - 23/12/2020
Movement of people	Personal contacts and outdoor movement should still be kept to a minimum.	
Social/mass gatherings		
	Max 50 people outdoors.	
	Religious gatherings	
	<ul> <li>Individual visits to churches, synagogues and mosques are permitted.</li> </ul>	
	<ul> <li>30% of total seating capacity permitted at religious gatherings.</li> </ul>	
	Woddings and functols	
	Weddings and funerals  • Max 30 people at funerals.	
	Max 30 people at redding ceremonies and receptions.	
<b>Business Activities</b>	Retail	
	All shops and stores including those in shopping malls open without restricted.	
	<ul> <li>Max number of persons in a group to enter a shop/shopping mall increased fro</li> <li>Max 1 person per 15m² of the shopping area remains as does gueue managem</li> </ul>	
	Children's corners within retail spaces remain closed.	ient.
	Children's corners within retail spaces remain closed.	
	Food and beverage	
	• Restaurants and bars (indoors and outdoors) open from 6am to 8pm.	
	<ul> <li>All guests must be seated. Max 4 people allowed at one table.</li> <li>Max capacity of 50% in restaurants.</li> </ul>	
	Restaurants in shopping malls with a shopping area larger than 5,000m² will be	e allowed to serve takeaway food.
	Takeaway only for catering establishments between 6am to 8pm.	- anonica to 55.75 tantaria, 1555.
	Catering establishments are closed between 10pm and 6am.	
<ul> <li>Ban on alcohol consumption in public reintroduced.</li> <li>Ban on the sale of alcohol from dispensers or restaurants, as well as in markets.</li> </ul>		
		S.
	Markets, marketplaces and mobile facilities	
	Other markets (besides farmers markets) can open.	
	<ul> <li>Max of 10 people can enter a farmers market, exception to this rule are memb</li> </ul>	pers of the same household.
	• Max 1 person on 15m² of the market area.	lan arasık bası ka baş fallanın d
	<ul> <li>Max number to enter a market together in a group is 6 people. Distancing of 2</li> <li>Market stalls have to be at least 4m apart from one another.</li> </ul>	im apart has to be followed.
• Market Stalls Have to be at least 4111 apart Holli One allottler.		
	Accommodation	
	Accommodation facilities open.	
	Hotel restaurants open between 10pm and 6am.      During opening bours, quests must be sected, there must be a distance of at least opening bours.	eact 1 Em between people at different tables. May 4 people can sit at one
	<ul> <li>During opening hours, guests must be seated, there must be a distance of at least table, if they are not members of one household.</li> </ul>	east 1.5111 between people at different tables. Max 4 people can sit at one
	More than 4 people can sit at long tables. However, the individual groups at a	long table must be separated by at least 2m. Total occupancy may not
	exceed 50% of the restaurant.	J
	The public are allowed in hotel restaurants within capacity constraints.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Czechia <sup>(20)</sup>	Current Level: Level 3 Orange	Effective from and to: 03/12/2020 - 23/12/2020
Primary schools	Grade 1 to 5 and Grade 9 students have returned to schools.	
	• Grade 6 to 8 students attend classes on a rotating basis.	
Secondary schools	• Reopened for senior students in the last year of secondary school, post-secondary vocational school, and conservatory programs as well as for hands-on	
	training.	
	<ul> <li>One-on-one lessons are also now permitted in art and language schools.</li> <li>From 7 Dec, the remaining years of secondary school will be allowed to return</li> </ul>	n to echael, but classes will alternate weeks of regular attendance and remote
	instruction.	in to school, but classes will alternate weeks of regular attendance and remote
Higher and adult education	• Universities have reopened for hands-on, laboratory, experimental, and art tu	ition for senior students in the last year of their study program, where
_	attendance will be limited to groups of max 20 students.	
	<ul> <li>Doctoral students have been able to resume their individual study plans.</li> </ul>	
Domestic travel	• Persons should remain at their place of residence and limit their movement.	
(including transport)		
International travel	Entry Restrictions	
(inbound)	• It is possible to travel to the Czech Republic only for essential reasons.	
	• Travelling for the purpose of tourism, or to visit friends, is not possible. This	decision does not affect cross-border workers in any new way. Border controls
	have not been reintroduced.	
	• In case of travellers for essential reasons, the following entry restrictions app	lv:
	For EU and non-EU countries classified as "high-risk" (red countries) it is mand	
	either within 5 days from the entry or right after arrival in case of a test taken no more than 72 hour before departure from the country of origin.  Furthermore a Passenger Locator Form is mandatory. The above-mentioned requirements are not necessary in the following circumstances:  - if your stay in a red country did not exceed 12 hours in last 14 days	
	- for cross-border workers, pupils and students coming from neighbouring countries	
	- in case of urgent travel (for work and/or health-related reasons) for a period of time not exceeding 12 hours	
	- in case of transit up to 12 hours.	
	For EU countries classified as "low-risk":	
	- in case of orange countries marked with *, entry is allowed without restriction	ns.
	- in case a foreigner working or studying in Czechia, a PCR test has to be delive	ered to the employer or the educational institution.
	In case of all (EU and non-EU) green countries, entry is allowed without restrictions.	
	Mandatory Travel Documentation	
	Passenger Locator Form is mandatory if coming from 'high risk' red zone.	
Culture/leisure/	Open	
entertainment	• All services open under clearly defined conditions with max 10 people gathered indoors and max 50 gathered outdoors.	
Amateur sport and	Amateur sport competitions can restart under strict conditions and without sp	pectators.
recreation	Max 10 people will be permitted to gather in one place indoors.	
	Max 50 people will be permitted to gather in one place outdoors.	191
	Sports and swimming facilities will be allowed to open under clearly defined conditions.	
	The following rules have been adopted for fitness centres and gyms:	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Czechia <sup>(20)</sup>	Current Level: Level 3 Orange	Effective from and to: 03/12/2020 - 23/12/2020	
	- Indoor spaces are limited by the rule of 1 person per 15m <sup>2</sup> .		
	- For group lessons, there is a limit of max 10 people (including 1 tra	iner).	
	- The obligation to wear a mask inside still applies.	,	
	- Individual training must be held at a minimum distance of 2m.		
	• Football can be played with max 2 playing teams / groups (the 6-person limit no longer applies) but indoor football is still forbidden.		
		Individual dance lessons can take place.	
B. (	Cable cars and ski lifts will remain closed to the public.	I. A. I.	
Professional sport	Professional leagues permitted without viewers and under specific r	ules. Amateur leagues banned.	
Facemasks	, , , , , , , , , , , , , , , , , , , ,	ask, respirator or a scarf – needs to be followed within any indoor areas (with	
	includes people who cannot wear a face covering because of a seriou	ce covering does not need to be worn by children under the age of 3 or while being with people who live in the same household. This exemption also people who cannot wear a face covering because of a serious mental illness or intellectual impairment.  ers may use a protective shield instead of a face mask when it is necessary for a pupil to see teacher's mouth. In such cases, the 2 meters must be	
	Outdoors  Obligation to cover your mouth and nose — especially with a face mask, a respirator or a scarf - needs to be followed within any urban areas of cities, towns and villages. This means between buildings, shops, in squares, and everywhere where people can be met. You do not need to wear a face covering e.g. when walking in the nature outside the city, town or village, or when alone away from other people.		
		ublic transport/taxi Obligation to cover your mouth and nose – especially with a face mask, a respirator or a scarf – needs to be followed while travelling via any public ransport, including bus/tram stops, train platforms and waiting rooms.	
	Workplace  Obligation to cover your mouth and nose – especially with a face m	Workplace  Obligation to cover your mouth and nose – especially with a face mask, a respirator or a scarf – applies also in workplaces.	
		opple also have to wear masks as follows: cars, if they are travelling with someone who is not a member of a joint household, and oublicly accessible places in the built-up area of a municipality, if at that place there are more than two people closer than 2 m apart and they are not	
	Sport • Face masks must be worn by athletes with exemptions for all active	athletes on sports premises outdoors and for professional athletes only when indoors.	
Christmas	Christmas events and activities are permitted within the rules including max 10 people gathered indoors and max 50 people gathered outdoors.		
Other	N/A	N/A	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Denmark <sup>(15)</sup>	Current Level: Risk Level 3	Effective from and to: 26/10/2020 - 28/02/2021	
Movement of people	<ul> <li>Employers</li> <li>Public and private employers are encouraged to make sure that employees job.</li> </ul>	• Public and private employers are encouraged to make sure that employees work from home to the extent possible and appropriate given the nature of the	
Social/mass gatherings	Restrictions applicable from 26/10/2020 to 13/12/2020  • Max number of people who can gather socially is lowered from 50 to 10 people.  • Max number of people allowed to gather at outdoor burial and funeral services is lowered from 200 to 50 people.  • Max 10 people in private homes is recommended.  • Max 10 social contacts (in addition to household/work/school/recreational activities) is recommended.  Restrictions applicable from 26/10/2020 to 02/01/2020  • Max 500 people can attend indoor and outdoor events simultaneously if all other conditions have been met.  • Max of 50 people can attend activities for socially vulnerable children and young people up to the age of 21, whether they are alone or with families, when the activities are organised by public authorities, organisations, associations, businesses or cultural institutions.  • Max of 50 people can attend sports and recreational activities without overnight accommodation for children and young people up to the age of 21, including any persons over the age of 21 who are responsible for the activity, if their presence is deemed necessary in order to hold the activity in a responsible manner.  Weddings and religious services  • Weddings, confirmations and similar special occasion days that have already been scheduled can be held but the event ought to end by 10pm (should be organised in compliance with the rules on gatherings above).		
Business Activities	All open with the following restrictions:  Retail  Not permitted to sell alcohol in retail shops and kiosks after 10pm. Recommended that only one family member at a time does the shopping.  Food and beverage Remain open but close at 10pm. Establishments can stay open from 10pm to 5am to sell takeaway food and drinks.		
Primary schools	• Open		
Secondary schools	Open		
Higher and adult education	• Open		
Domestic travel (including transport)	Recommended to travel outside rush hours or alternatively walk or take the bike.		
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Entry from EU Member States + Schengen Associated countries is allowed without restrictions, unless a country or region is defined as high risk or 'banned'.</li> <li>Entry from high risk or 'banned' countries is possible for 'worthy purpose' only (not for tourism). Some regions are exempted from entry restrictions in accordance with the established Nordic mechanism, which applies to persons resident in the border regions.</li> </ul>		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Denmark <sup>(15)</sup>	Current Level: Risk Level 3	Effective from and to: 26/10/2020 - 28/02/2021	
	negative COVID-19 test taken no more than 72 hours before entry.	• Maps and lists of open, high risk and banned countries are based on the current number of infected people and updated weekly by the SSI (Statens Serm	
	,	• If a person who wants to enter Denmark cannot present proof of a negative COVID-19 test taken no more than 72 hours before entry, the relevant person must expect to be refused entry.	
	Mandatory Travel Documentation		
Culture/leisure/ entertainment	<ul> <li>Information on required documentation is available on the Danish Police website.</li> <li>Recommended to cancel all civic festivals and similar events (such as open-by-night involving retail shops, institutions etc. in the public space).</li> <li>Recommended to cancel events with overnight accommodation, such as holiday camps, school camps and study tours.</li> <li>Nightclubs, discotheques etc. must stay closed.</li> <li>Premises used as music venues with a standing audience must stay closed.</li> <li>The consumption of alcohol on moving coaches and buses is banned.</li> <li>Public and private employers are encouraged to ensure that all social events at and in connection with workplaces are cancelled.</li> </ul>		
Amateur sport and recreation	<ul> <li>Max 50 people can gather for sports activities for children and young people.</li> <li>For other sports activities, max 10 people can gather.</li> </ul>	Max 50 people can gather for sports activities for children and young people.	
Professional sport	Max 500 people if seated and facing a stage, cinema screen, playing field or the stage.	ne like.	
Facemasks	<ul> <li>By law, you must now wear a face mask or a visor:</li> <li>When you are travelling by public transport.</li> <li>When you are not seated at the table in indoor sit-down restaurants, cafés, fast food restaurants, pastry shops, bakeries etc.</li> <li>In all shops, for example supermarkets, grocery shops, shopping centres, department stores, bazaars, arcades, etc. to which the public has access.</li> <li>In indoor spaces such as canteens, corridors and communal areas at universities, secondary and further education, music schools, driving schools, folk high schools, day colleges and evening schools, for example. This requirement does not apply in auditoriums and certain other places.</li> <li>Teachers and educators in primary and secondary schools must wear a visor in class.</li> <li>Indoors at museums, galleries, entertainment venues and sports facilities and fitness centres. You do not have to wear a face mask or visor when you are seated in the cinema or theatre or participating in a sport or performing.</li> <li>In churches or other places of worship. This requirement does not apply with you are seated.</li> <li>In hospitals, clinics, the doctor's office, nursing homes, etc. This requirement does not apply to inpatients, certain residents in nursing homes, homeless hostels, etc. but the local management can introduce restrictions.</li> <li>In addition, we recommend that you use a face mask:</li> <li>If you are infected or at risk of being infected with novel coronavirus and have to leave your home, for example because you need to be tested.</li> <li>If you are at higher risk of severe illness from COVID-19 and get into situations where it is difficult for either you or others to keep a distance of 2 m, for example at a party.</li> </ul>		
	<ul> <li>If you visit someone at higher risk and whom you do not live with, for example a person in a nursing home, consider wearing a face mask in the situations when you cannot keep a distance of at least 2 m.</li> <li>In large crowds, for example demonstrations or parades, where it can be difficult to keep your distance.</li> </ul>		
Christmas	The national recommendations apply throughout all of December, including Christmas Eve and New Year's Eve.  The national recommended over the Christmas holidays (and New Year's Eve) that there is a max of 10 people in private homes and a max of 10 social contacts.		

Denmark <sup>(15)</sup>	Current Level: Risk Level 3 Effective from and to: 26/10/2020 – 28/02/2021		
	<ul> <li>Christmas Eve and Christmas Day 2020</li> <li>See only a few people over the Christmas holidays.</li> <li>On Christmas Eve you can see your immediate family, even if you have not been with them recently - and they have therefore not been part of the max 10 social contacts you have been encouraged to have social contact with.</li> <li>Adjustments are being made to the assembly ban for more than 10 people to apply to Christmas events at social services and nursing homes, as well as for</li> </ul>		
	homeless and vulnerable people, so that for example, communal dining with up to 50 participants can be arranged.  New Year's Eve 2020  Ban on the sale of alcohol.  Adjustments are being made to the assembly ban for more than 10 people to apply to New Year's Eve events at social services and nursing homes, as well		
	as for homeless and vulnerable people, so that for example, communal dining with up to 50 participants can be arranged.		
Other	Regional restrictions  The regions in Denmark may be at different levels of risk, and measures may be implemented geographically differently.  New measures can be implemented in selected areas, while measures are maintained in other areas ensuring that the right combination of measures is implemented to keep infection down, while keeping society as open as possible.		
	• The measures will depend on where in society infections are and which measures the health authorities consider to be most effective.	• The measures will depend on where in society infections are and which measures the health authorities consider to be most effective.	

Denmark(15) (38 municipalities including the Capital Region of Denmark, Region Zealand, the Central Jutland Region and selected others) [All measures are as above for Denmark and the following]	Current Level: Risk Level 4	Effective from and to: 09/12/2021- 03/01/2021
<b>Business Activities</b>	• Restaurants (restaurants, cafes, bars, etc.) closed for dining but open for take-	away.
Primary schools	Closed and operating by distance learning. It is recommended that day care centres, schools and educational institutions do not participate in Christmas services.	
Secondary schools	<ul> <li>Closed and operating by distance learning.</li> <li>It is recommended that day care centres, schools and educational institutions do not participate in Christmas services.</li> <li>Exams are exempt to the extent that conversion to online exams are not practically possible.</li> </ul>	
Higher and adult education	<ul> <li>Closed and operating by distance learning.</li> <li>It is recommended that day care centres, schools and educational institutions do not participate in Christmas services.</li> <li>Exams are exempt to the extent that conversion to online exams are not practically possible.</li> </ul>	
Culture/leisure/ entertainment	Closed  • Buildings where associations and leisure activities operate.	
	<ul> <li>Indoor areas in amusement parks, zoos, aquariums and the like.</li> <li>Indoor areas of cultural institutions including theatres, concert halls, venues, museums, art galleries, cultural centres, cinemas, libraries receipt and lending to research and teaching except evening schools, day colleges, Folkeuniversitetet as well as music and culture schools.</li> </ul>	
Amateur sport and recreation	<ul> <li>Buildings where sports and recreation activities are practiced must be closed to the public.</li> <li>The exemption for up to 50 people present at sports and association activities for children and young people up to 21 years does not apply.</li> </ul>	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

France <sup>(21)</sup>	Current Level: Confinement	Effective from and to: 30/10/2020 – 15/01/2020
Movement of people	<ul> <li>Travel is prohibited with a number of exceptions and upon certification.</li> <li>Telecommuting is 100% compulsory wherever possible. If you cannot work from home staggered work patterns must be encouraged.</li> <li>Physical activities and walks within a radius of 20km of home permitted and for a max duration of 3 hours. This authorisation to travel is not intended to facilitate visits to friends and family.</li> <li>A fixed fine of €135 will be applied in the event of non-compliance with confinement.</li> </ul>	
Social/mass gatherings	Mass Gatherings  • Max 6 people on public roads with the exception of protest demonstrations declared to relevant authorities.	
	House gatherings Not permitted.  Places of worship	
	Open for service, max 30 people.	
	Funerals  Max 30 people at funeral ceremonies.  Cemeteries will not close.  Weddings  Max 6 people.	
Business Activities	<ul> <li>Open.</li> <li>Non-essential shops and home services until 9pm as part of a strict health protocol.</li> <li>Public services (including counter services), wholesale businesses, food markets and analytical laboratories</li> <li>Driving schools will be able to resume their preparation activity for the practical tests of the driving license, in compliance with the health protocol they have applied until now. The preparation of theoretical tests will continue to be done remotely.</li> <li>The construction and public works sector as well as factories and farms.</li> </ul>	
Primary schools	<ul> <li>Nurseries, schools and colleges remain open with a reinforced health protocol.</li> </ul>	
Secondary schools	High schools remain open with reduced face-to-face lessons. There must be a	
Higher and adult education	<ul> <li>All lectures and tutorials are now on a remote basis, except for certain practical work.</li> <li>Access to university libraries is possible but only by appointment.</li> <li>University restaurants will provide takeaway only.</li> </ul>	
Domestic travel (including transport)	Travel is generally prohibited.	
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Travelling from EU Member States + Schengen Associated countries to Metropolitan France is allowed without restrictions.</li> <li>Travellers coming from other countries are encouraged to have a negative PCR test before they arrive in France. Those without a negative PCR test will be presented with information upon their arrival in France about the conditions for carrying out a 7-day quarantine at a location of their choice or, where appropriate, in special accommodation. They will be informed of the possibilities for carrying out a test at the airport and in France.</li> <li>Symptomatic travellers during border health checks should be subject to quarantine, regardless of their nationality.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

France <sup>(21)</sup>	Current Level: Confinement Effect	ctive from and to: 30/10/2020 – 15/01/2020	
	• Specific rules apply to the French Overseas Territories: all travellers aged over 11 years will have to produce a negative PCR test result, carried out less than 72 hours before boarding, in addition to the rules set out above.		
		• Travel to or from French Guiana, French Polynesia, Mayotte, New Caledonia, and the Wallis and Futuna islands is allowed only for compelling family or	
	professional reasons.		
	• A certificate of exemption on restrictions of movement is required to travel to or from	these overseas territories.	
	<ul> <li>Upon arrival in Metropolitan France from one of these territories, you will be encourage</li> </ul>	ged to submit to a PCR test or, failing that, to comply with a 7-day	
	quarantine period.		
	Mandatory Travel Documentation		
	No special documentation is required.		
Culture/leisure/	Closed		
entertainment	• Theatres, shows and cinemas although professional artists wishing to rehearse or to re	ecord can go these establishments.	
	• Play centres.		
	• Sports halls, casinos, gaming rooms, fairs.		
	Open - Parks and gardens.		
	Beaches, lakes and bodies of water.		
	Libraries and bookstores.		
Amateur sport and	Children's sports activities may continue but must take place near or within the school		
recreation	Amateur sports competitions are suspended.		
100.000.000	• Sports halls are closed.		
	Authorization of extra-curricular outdoor activities.		
	• Physical activities and walks within a radius of 20km of home permitted and for a max duration of 3 hours.		
Professional sport	Professional sports competitions can take place but must be done behind closed doors.		
Facemasks	Facemasks are compulsory in school from 6 years of age.		
	Facemasks must be worn in all open shops.		
	Facemasks must be worn on all public transport.		
	Facemasks must be worn if social distancing can't be respected.		
Other	Advised changes in Restrictions		
	15 Dec: End of confinement if epidemiological situation allows (less than 5,0	00 infections per day)	
	<ul> <li>End of certificates and travel between authorized regions.</li> <li>Establishment of a curfew from 8pm to 6am with the exception of Christmas Eve on 24 Dec.</li> </ul>		
	• Extension of the closure of places open to the public (cinemas, theatres, museums) for	or 3 weeks. Possibility of reopening on 7 Jan 2021.	
	Prohibition of gatherings on public roads.     20 Jan: New openings if sanitary conditions allow		
	Opening of sports halls and restaurants.		
	Resumption of face-to-face classes for high schools and if conditions are maintained, if	resumption of face-to-face classes in universities 15 days later	
	Possible reopening of ski resorts in January.	resumption of face to face classes in universities 13 days later.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Germany <sup>(24)</sup>	Current Level: Not reported	Effective from and to: 02/11/2020 -10/01/2020	
Movement of people	People are asked to refrain from non-essential travel for personal	People are asked to refrain from non-essential travel for personal reasons and from visiting people, including relatives.	
Social/mass gatherings	<ul> <li>Advised to limit contact with people as far as possible.</li> <li>Private get-togethers with friends, relatives and acquaintances limited to your own household and to another household, but in any case a max of 5 people. Children up to 14 years of age are generally exempt from this. In the state of Berlin, for example, only children up to the age of 12 are exempt from the contact restrictions.</li> <li>Religious celebrations</li> <li>Special religious celebrations such as baptisms, circumcisions and weddings as well as funeral services may take place in small groups. The details are regulated by the respective federal states.</li> <li>Religious acts that attract large numbers of visitors should be avoided (for example pilgrimages or processions).</li> </ul>		
Business Activities	<ul> <li>Wholesalers and retail shops</li> <li>Will remain open, subject to certain conditions.</li> <li>People are asked to do their Christmas shopping during the week</li> <li>The number of customers in the shops is limited: <ul> <li>with a sales area of up to 800sqm, only 1 person per 10sqm of s</li> <li>in the case of larger shops, 1 person per 20sqm of sales area is a</li> <li>for shopping centres, the respective total sales area is to be used</li> </ul> </li> <li>Personal care services <ul> <li>Beauticians and masseurs will be closed.</li> <li>Necessary medical treatments, such as physiotherapy, occupation</li> <li>Hairdressers may remain open subject to the present hygiene and</li> </ul> </li> <li>Food and beverage <ul> <li>Restaurants and cafés, as well as bars, pubs and similar establish</li> </ul> </li> </ul>	<ul> <li>Congregation and choir singing as well as orchestral accompaniment are not recommended.</li> <li>Wholesalers and retail shops</li> <li>Will remain open, subject to certain conditions.</li> <li>People are asked to do their Christmas shopping during the week if possible.</li> <li>The number of customers in the shops is limited: <ul> <li>with a sales area of up to 800sqm, only 1 person per 10sqm of sales area may be in the shop.</li> <li>in the case of larger shops, 1 person per 20sqm of sales area is also permitted from 800 sqm.</li> <li>for shopping centres, the respective total sales area is to be used.</li> </ul> </li> <li>Personal care services <ul> <li>Beauticians and masseurs will be closed.</li> <li>Necessary medical treatments, such as physiotherapy, occupational therapy and speech therapy, as well as podiatry and chiropody, will still be permitted.</li> <li>Hairdressers may remain open subject to the present hygiene and distancing conditions.</li> </ul> </li> <li>Food and beverage <ul> <li>Restaurants and cafés, as well as bars, pubs and similar establishments will be closed.</li> <li>Exceptions are permitted for the delivery and collection of food that can be taken away and consumed at home, and for the operation of canteens.</li> </ul> </li> </ul>	
Primary schools	<ul> <li>Nurseries and schools remain open.</li> <li>In the event of an infection incidence &gt;200 new infections per 100,000 inhabitants per week, further measures for the design of lessons in the years from grade 8 should be implemented specifically for the school, which better ensure the implementation of hybrid or alternating lessons.</li> </ul>		
Secondary schools	Schools remain open.		
Higher and adult education	Colleges and universities should switch to digital teaching.		
Domestic travel (including transport)		People are asked to generally refrain from non-essential travel for personal reasons and from visiting people, including relatives.	
International travel	Entry Restrictions	Entry Restrictions	
(inbound)	<ul> <li>Entry from EU Member States + Schengen Associated countries is allowed without restrictions, unless a country or region is defined as a high risk area. The Robert Koch Institute provides a list of international risk areas, which is updated regularly.</li> <li>Travellers entering the Federal Republic of Germany, who have been in a risk area at any time within the last 10 days before entry, are obliged to self-</li> </ul>		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Germany <sup>(24)</sup>	Current Level: Not reported	Effective from and to: 02/11/2020 -10/01/2020	
		isolate for 10 days in accordance with the testing and quarantine regulations obligations of the competent Federal State.  • The entry rule is based on the country from which the traveller is coming from, and not on nationality.	
	<ul> <li>Mandatory Travel Documentation</li> <li>No special documentation is required from a non-high risk area.</li> <li>If coming from a high risk area, you need to complete a Digital Registration on entry so that the local health authority can check whether you're staying in quarantine.</li> <li>All professional and private trips that are not absolutely necessary, in particular tourist trips abroad, including in view of the ski season, are to be avoided.</li> </ul>		
	• The Federal Government is asked to work at European level to ensure t	hat ski tourism is not permitted until 10 Jan.	
Culture/leisure/ entertainment	<ul> <li>Closed</li> <li>Institutions and facilities classified as recreational including theatres, cir</li> <li>Clubs, discotheques, and similar establishments.</li> <li>Events for the purposes of entertainment are prohibited.</li> </ul>	nemas, amusement parks, amusement arcades, brothels, and similar facilities.	
Amateur sport and recreation	Individual sport engaged in alone, in pairs or with your own household	<ul> <li>Individual sport engaged in alone, in pairs or with your own household is permitted.</li> <li>Institutions and facilities classified as recreational will be closed including gyms and similar facilities, recreational and amateur sport in all public and private</li> </ul>	
Professional sport	<ul> <li>Professional sports events may only take place without spectators.</li> </ul>		
Facemasks	<ul> <li>Facemasks are compulsory in all stores and on public transport.</li> <li>Wear a mouth and nose cover if you cannot keep the minimum distance of 1.5m from others in public spaces. This applies to both leisure and work and is particularly important in closed rooms.</li> <li>The mask requirement will be expanded and will in future also apply to the space in front of retail shops and in parking lots.</li> <li>In regions with an incidence of &gt;50 new infections per 100,000 inhabitants, all persons are required to wear a mouth and nose cover on the school premises of all schools where the distance is not observed and in lessons in secondary schools from grade 7.</li> <li>Everyone has to wear a mouth and nose cover in closed rooms that are accessible to the public or receives visitors or customers.</li> <li>It is mandatory to wear a mouth and nose cover in all public places in inner cities.</li> <li>Mouth and nose protection must be worn in work and production facilities; this does not apply at the site if a distance of 1.5m to other people can be safely maintained.</li> </ul>		
Christmas	Separate rules for contact restrictions apply for Christmas.  • For the period from 23 Dec 2020 to 1 Jan 2021, the max number of people for indoor and outdoor gatherings will be expanded:  - Meetings with close family or friends are possible for a max 10 people in total. Children up to 14 years of age are exempt from this.  - In order to avoid the risk of infection, it makes sense, wherever possible, to reduce contacts to what is really necessary 5 to 7 days before family encounters, especially with older family members.  • At the turn of the year, the federal and state governments recommend avoiding New Year's fireworks. The use of pyrotechnics is prohibited on busy streets and squares.  • Employers are asked to check whether the business premises can be closed from 23 Dec to 1 Jan either due to company holidays or generous home office solutions in order to be able to implement the principle "We stay at home" nationwide.  **Advised changes to Restrictions** (13 Dec 2020)  • Private get-togethers with friends, relatives and acquaintances are still to be limited to one's own household and one other household, but in any case to a max of 5 people. Children up to 14 years of age are exempt from this.		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Germany <sup>(24)</sup>	Current Level: Not reported	Effective from and to: 02/11/2020 -10/01/2020	
	<ul> <li>applicable contact restrictions, permit meeting with 4 closest family members this means more than 2 households or 5 people over 14 years.</li> <li>On New Year's Eve and New Year's Day, a ban on gathering will be implement</li> </ul>	• On New Year's Eve and New Year's Day, a ban on gathering will be implemented nationwide. In addition, there is a ban on fireworks in public places. The sale of pyrotechnics before New Year's Eve is generally prohibited this year and the lighting of New Year's Eve fireworks is strongly advised against, also	
Other	Regional Restrictions  Additional regulations may apply for severely affected cities and states.  In order to be able to react appropriately to special regional situations, region well below 50 new infections per 100,000 inhabitants within 7 days for 7 consecutive relevant indicators, such as the utilization of intensive care capacities and In particularly extreme infection situations with an incidence of over 200 new	Regional Restrictions	
	Advised changes to Restrictions (13 Dec 2020)  The Federal Chancellor and the heads of government of the federal states have following additions and changes:  Movement	The Federal Chancellor and the heads of government of the federal states have decided that existing resolutions remain in effect until 10 Jan 2021 with the following additions and changes:	
	<ul> <li>Employers are urged to consider whether their businesses premises can be closed or home working facilitated from 16 Dec to 10 Jan 2021.</li> <li>Gatherings</li> <li>Private get-togethers with friends, relatives and acquaintances are still to be limited to one's own household and one other household, but in any case to a max of 5 people. Children up to 14 years of age are exempt from this.</li> <li>The consumption of alcoholic beverages in public places is prohibited from 16 Dec to 10 Jan 2021.</li> </ul>		
	Religious Services  Church services in churches, synagogues and mosques as well as meetings of other religious communities are only possible under certain conditions. The Federal Ministry of the Interior will hold talks with the religious communities.  Business Activities  The retail trade will be closed from 16 Dec to 10 Jan 2021. The grocery trade and the trade in essential goods are excluded.  Service companies such as hairdressing salons are being closed because physical proximity cannot be avoided here. Medically necessary treatments such as physiotherapy remain possible.  Education  Contacts at schools are to be significantly restricted between 16 De and 10 Jan 2021. During this time, children should be cared for at home whenever possible. For this reason, the schools are generally closed during this period or the compulsory attendance is suspended. Emergency care is ensured and distance learning is offered. The same procedure is used in day-care centres.		
		<ul> <li>Travel</li> <li>The federal and state governments urge all citizens to refrain from travel to Germany and abroad that is not absolutely necessary in the period up to 10 Jan 2021.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Ireland <sup>(12)</sup>	Current Level: Level 3	Effective from and to: 01/12/2020 — Unknown
Movement of people	<ul> <li>Stay in your county apart from work, education, medical and other essential purposes, if appropriate.</li> <li>Work from home unless absolutely necessary to attend in person.</li> </ul>	
Social/mass gatherings	In your home or garden No visitors to home or garden, with the exception of visits for essential purposes.  Other settings outside your home or garden Max 6 people from max 2 households can meet outdoors while maintaining strict physical distancing. No other social or family gatherings should take place.  Organised outdoor gatherings Max 15 people - these are controlled environments with a named event organiser, owner or manager. For example: outdoor arts events and training events.  Organised indoor gatherings No organised indoor gatherings No organised indoor gatherings should take place.  Religious services Max 50 people can attend services at places of worship.  Weddings Max 25 can attend wedding ceremony and reception, whether indoors or outdoors.	
Max 25 mourners.  Retail and services (for example, hairdressers, beauticians, barbers)     All retail shops and shopping centres can open.     All services such as hairdressers, beauticians, barbers and opticians can open with strict adherence to sectorial guidance on From 4 Dec:     Food and beverage (including hotel restaurants and bars)     Restaurants and pubs open with max 6 people per table.  Accommodation     Hotels, guesthouses and B&B's can open, but with services limited to residents.     Hotel restaurants can open to non-residents.  Wet pubs     Takeaway or delivery only.		ans can open with strict adherence to sectorial guidance on protective measures.
Primary schools	Early learning services and schools will remain open.	
Secondary schools	Schools will remain open.	
Higher and adult education	Primarily online with exemptions for essential onsite activities.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Ireland <sup>(12)</sup>	Current Level: Level 3	Effective from and to 101/12/2020 Unknown
		Effective from and to: 01/12/2020 – Unknown
Domestic travel (including transport)	<ul> <li>Walk or cycle where possible.</li> <li>Public transport will operate at 50% capacity for the purposes of allowing those providing essential services to get to work.</li> </ul>	
(including transport)	School transport is unaffected.	
International travel	Entry Restrictions	
(inbound)	<ul> <li>The Irish Authorities advise anyone coming into Ireland, apart from Northern Ireland and individuals arriving in Ireland from locations with a security rating of 'normal precautions', to restrict their movements for 14 days, and this includes citizens and residents returning to Ireland. Restricting your movements means staying indoors in one location and avoiding contact with other people and social situations as much as possible.</li> <li>In line with the EU traffic lights approach, the request to restrict movements does not apply to travellers from 'green' regions.</li> <li>Currently, all passengers entering Ireland from orange, red, and grey regions are requested to restrict their movements for 14 days.</li> <li>However, passengers arriving from an orange region, who have received a negative/'not detected' result from a COVID-19 PCR test taken during the three days before departure to Ireland do not have to restrict their movements.</li> <li>Additionally, passengers arriving from orange, red and grey regions can end the period of restricted movement if they receive a negative/'not detected' result of a PCR test that has been taken a minimum of 5 days after arrival in Ireland. A negative test result should be returned before ending the period of restricted movement.</li> <li>Mandatory Travel Documentation</li> </ul>	
Culture/leisure/	COVID-19 Passenger Locator Form	
entertainment	Closed  Nightclubs, discos and casinos.	
Citertainment	Open	
	• Libraries will be available for browsing, e-services, and call and collect. No seating or events.	
	Museums, galleries and cinemas.	
Amateur sport and	Training and matches	
recreation	Non-contact training can continue for school aged children, outdoors in pods of 15.	
	• Non-contact training permitted outdoors only in pods of up to 15 max (for example: golf, tennis, horse riding, hunting, Gaelic games, soccer, outdoor basketball).	
	• Indoor training on an individual basis only. No exercise or dance classes (for example: no ballet, gymnastics, basketball, racketball, squash, zumba, drama).	
	• Senior inter-county Gaelic games are permitted to continue behind closed doors.	
	Gyms, leisure centres and swimming pools.	
	Gyms, leisure centres and swimming pools can open for individual use only, with protective measures in place.	
Professional sport	Professional and elite sports, horse-racing and greyhound racing are permitted	to continue behind closed doors.
Facemasks	Face coverings must be worn in the following locations:	
	- shops, including pharmacies	
	- supermarkets - shopping centres	
	- libraries	
	- cinemas and cinema complexes	
	- theatres	
	- concert halls	
	- bingo halls	
	- museums	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Ireland <sup>(12)</sup>	Current Level: Level 3	Effective from and to: 01/12/2020 - Unknown
	<ul> <li>nail salons</li> <li>hair salons and barbers</li> <li>tattoo and piercing parlours</li> <li>travel agents and tour operators</li> <li>laundries and dry cleaners</li> <li>betting shops and bookmakers</li> <li>Additionally, in restaurants and cafes (including pubs that serve food and hotel where no other protective measures are in place, for example: protective screens worn by customers when arriving to and leaving their table.</li> <li>Face masks must be worn by all secondary school students over the age of 13</li> <li>Wearing of face coverings is also recommended in the following circumstances:</li> <li>by people visiting the homes of those who are over 70 years of age or who are</li> <li>by people who are being visited in their homes by those who are over 70 years</li> <li>if you are travelling in a vehicle with someone you don't live with.</li> <li>Cloth face coverings are not suitable for children under the age of 13 and anyo</li> <li>has trouble breathing.</li> <li>is unconscious or incapacitated.</li> <li>is unable to remove it without help.</li> <li>has special needs and who may feel upset or very uncomfortable wearing the</li> <li>Face coverings are recommended in busy or crowded outdoor areas.</li> <li>Face coverings are recommended in places of worship.</li> <li>Face coverings are recommended in crowded workplaces.</li> </ul>	s and where physical distancing of 2m is not possible. They must also be where a 2m distance between students is not possible.  e medically vulnerable s of age or who are medically vulnerable ne who:
Christmas	From 18 Dec:  • Max 2 other households can visit your home/garden.  • Max 3 households can meet outdoors.  • Travel outside your county permitted.	
Other	From 7 Jan: • The measures put in place prior to 18 December will apply, subject to ongoing N/A	review of the trajectory of the virus.

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Italy (Region of Abruzzo)(8)	Current Level: Red area (maximum risk)	Effective from and to: 05/12/2020 -20/12/2020	
Movement of people	• Forbidden to travel within one's own municipality, from one municipality to another and from one region to another, except for reasons of work, urgent		
	matters, and health.		
	• Strongly recommended to refrain from travelling by public or private means of		
	urgent matters, or when carrying out activities or using services that are still ava	ilable.	
Social/mass gatherings	Gatherings of people in public places or places open to the public is forbidden.		
Business Activities	Retail	and many what was size to the deveation the indusprise and having	
	Closed, except for supermarkets, food, news-stands, tobacconists, pharmacies     Beauty centres closed.	and para-pharmacies, launderettes, hairdressers and barbers.	
	• beauty tentres closed.		
	Food and beverage		
	• Closed 7 days a week.		
	Take-away allowed until 10pm. There are no restrictions on home delivery.		
Primary schools	Kindergartens, primary schools and first year of middle schools remain open.		
	Online schooling for second and third year of middle schools.		
Secondary schools	Online schooling for secondary schools.	1. 1. 1 1.8	
Higher and adult advention	From 7 Jan, face-to-face teaching activities must be guaranteed to 75% of the	student population.	
Higher and adult education  Domestic travel	Closed, with specific exceptions.      Forbidden to travel from one region to another and from one municipality to another.	other even within enels own municipality, except for reasons of work	
(including transport)	• Forbidden to travel from one region to another and from one municipality to another, even within one's own municipality, except for reasons of work, urgent matters, and health.		
(including cransport)	• Up to 50% reduction in passenger numbers on public transport, except for school transport.		
International travel	Entry Restrictions		
(inbound)	• Travelling rules vary, depending on the country of origin or destination and the reasons for travelling. Entry rules are available <a href="here">here</a> .		
	Travellers from some countries must:		
	a) present a declaration to the effect that they have taken a molecular or antigenic swab test, with a negative result, within 72 hours before entering Italy.		
	alternatively  b) undergo a molecular or antigonic swalp test on arrival at the airport, port, or border location (where possible) or within 49 hours of entering Italy at the		
	b) undergo a molecular or antigenic swab test on arrival at the airport, port, or border location (where possible) or within 48 hours of entering Italy at the competent local health authority surgery		
	• 14 days quarantine is required when travelling from certain countries.		
	Tradys quarantine is required when davening from cortain countries.		
	Mandatory Travel Documentation		
	All persons travelling to Italy from any foreign location are required to provide a self-declaration to the carrier or, upon request, to law enforcement		
	officers.		
Culture/leisure/	Closed		
entertainment	Museums and exhibition halls.     Theatres and cinemas		
	<ul> <li>Theatres and cinemas.</li> <li>Amusement arcades, betting rooms and bingo facilities (also in bars and tobacco shops).</li> </ul>		
Amateur sport and	Exercise in proximity of home and individual outdoors sports activities are allow		
recreation	All sports competitions suspended.		
	Activities in sports centres suspended.		
	• Gyms closed.		
Professional sport	Those recognised as being of national interest by the International Olympic Cor	mmittee and the Italian Paralympic Committee allowed.	

Italy (Region of Abruzzo)(8)	Current Level: Red area (maximum risk)	Effective from and to: 05/12/2020 -20/12/2020
Facemasks	<ul> <li>Mandatory to carry a face mask with you at all times.</li> <li>These must be worn, not only in closed spaces accessible to the public, as in the past, but also in indoor spaces in general, other than private homes, and also in all outdoor spaces.</li> <li>The use of a face mask is also strongly recommended in private homes, if there are non-residents visiting.</li> <li>Exceptions are made in cases where, due to the characteristics of the place or the actual circumstances, the condition of isolation from non-residents is continuously guaranteed.</li> <li>Children under 6 years of age, people with pathologies or disabilities incompatible with the use of a face mask and those who interact with the latter, are excluded from the obligation to wear a face mask.</li> <li>Furthermore, the use of a facemask will not be mandatory during any sports activity.</li> </ul>	
Christmas	Restriction of movement From 21 Dec to 6 Jan, all travel between different regions and to/from the auto second homes. On 25 and 26 Dec, and 1 Jan it is forbidden to move between municipalities thr On 25 and 26 Dec and 1 Jan, it is forbidden to travel to any holiday/second hor Food and beverage From 21 Dec to 6 Jan, catering activities in the red areas are open from 5am to  Travel Italians who travel abroad for tourism from 21 Dec to 6 Jan will have to underg Foreign tourists arriving in Italy at the same time will also have to undergo qua  Skiing Facilities for amateur skiers will be closed from 4 Dec to 6 Jan.	roughout Italy. The located in another municipality.  The located in another municipality.
Other	N/A	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Italy (Regions of Basilicata, Calabria, Campania, Lombardy, Piedmont, Autonomous Province of Bolzano, Tuscany, Valle d'Aosta)(8)	Current Level: Orange area (high risk)	Effective from and to: 05/12/2020 - 20/12/2020
Movement of people	<ul> <li>Curfew from 10pm to 5am, unless there are proven reasons for work, necessity study reasons or urgent matters.</li> <li>Strongly recommended to refrain from travelling by public or private means of urgent matters, or when carrying out activities or using services that are still ava</li> </ul>	transport, with the exception of work, study and health related reasons, any
Social/mass gatherings	• Gatherings of people in public places or places open to the public is forbidden.	
Business Activities	Retail  Shopping centres will be closed on weekends, public holidays, and pre-holidays, except for pharmacies, para-pharmacies, food shops, tobacconists, and newsagents inside shopping centres.  Food and beverage  Closed 7 days a week.  Take-away allowed until 10pm. There are no restrictions for home delivery.	
Primary schools	Pre-schools, primary schools, and middle schools open.	
Secondary schools	<ul> <li>Online schooling for high schools, except for students with disabilities and in th</li> <li>From 7 Jan, face-to-face teaching activities must be guaranteed to 75% of the</li> </ul>	student population.
Higher and adult education	Universities closed, except for some activities for first year students and workshops.	
Domestic travel (including transport)	<ul> <li>Travel in and out from one Region to another and from one municipality to another is not allowed, unless proven reasons are provided, with the recommendation to avoid unnecessary travel even at daytime, within one's own municipality.</li> <li>Up to 50% reduction in passenger numbers on public transport, except for school transport.</li> </ul>	
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Travelling rules vary, depending on the country of origin or destination and the reasons for travelling. Entry rules are available <a href="here">here</a>.</li> <li>Travellers from some countries must: <ul> <li>a) present a declaration to the effect that they have taken a molecular or antigenic swab test, with a negative result, within 72 hours before entering Italy.</li> <li>alternatively</li> <li>b) undergo a molecular or antigenic swab test on arrival at the airport, port, or border location (where possible) or within 48 hours of entering Italy at the competent local health authority surgery</li> <li>14 days quarantine is required when travelling from certain countries.</li> </ul> </li> <li>Mandatory Travel Documentation</li> <li>All persons travelling to Italy from any foreign location are required to provide a self-declaration to the carrier or, upon request, to law enforcement officers.</li> </ul>	
Culture/leisure/ entertainment	Closed  Museums and exhibition halls.  Theatres and cinemas.  Amusement arcades, betting rooms and bingo facilities (also in bars and tobacc	co shons)
Amateur sport and recreation	Swimming pools and gyms closed.     Sports centres open.	от отторо).

Italy (Regions of Basilicata, Calabria, Campania, Lombardy, Piedmont, Autonomous Province of Bolzano, Tuscany, Valle d'Aosta)(8)	Current Level: Orange area (high risk)	Effective from and to: 05/12/2020 - 20/12/2020
Professional sport	No information found.	
Facemasks	<ul> <li>Mandatory to carry a facemask with you at all times.</li> <li>These must be worn, not only in closed spaces accessible to the public, as in the past, but also in indoor spaces in general, other than private homes, and also in all outdoor spaces.</li> <li>The use of a facemask is also strongly recommended in private homes, if there are non-residents visiting.</li> <li>Exceptions are made in cases where, due to the characteristics of the place or the actual circumstances, the condition of isolation from non-residents is continuously guaranteed.</li> <li>Children under 6 years of age, people with pathologies or disabilities incompatible with the use of a facemask and those who interact with the latter, are excluded from the obligation to wear a facemask.</li> </ul>	
Christmas		
Other	Facilities for amateur skiers will be closed from 4 Dec to 6 Jan.  N/A	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Italy (Regions of Emilia Romagna, Friuli Venezia Giulia, Lazio, Liguria, Marche, Molise, Autonomous Province of Trento, Puglia, Sardinia, Sicily, Umbria, Veneto)(8)	Current Level: Yellow area	Effective from and to: 05/12/2020 — 20/12/2020
Movement of people	<ul> <li>Curfew from 10pm to 5am, unless there are proven reasons for work, necessity study reasons or urgent matters.</li> <li>Strongly recommended to refrain from travelling by public or private means of urgent matters, or when carrying out activities or using services that are still available.</li> </ul>	transport, with the exception of work, study and health related reasons, any
Social/mass gatherings	• Gatherings of people in public places or places open to the public is forbidden.	
Business Activities	Retail  Shopping centres will be closed on weekends, public holidays, and pre-holidays, except for pharmacies, para-pharmacies, food shops, tobacconists, and newsagents inside shopping centres.  Food and beverage  Closed at 6pm.  Take-away allowed until 10pm. There are no restrictions for home delivery.	
Primary schools	<ul> <li>Pre-schools, primary schools, and middle schools open.</li> </ul>	
Secondary schools	<ul> <li>Online schooling for high schools, except for students with disabilities and in the case of the use of laboratories.</li> <li>From 7 Jan, face-to-face teaching activities must be guaranteed to 75% of the student population.</li> </ul>	
Higher and adult education	Universities closed, except for some activities for first year students and workshops.	
Domestic travel	• Up to 50% reduction in passenger numbers on public transport, except for school transport.	
(including transport)		
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Travelling rules vary, depending on the country of origin or destination and the reasons for travelling. Entry rules are available here.</li> <li>Travellers from some countries must:         <ul> <li>a) present a declaration to the effect that they have taken a molecular or antigenic swab test, with a negative result, within 72 hours before entering Italy alternatively</li> <li>b) undergo a molecular or antigenic swab test on arrival at the airport, port, or border location (where possible) or within 48 hours of entering Italy at the competent local health authority surgery.</li> <li>14 days quarantine is required when travelling from certain countries.</li> </ul> </li> <li>Mandatory Travel Documentation         <ul> <li>All persons travelling to Italy from any foreign location are required to provide a self-declaration to the carrier or, upon request, to law enforcement officers.</li> </ul> </li> </ul>	
Culture/leisure/ entertainment  Amateur sport and	Closed  Museums and exhibition halls.  Theatres and cinemas.  Amusement arcades, betting rooms and bingo facilities (also in bars and tobacces).  Swimming pools and gyms closed.	co shops).
-		
recreation	Sports centres open.  No information found	
Professional sport	No information found.	

		<u> </u>
Italy (Regions of Emilia Romagna, Friuli Venezia Giulia, Lazio, Liguria, Marche, Molise, Autonomous Province of Trento, Puglia, Sardinia, Sicily, Umbria, Veneto)(8)	Current Level: Yellow area	Effective from and to: 05/12/2020 - 20/12/2020
Facemasks	<ul> <li>Mandatory to carry a facemask with you at all times.</li> <li>These must be worn, not only in closed spaces accessible to the public, as in the also in all outdoor spaces.</li> <li>The use of a facemask is also strongly recommended in private homes, if there exceptions are made in cases where, due to the characteristics of the place or continuously guaranteed.</li> <li>Children under 6 years of age, people with pathologies or disabilities incompatitive excluded from the obligation to wear a facemask.</li> <li>Furthermore, the use of a facemask will not be mandatory during any sports access</li> </ul>	are non-residents visiting. the actual circumstances, the condition of isolation from non-residents is ble with the use of a facemask and those who interact with the latter, are
Christmas	Restriction of movement From 21 Dec to 6 Jan, all travel between different regions and to/from the auto second homes. On 25 and 26 Dec, and 1 Jan it is forbidden to move between municipalities the On 25 and 26 Dec and 1 Jan, it is forbidden to travel to any holiday/second home.  Retail From 4 Dec to 6 Jan, the shops can remain open until 9pm. On public holidays and the day before public holidays between 4 Dec and 15 Jatobacconists, newsstands and nurseries will be open in shopping centres and particular Travel Italians who travel abroad for tourism from 21 Dec to 6 Jan will have to undergo Foreign tourists arriving in Italy at the same time will also have to undergo qual Skiing Facilities for amateur skiers will be closed from 4 Dec to 6 Jan.	onomous provinces of Trento and Bolzano is prohibited, including to reach roughout Italy. The located in another municipality.  In, only groceries, pharmacies and para-pharmacies, health shops, reks.
Other	N/A	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Netherlands <sup>(13)</sup>	Current Level: Severe – partial lockdown	Effective from and to: 19/11/2020 – Uncertain but continues to apply during the festive season
Movement of people	<ul><li>Limit your travel movements.</li><li>Work from home, unless not possible.</li></ul>	
Social/mass gatherings	<ul> <li>Households</li> <li>Max 3 visitors a day in your home, excluding children under 13 years.</li> <li>Max group size outdoors and indoors (except in your home) is 4 people from different households. There is no max number of people for a household.</li> <li>Events</li> <li>Events are generally banned except for general markets (normal weekly markets), trade fairs and conferences, matches or competitions for elite athletes at training facilities, demonstrations, gatherings and meetings as referred to in the Public Assemblies Act.</li> <li>Max group size indoors is 30 and only if seated.</li> <li>Funerals</li> </ul>	
	<ul> <li>Max 30 people.</li> <li>Weddings</li> <li>Max 30 people.</li> </ul>	
Business Activities	Retail Retail stores must close no later than 8pm. No late-night shopping. Grocery stores may stay open after 8pm. Food and beverage All establishments that serve food and drinks, including bars, cafes and restaurants must remain closed. Exceptions are: hotels serving hotel guests, funeral locations, airports (after security). Take-away will still be possible. Locations with a combined function must close the section that serves food and drinks. No alcohol may be sold or delivered between 8pm and 7am. Between 8pm and 7am you may not drink alcohol or have it on your person in public spaces. Coffee shops (cannabis cafés) may only provide a takeaway service and must close by 8pm.	
Primary schools	• Open	
Secondary schools	• Open	
Higher and adult education	Onsite learning allowed if the basic rules can be fully complied with.	
Domestic travel (including transport)	<ul> <li>Travel as little as possible.</li> <li>If you go on holiday within the country, stay at your holiday address as much as possible.</li> <li>Limit the number of outings and avoid busy places.</li> </ul>	
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Travellers arriving in the Netherlands from certain countries and regions in EU 10 days, even if they do not have any symptoms or if they have tested negative</li> <li>Once in the Netherlands, you can self-quarantine at home or in temporary or h</li> </ul>	for COVID-19.

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Netherlands <sup>(13)</sup>	Current Level: Severe — partial lockdown	Effective from and to: 19/11/2020 — Uncertain but continues to apply during the festive season
	concerned.  Mandatory Travel Documentation  All passengers aged 13 years and above travelling to and from Dutch airports must fill in a Health Screening Form before starting their flight. Travellers reporting COVID-like symptoms will not be allowed to board the aircraft. Your Health Screening Form may be checked at the entrance of the airport and in the airport building itself, during check-in and boarding. At the destination airport, passengers will be randomly selected and asked to show their form. You will also need a completed Health Screening Form for the return journey. You are advised to take a blank form with you in case you are unable to download and print a form at your holiday address.	
	Other (for Dutch citizens)     Avoid travelling abroad and do not book trips abroad until mid-Jan, unless your     Holidays and family visits are non-assential travel.	journey is essential.
Culture/leisure/ entertainment	<ul> <li>Holidays and family visits are non-essential travel.</li> <li>Open</li> <li>Zoos, museums, theatres, swimming pools and amusement parks.</li> <li>At zoos, museums, libraries and other locations where there is a constant flow of people, visitors must reserve a time slot.</li> </ul>	
	Group singing  There is a ban on group singing, with the exception of: professional singers children < 13 years singing in the context of a religious or faith-based event	
Amateur sport and	- singing as part of a demonstration.  • Group sports lessons allowed.	
recreation	Sports canteens and clubhouses, showers and changing rooms remain closed.	
	Adults • People aged 18 and older may only take part in sports individually or in groups of 4. • Matches and competitions are not allowed.	
	Children  Children under 18 may take part in team sports.  Matches and competitions with teams within their own club allowed.	
Professional sport	• Elite athletes with a status at assigned locations (such as the National Sports Centre); footballers (including support staff in a 'bubble') in the Premier and First Divisions may take part in group sports.	
Facemasks	<ul> <li>Everyone aged 13 or over is advised to wear a non-medical facemask in indoor public spaces such as:</li> <li>shops, museums, town halls, stations, airports, covered car parks and petrol stations restaurants, bars, cafés, theatres and concert halls locations where contact-based professions are carried out (both customers and staff should wear a mask).</li> </ul>	
	Mandatory facemasks In some situations, facemasks are mandatory as follows:  • They must be worn in some designated areas at Amsterdam Schiphol Airport.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Netherlands <sup>(13)</sup>	Current Level: Severe — partial lockdown	Effective from and to: 19/11/2020 – Uncertain but continues to apply during the festive season
	<ul> <li>Facemasks are mandatory on public transport and private commercial transport, such as taxis or passenger vans.</li> <li>Facemasks are mandatory in all public and covered areas, in educational facilities and for contact professions.</li> <li>People travelling in a car or other private vehicle are advised to wear a non-medical facemask if there are 2 or more people in the vehicle who belong to different bourseholds. This does not apply to personal drivers.</li> </ul>	
Christmas		
Other	different households. This does not apply to personal drivers.  • The strictest lockdown so far will be in place over the holiday period.  Advised changes to Restrictions The Netherlands will enter the strictest lockdown so far from 15 Dec to at least 19 Jan 2021. Measures include:  • Restriction of movement and gatherings  • Stay at home as much as possible including during the Christmas holidays.  • Restrictive movement outside the home to household members or a group of max 2 people  • Max of 2 visitors over 13 years of age to your home.  • Work from home if possible.  • Business closures  • Shops (except for essentials such as food).  • Contact professions such as hairdressers, nail salons, etc.  • Restaurants and cafes  • Hotels are open, but restaurants and room service in a hotel are closed.  • Theatres, concert halls, cinemas and casinos.  • Animal parks and amusement parks.  • Indoor sports locations such as gyms, swimming pools, saunas, wellness, etc.  • Sports/recreation  • Adults should exercise alone or in pairs, and only outside.  • Children up to and including 17 years old are allowed to play sports in a team and can play matches among themselves, but also outside.  • Transport and travel	
	<ul> <li>In applied education, exams may be taken and practical training is portion.</li> <li>In all forms of education, an exception may be made for guiding vulner.</li> <li>Childcare and out-of-school care are closed during this period.</li> <li>Children of parents who have a crucial profession can go to primary seems.</li> <li>Exceptions</li> <li>On 24, 25 and 26 Dec you can have max 3 people to your home agest operators of (para) medical professions are allowed to continue work.</li> <li>Shops selling mainly foodstuffs, drugstores, pharmacies, opticians, he may set up a takeaway function.</li> <li>Service points for receiving and sending parcels may remain open.</li> </ul>	and taking school exams in the (pre) exam year can take place on location. ossible. Herable pupils and students.  School or to childcare and after-school care.  d 13 years or older.

Netherlands <sup>(13)</sup>	Current Level: Severe – partial lockdown	Effective from and to: 19/11/2020 – Uncertain but continues to apply during the festive season
	locations will also remain open.  - Collection of books from libraries remains possible.  - Community centres remain open to provide services to vulnerable people.  - Top athletes in top sports competitions are allowed to train and play matches.	
	<ul> <li>Looking ahead</li> <li>The government is looking at ways of opening up society a bit more in the new year.</li> <li>From the middle of Jan the government wants to carry out a number of controlled trials with spectators at sports matches, larger audiences in theatres, and more participants at business conferences. The goal is to find out how these events can be organised safely as soon as the situation allows.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Portugal(16) (nationwide and includes 73 municipalities at moderate risk)	Current Level: Severe — General State of Emergency	Effective from and to: 09/12/2020 - 23/12/2020
Movement of people	<ul> <li>Prohibition of inter-municipal circulation between 11pm on 4 Dec 2020 and 5an</li> <li>Suspension of teaching activities on 7 Dec.</li> <li>Teleworking is mandatory where feasible.</li> </ul>	n on 9 Dec 2020
Social/mass gatherings	Weddings and baptisms  Max 50 people.  Religious ceremonies  According to local Health Authority rules.  Other events and celebrations  Max 5 people unless from the same household.	
Business Activities	Retail  Max indicative capacity of 0.05 people per m².  Closing time between 8pm and 11pm by decision of the mayor with the assent of health authority and security forces.  Restaurants  Public access until midnight, closing time 1am.  Capacity limited to 50%.  Groups limited to 5 people unless they belong to the same household or 4 people in establishments within 300m of a school and in the food courts of shopping centres; mandatory advance booking.  Bars and Nightclubs  Remain closed and may operate only as cafes or pastries and are subject to the rules specified for these establishments.  Alcohol  Sale of alcoholic beverages is prohibited in services area and from 8pm in any store.  The consumption of alcoholic beverages on public roads is prohibited.	
Primary schools	• Open	
Secondary schools	• Open	
Higher and adult education	• Open	
Domestic travel (including transport)	• Private vehicles with capacity for more than 5 seats can only be driven with 2/3 of their occupation, unless all from the same household.	
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Travelling to Portugal from EU Member States + Schengen Associated countries and certain others is allowed without restrictions.</li> <li>Flights to Portugal from other destinations will only be permitted for essential travel. In this case, passengers must present a negative test to COVID-19 (RT-PCR), carried out within 72 hours before departure time. This test is not asked for those who are in transit and do not have to leave the airport facilities.</li> <li>Specific measures for Madeira archipelago:</li> <li>Passengers flying to the Madeira archipelago have to present a negative test to COVID-19 carried out within 72 hours prior to departure or they can perform it upon arrival.</li> <li>Specific information for Madeira islands:</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Portugal(16) (nationwide and includes 73 municipalities at moderate risk)	Current Level: Severe - General State of Emergency	Effective from and to: 09/12/2020 - 23/12/2020
	Passengers are required to complete an epidemiological survey, undergo thermal screening and submit proof of testing or undergo a test on arrival:  • Specific measures for Azores archipelago: Passengers flying to the Azores archipelago will be subject to one of the following options:  1. Submit proof of testing to COVID-19 up to 72 hours prior to flight departure;  2. Perform test on arrival and stay in preventive isolation until the result is obtained;  3. Return to the destination of origin or travel to any destination outside the Region, fulfilling, until the time of the flight, preventive isolation in a hotel indicated for this purpose. More information for Azores are available at DestinoSeguro.azores.gov.pt	
	Mandatory Travel Documentation  No additional documentation is required.	
Culture/leisure/ entertainment	No additional documentation is required.  • Museums, monuments and cultural spaces with specific circulation measures and social distance.  • Cinemas, theatres, auditoriums and showrooms must have marked seats, reduced capacity and must keep physical distance.  • Public attendance at sports events not allowed.	
Amateur sport and recreation	<ul> <li>Recreational practice allowed in closed and open spaces, provided minimum physical distance can be maintained.</li> <li>Training and competitions allowed in modalities classified as 'low risk'.</li> <li>Training and competitions allowed in other modalities classified as 'medium and high risk' as long as physical distancing is guaranteed.</li> </ul>	
Professional sport	• Training and competitions in all senior levels and for other levels that have inte	
Facemasks	<ul> <li>Facemask use is mandatory in closed public spaces, such as commercial establishments and public transport.</li> <li>Mandatory use of facemasks in the workplace.</li> </ul>	
Other	Movement for the Christmas period  Circulation between municipalities:  Allowed  Circulation on public roads:  Night-time from 23 to 24 Dec: allowed only for those who are travelling.  24 and 25 Dec: allowed until 2am the following day.  Dec 26: allowed until 11pm.  Opening hours  24 and 25 Dec: restaurant operation is allowed until 1am.  26 Dec: restaurant operation is allowed until 3.30 pm in municipalities with very high and extreme risk.  24 and 25 Dec: closing hours do not apply to cultural establishments.  Movement for the New Year period  Circulation between municipalities:  Prohibited between midnight on 31 Dec and 5am on 4 Jan.	
	<ul> <li>Circulation on public roads:</li> <li>31 Dec: allowed until 2am the following day.</li> <li>1 Jan: allowed until 11pm.</li> </ul> Opening hours <ul> <li>31 Dec: restaurant operation is allowed until 1am.</li> <li>1 Jan: restaurant operation is allowed until 3.30 pm in municipalities with very</li> </ul>	high and extreme risk.

Portugal(16) (nationwide and includes 73 municipalities at moderate risk)	Current Level: Severe — General State of Emergency	Effective from and to: 09/12/2020 - 23/12/2020
	<ul><li>Public parties are prohibited.</li><li>Gatherings on the public road with more than 6 people prohibited.</li></ul>	

Portugal - 97 municipalities at high risk <sup>(99)</sup> [All measures are as above for Portugal and the following]	Current Level: High Risk	Effective from and to: 09/12/2020 - 23/12/2020
Movement of people	Civic duty to stay at home.	
(e.g. stay at home	<ul> <li>Ban on traffic on public roads between 11pm and 5am on weekdays with except</li> </ul>	otions.
measures; curfews)	Mandatory teleworking where possible and if not, staggered start times are compulsory.	
Business Activities	Retail  Closing time midweek at 10pm except pharmacies, health clinics and medical offices, undertakers, take-away restaurants, services stations and car rental companies.  Restaurants Closing time midweek at 10.30pm.  Fairs and markets	
	• Forbidden, except if authorized by the Mayor and if the health and safety rules defined by the Health Authority are fully met.	
Culture/leisure/ entertainment	Cultural sites and facilities closed at 10.30pm.	•

Portugal - 78 municipalities at very high risk and 35 municipalities at extremely high risk <sup>(99)</sup> [All measures are as above for Portugal and the following]	Current Level: Very high risk and extremely high risk	Effective from and to: 09/12/2020 - 23/12/2020
Movement of people	Civic duty to stay at home.	
(e.g. stay at home	Ban on traffic on public roads between 11pm and 5am on weekdays with exception	
measures; curfews)	Ban on driving on public roads on Saturdays and Sundays between 1pm and 5a	
	• Prohibition of circulation on public roads on the holidays of 1 and 8 Dec 2020 between 1pm and 5pm.	
Business Activities	Mandatory teleworking where possible and if not, staggered start times are compulsory.  Page 11.  Page 12.  Pag	
Dusiness Activities	<ul> <li>Retail</li> <li>Closing time midweek at 10pm except pharmacies, health clinics and medical offices, undertakers, take-away restaurants, services stations and car rental companies.</li> <li>On 7 Dec, shops will close at 3pm.</li> <li>Closing time weekends at 1pm except pharmacies, health clinics and medical offices, undertakers, take-away restaurants, services stations and car rental companies.</li> </ul>	
	Restaurants  Closing time midweek at 10.30pm.  Closing time weekends at 1pm.  Fairs and markets	
	Forbidden, except if authorized by the Mayor and if the health and safety rules defined by the Health Authority are fully met.	
Culture/leisure/ entertainment	Cultural sites and facilities closed at 10.30pm.	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Spain <sup>(26)</sup>	Current Level: National State of Alarm	Effective from and to: 27/10/2020 – Uncertain
Movement of people	<ul> <li>Government has imposed a nationwide curfew between 11pm and 6am with a number of exceptions (for 2 weeks initially but still in force).</li> <li>Each regional government may modify the start from between 10pm and midnight and the end from between 5am and 7am.</li> <li>Each regional government may decide on limitations on the arrival to and departure from their regions, which may cover the whole or part of the region.</li> <li>Each regional government may limit gatherings in public or private spaces to a max of 6 people unless from the same household.</li> <li>Covers the whole country except the Canary Islands where the epidemiological situation is better.</li> </ul>	
Social/mass gatherings	<ul> <li>General gatherings</li> <li>Each regional government may limit gatherings in public or private spaces to a max of 6 people unless from the same household.</li> </ul>	
	Places of worship  • Max capacity - 1/3rd.	
	Funeral services  Wakes - max 15 people in outdoor spaces/10 in closed spaces, whether or not Entourage for the burial or cremation of the deceased person - max 15 people.	
	Establishments, commercial premises and services open to the public  • Max capacity - 50%.  • Closing time may not exceed 10pm.	
Business Activities	Hotels, Restaurants, Gaming and Betting establishments  • Max capacity 50% indoors and 60% outdoors.  • Consumption at bar not permitted.  • Tables or groups of tables must keep a distance of at least 1.5m with respect to the chairs assigned to the other tables or groups of tables.  • Max 6 people per table.  • New customers cannot be admitted after 10pm.  • Closing time may not exceed 11pm, with the exception of home delivery services.  Academies, driving schools and private non-regulated education and training centres	
	Max capacity 50%.	
Primary schools	No information found.	
Secondary schools	No information found.	
Higher and adult education	No information found.	
Domestic travel	Regions will also have the authority to restrict the entrance to and exit from the	eir territories unless this is for essential reasons such as going to work or to
(including transport)	get to the doctor.	a towiton, that is particularly hard hit by the virus
International travel	This would allow regions to close their borders should they have a neighbouring      Entry Postrictions	g territory that is particularly hard filt by the virus.
(inbound)	<ul> <li>Entry Restrictions</li> <li>Travelling from EU Member States + Schengen Associated countries is allowed without restrictions.</li> <li>All passengers arriving by air or sea transport must undergo a temperature check, which must be below 37.5 degrees Celsius. Cruising companies can take passengers temperature before arriving at a Spanish port.</li> <li>A negative PCR test or a transcription-mediated amplification (TMA) test performed no more than 72 hours before arrival (introduced on 10 Dec) will be required from all travellers coming from countries in high coronavirus risk zones.</li> <li>Children under the age of 6 will not be required to prove a negative result in order to enter Spain.</li> </ul>	

Spain <sup>(26)</sup>	Current Level: National State of Alarm	Effective from and to: 27/10/2020 – Uncertain	
		Canary Islands  The regional government of Spain's Canary Islands has passed a decree (with effect from 10 Dec) allowing tourists to enter the territory with a negative antigen coronavirus test, rather than a PCR/TMA test. The test must have a sensitivity of more than 80% and a specificity of more than 97%.	
	code which they must present upon arrival in Spain.  Tour operators, travel agencies and transport companies must inform tourists a	• All travellers must fill in a Public Health Form, or use the free app "Spain Travel Health" (SpTH). After completing the form, passengers will obtain a QR	
Culture/leisure/ entertainment		destination airport or port.  • Participation in groups of people for the development of any activity or event of a social nature, both on public roads and in public and private spaces, will be reduced to a max number of 6 people, unless from the same household.	
Amateur sport and recreation	Max 6 people for group sports.		
Professional sport	No information found.		
Facemasks	<ul> <li>People aged 6 years and older are required to wear masks in the following instances:         <ul> <li>on a public road or in an outdoor space where interpersonal distance is less than 1.5m</li> <li>in closed spaces where interpersonal distance is less than 1.5m</li> <li>always on public transport.</li> </ul> </li> <li>Exceptions include:         <ul> <li>people with respiratory illness of difficulty</li> <li>people with disabilities or dependency who do not have the autonomy to remove the mask or who have behavioural disorders that make it unfeasible</li> <li>cause of force majeure or situation of need</li> <li>activities with which it is incompatible.</li> </ul> </li> </ul>		
Christmas	<ul> <li>Movement between regions permitted between 23 Dec and 6 Jan, provided these trips are made to visit relatives or close friends.</li> <li>Max 10 people at social gatherings on key dates (24, 25 and 31 Dec and 1 Jan) up from current limit of 6.</li> <li>A 1.30am curfew for the nights of Christmas Eve and New Year's Eve, rather than the earlier times currently in place and which vary across the regions.</li> </ul>		
Other	Measures vary between regions.		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Sweden <sup>(17)</sup>	Current Level: Unreported	Effective from and to: Various - Various
Movement of people	Only gather with those you live with.	
	If you live alone, choose no more than one or two friends to social	ise with.
Social/mass gatherings	Public gatherings  • Max 8 people at public gatherings and events until 22 Dec. Note: This does not include schools, public transport, private events and visits to shops.  Public qatherings:  - gatherings that constitute demonstrations or which are otherwise held for discussion, expression of opinion or providing information on public or private matters;  - lectures and speeches held for the purposes of teaching or for public or civic education;  - gatherings for religious practice;  - theatrical and cinema performances, concerts and other gatherings for the performance of artistic work, and  - other gatherings at which freedom of assembly is exercised.  Public events:  - competitions and exhibitions in sports and aviation;  - dance performances;  - fairground amusements and parades;  - markets and fairs, and  - other events not regarded as public gatherings or circus performances.  Note: This proposal does not include schools, public transport, private events and visits to shops are excluded.	
	Funeral services - Max 20 people permitted.	
<b>Business Activities</b>	Food and beverage  Max 8 people in a dining party.  Alcohol sales in bars, restaurants and elsewhere banned between 10pm and 11am. Exceptions will be made for serving in special accommodation and room service in hotels or minibars in hotel rooms. The regulation applies until the end of Feb 2021.	
Primary schools	• Open	
Secondary schools	<ul> <li>Open</li> <li>The Swedish Public Health Agency now recommends that the country's upper secondary schools partially close and switch to distance learning.</li> <li>The recommendation on distance education applies from 7 Dec to 6 Jan 2021. The aim is to further reduce congestion in society and in public transport.</li> </ul>	
Higher and adult education	Open     Measures adopted vary between individual universities.	
Domestic travel	No information found.	
(including transport)		
International travel (inbound)	<ul> <li>Entry Restrictions</li> <li>Citizens from EU Member States + Schengen Associated countries, and their family members, as well as people with Swedish residence permits, are allowed to enter Sweden without restrictions.</li> <li>Temporary entry ban on citizens from all other states until 22 Dec 2020.</li> <li>Mandatory Travel Documentation</li> <li>Airline operators may require passengers to show a health statement but this is not a general requirement for entering Sweden.</li> <li>Travel Advisory</li> </ul>	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Sweden <sup>(17)</sup>	Current Level: Unreported	Effective from and to: Various - Various
	The MFA advises against non-essential travel to countries Jan 2021.	outside the EU/EEA/Schengen area as well as the United Kingdom. The advice applies until 31
Culture/leisure/ entertainment	Audience at concerts and performances must be seated.	
Amateur sport and recreation	Sports are permitted.	
Professional sport	Sports are permitted.	
Facemasks	<ul> <li>We do not currently recommend facemasks in public settings since the scientific evidence around the effectiveness of facemasks in combatting the spread of infection is unclear. However, there may be situations where facemasks can be useful despite the uncertain state of knowledge about the effects.</li> <li>We will therefore, in dialogue with the County Medical Offices, decide on situations where recommendations to wear a facemask could be valuable at national or regional level. Examples of such situations could be a visit to the optician or when you cannot avoid using public transport even though it is crowded.</li> <li>Facemasks must always be seen as complementary to other recommendations: stay at home when you have symptoms, wash your hands regularly and</li> </ul>	
Other	<ul> <li>Facemasks must always be seen as complementary to other recommendations: stay at home when you have symptoms, wash your hands regularly and keep at a distance from others.</li> <li>Regional Restrictions</li> <li>The Public Health agency of Sweden may introduce stricter guidelines in the individual 18 regions.</li> <li>Advised changes to Restrictions</li> <li>From 14 Dec (to include the Christmas period), stricter national regulations and general guidelines will apply to everyone. All local general council regulations will expire on the same date.</li> <li>These regulations will apply until 30 Jun 2021 and include: <ul> <li>limit new close contacts</li> <li>socialise in a small circle</li> <li>keep your distance from others and avoid crowded environments</li> <li>travel in a way that minimises risk of infection</li> <li>avoid congested shopping times</li> <li>work from home as much as possible</li> <li>conduct sports and leisure activities in a way that minimizes the risk of infection</li> <li>adult education should be conducted online if possible</li> <li>public transport capacity reduced to limit the spread of infection</li> <li>all businesses, trade services and associations should take steps to limit the spread of infection.</li> </ul> </li> <li>Other Proposals <ul> <li>On the 9 Dec, the Swedish government proposed that a temporary pandemic law for Covid-19 shall apply from 15 Mar 2021 up to and including Mar 2022.</li> <li>The purpose of the law is that more activities should be covered by infection control rules and the proposal has been sent out for consultation to relevant parties.</li> <li>Activities that are proposed to be covered are: <ul> <li>public gatherings and public events</li> <li>public gatherings and public events</li> <li>publice or cultural activities</li> </ul> </li> </ul></li></ul>	
	<ul><li>trading places</li><li>public transport</li><li>use or provision of places for private gatherings.</li></ul>	

Sweden <sup>(17)</sup>	Current Level: Unreported	Effective from and to: Various - Various
	<ul> <li>It is also proposed to limit people's right to stay in a public place and how large a party may be.</li> <li>For very serious situations, the possibility of deciding on more far-reaching measures to prevent congestion is proposed. This could involve closing down, for example, shops, public transport or shopping centres.</li> </ul>	

Sweden — various counties <sup>(100)</sup> [All measures are as above for Sweden and combinations of the following]	Current Level: Unreported	Effective from and to: Various – 13/12/2020
Movement of people	Refrain from making unnecessary trips.     Work from home in so far as possible.	
Social/mass gatherings	<ul> <li>Public gatherings and events</li> <li>Max 8 people.</li> <li>Socialise only with the people you meet daily, your own family or people you live with. Arranging or attending parties and such like is not allowed.</li> <li>Refrain from staying in indoor environments such as shops, malls, museums, libraries, bathhouses and gyms. Necessary visits to, for example, grocery stores and pharmacies can be made.</li> </ul>	
<b>Business Activities</b>	Personal Services  Avoid having healthcare and beauty treatments that are not for medical reasons.	
Domestic travel (including transport)	Do not travel on public transport at times when it can be crowded.	
Culture/leisure/ entertainment	<ul> <li>Avoid visiting indoor environments such as shops, shopping centres, museums, libraries, swimming pools and gyms.</li> <li>Refrain from participating in gatherings such as meetings, concerts and performances.</li> </ul>	
Amateur sport and recreation	<ul> <li>Everybody over 15 years is advised to avoid sports activities. Exceptions are made for professional athletes and students at sports colleges.</li> <li>Everybody (all ages) is advised against arranging or taking part in sports competitions or cups where a lot of people are meeting and which involve travel.</li> <li>Refrain from participating in gatherings such as sports training, matches and competitions. However, this does not apply to sports training for children and young people born in 2005 or later.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 1: Medium Alert	Effective from and to: 02/12/2020 - 16/12/2020
Movement of people	<ul> <li>If you live in a tier 1 area and travel to an area in a higher tier you should follow the rules for that area while you are there.</li> <li>Avoid travel to or overnight stays in tier 3 areas other than where necessary.</li> <li>You can travel through a tier 3 area as part of a longer journey.</li> </ul>	
Social/mass gatherings	Socialising  Max 6 people for indoor or outdoor socialising.  Events - performances and shows	
	<ul> <li>Public attendance at outdoor and indoor events (performances and shows) is permitted, limited to whichever is lower: 50% capacity, or either 4,000 people outdoors or 1,000 people indoors.</li> </ul>	
	Events - spectator sports and business events - Public attendance at spectator sport and business events can resume inside and outside, subject to social contact rules and limited to whichever is lower: 50% capacity, or either 4,000 people outdoors or 1,000 people indoors.	
	Places of worship Remain open, but no attendance or socialising in groups of more than 6 people while there.	
	Weddings and funerals Permitted with restrictions on number of attendees: max 15 people can attend wedding ceremonies and receptions max 30 people can attend funeral ceremonies max 15 people can attend funeral ceremonies max 15 people can attend linked commemorative events.	
Business Activities	Retail Open.	
	Food and beverage  Hospitality businesses selling food or drink for consumption on their premises are required to: provide table service only close between 11pm and 5am (hospitality venues in airports, ports, on transport services and in motorway service areas are exempt) stop taking orders after 10pm. Hospitality businesses and venues selling food and drink for consumption off the premises can continue to do so after 10pm but must be through a delivery service, click-and-collect or drive-through.	
	Accommodation Open.	
	Personal care services Open.	
Primary schools	• Open	
Secondary schools	• Open	
Higher and adult education	• Open	
migner and addit education	• Open	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 1: Medium Alert	Effective from and to: 02/12/2020 - 16/12/2020
Domestic travel (including transport)	• If you need to travel we encourage you to walk or cycle where possible, and to plan ahead and avoid busy times and routes on public transport.	
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Those intending to travel to England should check the current travel corridor list to see whether you need to isolate for 14 days.</li> </ul>	
	Mandatory Travel Documentation  • Passenger locator form.	
Culture/leisure/ entertainment	Open  Casinos, cinemas, theatres, concert halls, museums, bowling alleys, amusement arcades, funfairs, theme parks, adventure parks and activities and bingo halls but early closure applies (11pm).  Cinemas, theatres and concert halls can stay open beyond 11pm in order to conclude performances that start before 10pm.	
	Closed - Nightclubs.	
Amateur sport and recreation	<ul> <li>Organised outdoor sport, physical activity and exercise classes can continue.</li> <li>Organised indoor sport, physical activity and exercise classes can continue to take place with a max of 6 people.</li> <li>Indoor disability sport, sport for educational purposes, and supervised sport and physical activity for under-18s, can take place with larger groups mixing.</li> </ul>	
Professional sport	Businesses will be permitted to be open for elite sports persons to train and compete (in indoor and outdoor sports facilities).	
Facemasks	You must wear a face covering in the following indoor settings (from 5 November, see the guidance on national restrictions to find out which of these settings remain open to the public):     public transport (airplanes, trains, trams and buses)     taxis and private hire vehicles     transport hubs (airports, rail and tram stations and terminals, maritime ports and terminals, bus and coach stations and terminals)     shops and supermarkets (places which offer goods or services for retail sale or hire)     shopping centres (malls and indoor markets)     auction houses     premises providing hospitality (bars, pubs, restaurants, cafes), except when seated at a table to eat or drink (see exemptions)     post offices, banks, building societies, high-street solicitors and accountants, credit unions, short-term loan providers, savings clubs and money service businesses     estate and lettings agents     theatres     premises providing personal care and beauty treatments (hair salons, barbers, nail salons, massage centres, tattoo and piercing parlours)	
<ul> <li>premises providing veterinary services</li> <li>visitor attractions and entertainment venues (museums, galleries, cinemas, theatres, concert halls, cultural and heritage sites, aquari visitor farms, bingo halls, amusement arcades, adventure activity centres, indoor sports stadiums, funfairs, theme parks, casinos, skatir alleys, indoor play areas including soft-play areas)</li> <li>libraries and public reading rooms</li> <li>places of worship</li> <li>funeral service providers (funeral homes, crematoria and burial ground chapels)</li> <li>community centres, youth centres and social clubs</li> <li>exhibition halls and conference centres</li> </ul>		eatres, concert halls, cultural and heritage sites, aquariums, indoor zoos and sports stadiums, funfairs, theme parks, casinos, skating rinks, bowling

England <sup>(7)</sup> – Area level risk	Current Level: Tier 1: Medium Alert	Effective from and to: 02/12/2020 - 16/12/2020
	<ul> <li>public areas in hotels and hostels</li> <li>storage and distribution facilities</li> <li>You should also wear a face covering in indoor places not listed here where social distancing may be difficult and where you will come into contact with people you do not normally meet.</li> </ul>	
Christmas	Between 23 and 27 December:  you can form an exclusive 'Christmas bubble' composed of people from no more than three households  you can only be in one Christmas bubble  you cannot change your Christmas bubble  you can travel between tiers and UK nations for the purposes of meeting your Christmas bubble  you can only meet your Christmas bubble in private homes or in your garden, places of worship, or public outdoor spaces  you can continue to meet people who are not in your Christmas bubble outside your home according to the rules in the tier where you are staying  you cannot meet someone in a private dwelling who is not part of your household or Christmas bubble  you should travel to meet those in your Christmas bubble and return home between the 23 and 27 December.  Anyone travelling to or from Northern Ireland may travel on the 22 and 28 December.	
Other	Advised changes to Restrictions	
	• From 14 Dec, the period of self-isolation for people who return from countries which are not on the travel corridor list is reduced from 14 days to 10 days.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 2: High Alert	Effective from and to: 02/12/2020 - 16/12/2020
Movement of people	<ul> <li>You can continue to travel to venues or amenities which are open, but should aim to reduce the number of journeys you make where possible.</li> <li>If you live in a tier 2 area, you must continue to follow tier 2 rules when you travel to a tier 1 area.</li> <li>Avoid travel to or overnight stays in tier 3 areas other than where necessary.</li> <li>You can travel through a tier 3 area as a part of a longer journey.</li> </ul>	
Social/mass gatherings	Socialising  No socialising with anyone you do not live with or who is not in your support bubble in any indoor setting, whether at home or in a public place.  Max 6 people for outdoor socialising.	
	Events - performances and shows - Public attendance at outdoor and indoor events (performances and shows) is permitted, limited to whichever is lower: 50% capacity, or either 2,000 people outdoors or 1,000 people indoors.	
	Events - spectator sports and business events - Public attendance at spectator sport and business events can resume inside and outside, subject to social contact rules and limited to whichever is lower: 50% capacity, or either 2,000 people outdoors or 1,000 people indoors.	
	Places of worship  Remain open, but no attendance or socialising with people from outside of your household or support bubble while there.	
	Weddings and funerals  • Permitted with restrictions on numbers of attendees:  - max 15 people can attend wedding ceremonies and receptions.  - max 30 people can attend funeral ceremonies.  - max 15 people can attend linked commemorative events.	
Business Activities	Retail Open.	
	<ul> <li>Food and beverage</li> <li>Pubs and bars must close, unless operating as restaurants.</li> <li>Hospitality venues can only serve alcohol with substantial meals.</li> <li>Hospitality businesses selling food or drink for consumption on their premises are required to: <ul> <li>provide table service only, for premises that serve alcohol.</li> <li>close between 11pm and 5am (hospitality venues in airports, ports, on transport services and in motorway service areas are exempt).</li> <li>stop taking orders after 10pm.</li> <li>Hospitality businesses and venues selling food and drink for consumption off the premises can continue to do so after 10pm but must be through a deliver service, click-and-collect or drive-through.</li> </ul> </li> </ul>	
	Accommodation  Open.  Personal care services Open.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 2: High Alert	Effective from and to: 02/12/2020 - 16/12/2020
Primary schools	• Open	
Secondary schools	• Open	
Higher and adult education	• Open	
Domestic travel (including transport)	<ul> <li>You can continue to travel to venues or amenities which are open, but should aim to reduce the number of journeys you make where possible</li> <li>If you need to travel we encourage you to walk or cycle where possible, and to plan ahead and avoid busy times and routes on public transport.</li> </ul>	
International travel (inbound)	Entry restrictions  Those intending to travel to England should check the current travel corridor list to see whether you need to isolate for 14 days.  Mandatory Travel Documentation	
Culture/leisure/ entertainment	Passenger locator form.  Open     Casinos, cinemas, theatres, concert halls, museums, bowling alleys, amusement arcades, funfairs, theme parks, adventure parks and activities and bingo	
	halls but early closure applies (11pm).  • Cinemas, theatres and concert halls can stay open beyond 11pm in order to conclude performances that start before 10pm.  Closed  • Nightclubs.	
Amateur sport and recreation	<ul> <li>Organised outdoor sport, physical activity and exercise classes can continue.</li> <li>Organised indoor sport, physical activity and exercise classes will only be permitted if it is possible for people to avoid mixing with people they do not live with (or share a support bubble with).</li> <li>Indoor disability sport, sport for educational purposes, and supervised sport and physical activity for under-18s, can take place with larger groups mixing.</li> </ul>	
Professional sport	Businesses will be permitted to be open for elite sports persons to train and compete (in indoor and outdoor sports facilities).	
Facemasks	You must wear a face covering in the following indoor settings (from 5 November settings remain open to the public):     public transport (airplanes, trains, trams and buses)     taxis and private hire vehicles     transport hubs (airports, rail and tram stations and terminals, maritime ports a shops and supermarkets (places which offer goods or services for retail sale or shopping centres (malls and indoor markets)	and terminals, bus and coach stations and terminals)
	<ul> <li>auction houses</li> <li>premises providing hospitality (bars, pubs, restaurants, cafes), except when see</li> <li>post offices, banks, building societies, high-street solicitors and accountants, obusinesses</li> <li>estate and lettings agents</li> <li>theatres</li> <li>premises providing personal care and beauty treatments (hair salons, barbers, premises providing veterinary services</li> </ul>	redit unions, short-term loan providers, savings clubs and money service, nail salons, massage centres, tattoo and piercing parlours)
	<ul> <li>visitor attractions and entertainment venues (museums, galleries, cinemas, the visitor farms, bingo halls, amusement arcades, adventure activity centres, indoor</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 2: High Alert	Effective from and to: 02/12/2020 - 16/12/2020
	alleys, indoor play areas including soft-play areas) - libraries and public reading rooms - places of worship - funeral service providers (funeral homes, crematoria and burial ground chapels) - community centres, youth centres and social clubs - exhibition halls and conference centres - public areas in hotels and hostels - storage and distribution facilities	
	• You should also wear a face covering in indoor places not listed here where social distancing may be difficult and where you will come into contact with people you do not normally meet.	
Christmas	Between 23 and 27 December:  • you can form an exclusive 'Christmas bubble' composed of people from no more than three households.  • you can only be in one Christmas bubble.  • you cannot change your Christmas bubble.  • you can travel between tiers and UK nations for the purposes of meeting your Christmas bubble.  • you can only meet your Christmas bubble in private homes or in your garden, places of worship, or public outdoor spaces.  • you can continue to meet people who are not in your Christmas bubble outside your home according to the rules in the tier where you are staying.  • you cannot meet someone in a private dwelling who is not part of your household or Christmas bubble.	
Other	<ul> <li>you should travel to meet those in your Christmas bubble and return home between the 23 and 27 December.</li> <li>Anyone travelling to or from Northern Ireland may travel on the 22 and 28 December.</li> <li>Advised changes to Restrictions</li> <li>From 14 Dec, the period of self-isolation for people who return from countries which are not on the travel corridor list is reduced from 14 days to 10 days.</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Avoid travelling outside of your area, inexpose You can travel through other areas as particles.      Social/mass gatherings      Socialising     Not permitted to meet socially indoors of any private garden or at most outdoor very Max 6 people permitted to socialise in sample grounds of a heritage site or castle, or a maximum service.      Events - performances and shows	amenities which are open, but should cluding for overnight stays other than vart of a longer journey or in most outdoor places with anybody nues.	you do not live with, or who is not in your support bubble. This includes in
Avoid travelling outside of your area, inexpose You can travel through other areas as particles.      Social/mass gatherings      Socialising     Not permitted to meet socially indoors of any private garden or at most outdoor very Max 6 people permitted to socialise in sample grounds of a heritage site or castle, or a max of the performances and shows  Events - performances and shows	cluding for overnight stays other than vart of a longer journey or in most outdoor places with anybody nues. ome other outdoor public spaces, inclu	you do not live with, or who is not in your support bubble. This includes in
Not permitted to meet socially indoors of any private garden or at most outdoor ve Max 6 people permitted to socialise in signounds of a heritage site or castle, or a  Events - performances and shows	nues. ome other outdoor public spaces, inclu	
Large outdoor events (performances an	<ul> <li>Not permitted to meet socially indoors or in most outdoor places with anybody you do not live with, or who is not in your support bubble. This includes in any private garden or at most outdoor venues.</li> <li>Max 6 people permitted to socialise in some other outdoor public spaces, including parks, beaches, countryside accessible to the public, a public garden, grounds of a heritage site or castle, or a sports facility.</li> </ul>	
<ul> <li>No public attendance at spectator sport</li> </ul>	Events - spectator sports and business events  No public attendance at spectator sport or indoor performances and large business events should not be taking place.  Elite sport events may continue to take place without spectators.	
Places of worship Remain open, but you must not attend	Places of worship Remain open, but you must not attend or socialise with people from outside of your household or support bubble while there.  Weddings and funerals Permitted with restrictions on numbers of attendees: max 15 people can attend wedding ceremonies and receptions. max 30 people can attend funeral ceremonies. max 15 people can attend linked commemorative events.	
Permitted with restrictions on numbers     max 15 people can attend wedding cer     max 30 people can attend funeral cere		
Business Activities Retail Open.	Retail	
Food and beverage  Hospitality settings, such as bars (including shisha venues), pubs, cafes and restaurants click-and-collect, drive-through or delivery services.		staurants are closed – they are permitted to continue sales by takeaway,
	Accommodation  • Accommodation such as hotels, B&Bs, campsites, and guest houses must close. Exemptions for those who use these venues as their main residence, those requiring the venues where it is reasonably necessary for work or education and training.	
Personal care services • Open.		
Primary schools - Open		
Secondary schools • Open		
Higher and adult education • Open		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 3: Very High Alert	Effective from and to: 02/12/2020 – 16/12/2020
Domestic travel (including transport)	<ul> <li>You can continue to travel to venues or amenities which are open, but should aim to reduce the number of journeys you make where possible</li> <li>If you need to travel we encourage you to walk or cycle where possible, and to plan ahead and avoid busy times and routes on public transport.</li> </ul>	
International travel (inbound)	Entry restrictions     Those intending to travel to England should check the current travel corridor list to see whether you need to isolate for 14 days.	
	Mandatory Travel Documentation	
Culture/leisure/ entertainment	Passenger locator form.  Indoor entertainment and tourist venues must close. This includes:  Indoor play centres and areas, including trampolining parks and soft play  Casinos  bingo halls  bowling alleys  skating rinks  amusement arcades and adult gaming centres  laser quests and escape rooms  cinemas, theatres and concert halls  nightclubs.  Indoor attractions at mostly outdoor entertainment venues must also close (indoor shops, through-ways and public toilets at such attractions can remain open). This includes indoor attractions within:  zoos, safari parks, and wildlife reserves  aquariums, visitor attractions at farms, and other animal attractions  model villages  museums, galleries and sculpture parks  botanical gardens, biomes or greenhouses  theme parks, circuses, fairgrounds and funfairs  visitor attractions at film studios, heritage sites such as castles and stately homes  landmarks including observation decks and viewing platforms.	
Amateur sport and recreation	<ul> <li>Organised outdoor sport, and physical activity and exercise classes can continue, however higher-risk contact activity should not take place.</li> <li>Leisure and sports facilities may continue to stay open, but organised indoor sport, physical activity and exercise classes cannot take place. There are exceptions for indoor disability sport, sport for educational purposes and supervised sport and physical activity for under-18s.</li> </ul>	
Professional sport	Businesses will be permitted to be open for elite sports persons to train and compete (in indoor and outdoor sports facilities).	
Facemasks	You must wear a face covering in the following indoor settings (from 5 November settings remain open to the public):     public transport (airplanes, trains, trams and buses)     taxis and private hire vehicles     transport hubs (airports, rail and tram stations and terminals, maritime ports a shops and supermarkets (places which offer goods or services for retail sale of shopping centres (malls and indoor markets)     auction houses     premises providing hospitality (bars, pubs, restaurants, cafes), except when see	and terminals, bus and coach stations and terminals) r hire)

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

England <sup>(7)</sup> – Area level risk	Current Level: Tier 3: Very High Alert	Effective from and to: 02/12/2020 - 16/12/2020
	<ul> <li>post offices, banks, building societies, high-street solicitors and accountants, obusinesses</li> <li>estate and lettings agents</li> <li>theatres</li> <li>premises providing personal care and beauty treatments (hair salons, barbers, premises providing veterinary services</li> <li>visitor attractions and entertainment venues (museums, galleries, cinemas, the visitor farms, bingo halls, amusement arcades, adventure activity centres, indoor alleys, indoor play areas including soft-play areas)</li> <li>libraries and public reading rooms</li> <li>places of worship</li> <li>funeral service providers (funeral homes, crematoria and burial ground chapel community centres, youth centres and social clubs</li> <li>exhibition halls and conference centres</li> <li>public areas in hotels and hostels</li> <li>storage and distribution facilities</li> <li>You should also wear a face covering in indoor places not listed here where so people you do not normally meet.</li> </ul>	nail salons, massage centres, tattoo and piercing parlours) eatres, concert halls, cultural and heritage sites, aquariums, indoor zoos and resports stadiums, funfairs, theme parks, casinos, skating rinks, bowling
Christmas	Between 23 and 27 December:  • you can form an exclusive 'Christmas bubble' composed of people from no more than three households.  • you can only be in one Christmas bubble.  • you cannot change your Christmas bubble.  • you can travel between tiers and UK nations for the purposes of meeting your Christmas bubble.  • you can only meet your Christmas bubble in private homes or in your garden, places of worship, or public outdoor spaces.  • you can continue to meet people who are not in your Christmas bubble outside your home according to the rules in the tier where you are staying.  • you cannot meet someone in a private dwelling who is not part of your household or Christmas bubble.  • you should travel to meet those in your Christmas bubble and return home between the 23 and 27 December.  Anyone travelling to or from Northern Ireland may travel on the 22 and 28 December.	
Other	Advised changes to Restrictions • From 14 Dec, the period of self-isolation for people who return from countries	which are not on the travel corridor list is reduced from 14 days to 10 days.

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Northern Ireland <sup>(23)</sup>	Current Level: End of 2 week circuit breaker	Effective from and to: 11/12/2020 – Under review
Movement of people	Work from home unless unable to do so.	
Social/mass gatherings	Household gatherings  No indoor mixing of households in private dwellings.  Max 6 people to gather in a private garden from no more than 2 households.  No overnight stays in a private home unless in a household bubble.  Household Bubbles  Max 10 people from 2 households.	
	Outdoor gatherings  • Max 15 people ordinarily.  • Max 500 if an organised event with a risk assessment.	
	Indoor gatherings • Max 15 people can meet indoors, except in someone's home, or in a static caravan or self-catering holiday home.	
	Places of worship  Open in line with guidance.	
	<ul> <li>Funerals</li> <li>Can take place in line with guidance.</li> <li>Numbers determined by size of venue.</li> <li>Funerals and associated gatherings can take place in a private dwelling with</li> </ul>	max 10 people from 4 households.
	<ul> <li>Weddings and civil partnerships</li> <li>Can take place in line with guidance.</li> <li>Numbers determined by size of venue.</li> <li>Where one partner is terminally ill, can take place in a private dwelling with</li> </ul>	may 10 people attending, not counting children aged 12 and under
<b>Business Activities</b>	Retail Open in line with guidance.	max 10 people attending, not counting children aged 12 and under.
	Personal services - Close contact services open by appointment only.	
	Food and beverage  • Hospitality sector open.  • Licensed premises that are permitted to open must close by 11pm.  • Food and drink must not be sold, supplied, purchased or obtained after 10.3  • Max 6 people from no more than two households can be seated at a table. (  • Wet pubs remain closed.  • Licensed premises that do not serve main meals, can only remain open to see	Children aged 12 and under will not be counted in the total.

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Northern Ireland <sup>(23)</sup>	Current Level: End of 2 week circuit breaker	Effective from and to: 11/12/2020 – Under review	
	Accommodation - Hotels, guesthouses and B&Bs open.		
	After 10.30pm, alcoholic drinks can be taken by residents to their room, and re	esidents can use a mini-bar, but alcohol cannot be delivered by room service.	
Primary schools	• Open		
Secondary schools	Open		
Higher and adult education	<ul> <li>Universities and Further Education to provide learning at distance except where</li> </ul>	e it is essential to provide it face-to-face.	
Domestic travel (including transport)	No unnecessary travel.		
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Those intending to travel to Northern Ireland should check the current travel corridor list to see whether you need to isolate for 14 days.</li> <li>The regulations mean that you must self-isolate for 14 days if you return to Northern Ireland from a country outside the Common Travel Area (CTA) unless you are travelling from, or transiting through, a low to medium risk country that is exempt.</li> </ul>		
	Mandatory Travel Documentation  - UK passenger locator form (PLF).		
Culture/leisure/ entertainment	<ul> <li>Open</li> <li>Indoor and outdoor museums, galleries, visitor and other cultural attractions, subject to risk-assessments.</li> <li>Theatres and concert halls are permitted for rehearsals or a live recording without an audience.</li> <li>Libraries.</li> <li>Public parks and outdoor play areas.</li> <li>Community halls.</li> </ul>		
Amateur sport and recreation	Gyms, swimming and diving pools open for:  individual training  training with a personal trainer/ coach  classes of up to 15 that do not cause an individual to get out of breath.  Outdoor exercise is permitted in groups of up to a max of 15.  Max 500 spectators at sport events (risk assessed).		
Professional sport	Elite sport permitted.     Max 500 spectators at sport events (risk assessed).		
Facemasks	Face coverings are required in certain indoor settings including shops, shopping centres, public, private and school transport services, taxis, airplanes, public transport stations and airports, banks and some government offices.		
Christmas	Max 3 households can form an exclusive bubble between 23 and 27 Dec.		
Other	Advised changes to Restrictions - From 14 Dec, the period of self-isolation for people who return from countries with the countries of the cou	which are not on the travel corridor list is reduced from 14 days to 10 days.	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Scotland – 7/32 local authority areas <sup>(19)</sup>	Current Level: Level 1	Effective from and to: 11/12/2020 - Subject to regular review
Movement of people	<ul> <li>Minimise unnecessary journeys between areas in different levels.</li> <li>If you live in a Level 0, 1, or 2 area in Scotland, or are considering travel to Scotland from anywhere else, you should:</li> <li>Minimise unnecessary journeys between areas in different levels and avoid any unnecessary travel to places in Level 3 or Level 4 areas.</li> </ul>	
Social/mass gatherings	<ul> <li>Indoors</li> <li>With the exception of the islands, you should not meet anyone who is not in your household indoors in your home or in their home</li> <li>Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).</li> <li>Small seated indoor events are permitted with restricted numbers.</li> </ul>	
	<ul> <li>Outdoors</li> <li>• Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).</li> <li>• Young people aged between 12 and 17 years can meet in groups of up to 6 and are not subject to the 2 household limit.</li> <li>• Outdoor seated and open space events are permitted with restricted numbers.</li> </ul>	
	Places of worship  • Max 50 people indoors provided space to maintain 2m distancing.  • Max 200 people outdoors.	
	Funerals and weddings  • Max 20 people (including the couple, the witnesses and guests) for wedding ceremonies, civil partnership registrations and funerals in a place of we registration office or hospitality venue.  • Receptions and wakes can also take place with a max 20 people.	
Business Activities	<ul> <li>Retail</li> <li>All retailers can open.</li> <li>A number of close contact retail services can open, including: hairdressing and barbers, beauty and nail services (including make-up), hair removal, tattoo, piercing and body modification, fashion design, dress-fitting and tailoring, indoor portrait photography, massage therapies, complementary and alternative medicine services requiring physical contact or close physical proximity between persons, but not osteopathy and chiropractic services, spa and wellness services, other services or procedures which require physical contact or close physical proximity between a provider and a customer and are not ancillary to medical, health, or social care services</li> </ul>	
Food and beverage  Restaurants, cafes, pubs and bars can open indoors and outdoors for the consumption of food and alcoholic drinks in line with Table service is mandatory.  Last entry is 9.30pm and all venues must be closed and all customers off the premises by 10.30pm.  Max number of people you can meet indoors and outdoors in a restaurant, café, pub or bar is 6 which can be from up to 2 sept under the age of 12 from these households do not count towards the total number of people meeting.)  From 19 Nov 2020 this will increase to a max of 8 people from up to 3 households.  Takeaways can still operate as normal, provided food and drink is sold for consumption off the premises.		premises by 10.30pm. fé, pub or bar is 6 which can be from up to 2 separate households. (Children ber of people meeting.) holds.
	<ul> <li>Holiday accommodation</li> <li>All holiday accommodation (Hotels, B&amp;Bs, self-catering, caravan and camping sites) can stay open, in line with sector guidance for tourism and ho</li> <li>At present you must only stay with your household (or extended household) in self-catering accommodation as it is considered a private dwelling.</li> <li>Hotels and other accommodation providers can serve food to guests staying in their premises. Room service, including alcohol, is allowed as norm</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Scotland – 7/32 local authority areas <sup>(19)</sup>	Current Level: Level 1	Effective from and to: 11/12/2020 – Subject to regular review	
	Driving schools		
	Driving lessons permitted.		
	Film and TV production		
	Can continue to take place.		
Primary schools	• Open		
Secondary schools	• Open		
Higher and adult education	Colleges and universities can operate using a mix of face-to-face and distance I	earning.	
Domestic travel	Minimise unnecessary journeys between areas in different levels.		
(including transport)	If you live in a Level 0, 1, or 2 area in Scotland, or are considering travel to Scotland, or are considered to Scotland, or ar		
International travel	Entry restrictions	y unnecessary traver to places in Lever 3 or Lever 4 areas.	
(inbound)	<ul> <li>Travellers arriving from certain countries overseas may be required, by law, to quarantine by self-isolation for 14 days after arrival. See the list of countries to which this applies. The list is reviewed frequently against the evidence available and it changes from time to time.</li> <li>If you travel back from a country, which requires quarantine, to another part of the UK, but your final destination is Scotland, you must follow the rules that are in place in Scotland.</li> </ul>		
	Mandatory Travel Documentation Passenger locator form.		
Culture/leisure/ entertainment	Closed     Outdoor grouped standing events should not take place.     Nightclubs and adult entertainment venues.		
	<ul> <li>Open</li> <li>Public buildings such as libraries or community centres.</li> <li>All indoor and outdoor visitor attractions such as museums, galleries, educational and heritage attractions, zoos and aquariums.</li> <li>Unregulated activities and services for children and young people include groups such as Brownies or faith-based classes for children, and activities for parents and children such as baby and toddler groups.</li> <li>All other leisure and entertainment businesses can also open with exceptions below.</li> </ul>		
Amateur sport and	You are permitted to meet others outdoors, following the rules about meeting other households, for informal exercise or sports.		
recreation	<ul> <li>Under 18s</li> <li>All organised sports and activities are permitted, provided appropriate safety measures are followed.</li> <li>Adults</li> </ul>		
	<ul> <li>All organised outdoor sports, personal training and coaching are permitted, provided appropriate safety measures are followed.</li> <li>Indoor group exercise classes and non-contact sports are permitted, provided safety measures are followed.</li> <li>Indoor contact sports are not permitted.</li> </ul>		
Professional sport	• Permitted.		
Facemasks	<ul> <li>You must by law (with exceptions) wear a face covering in shops, on public tra airports, and in certain other indoor public places such as shops, restaurants/cafe libraries and places of worship.</li> <li>In workplaces (other than an early learning or school setting), you are legally or school setting.</li> </ul>	es including canteens (including in workplaces and when not seated),	

Scotland – 7/32 local authority areas <sup>(19)</sup>	Current Level: Level 1	Effective from and to: 11/12/2020 – Subject to regular review
	<ul> <li>You are also advised to wear a face covering in other indoor places and where physical distancing is difficult and where there is a risk of being within 2m of people who are not members of your household. This includes, for example, when attending an appointment at any healthcare setting such as GPs' surgeries, dentists, optometrists and hospitals.</li> <li>While it is not compulsory to wear a face covering outdoors it is recommended in crowded situations where physical distancing is not always possible, such</li> </ul>	
Christmas	as at the school gate or at the entrance to a building. In such circumstances you are expected to wear a face covering.  Travel restrictions will be relaxed from 23–27 Dec (inclusive) to allow people to travel between local authority areas and the 4 nations of the UK to join their bubble.  Between 23 and 27 Dec, you can form a bubble of up to 3 households, one of which can be an extended household.  However, we would recommend that you keep any bubble to a max 8 people.  Children < 12 years from these households need not count towards the total number of people counted in the bubble.  You should keep the numbers within a bubble as low as possible and minimise the duration of contact between different households as much as possible.  You should not change the members in your bubble once it has been formed.  If anyone in the bubble contracts Covid-19, all members of the bubble will be required to isolate for 14 days.	
Other	Advised changes to Restrictions - From 14 Dec, the period of self-isolation for people who return from countries with the countries of the cou	which are not on the travel corridor list is reduced from 14 days to 10 days.

Scotland – 7/32 local authority areas <sup>(101)</sup>	Current Level: Level 2	Effective from and to: 11/12/2020 - Subject to regular review	
Movement of people	<ul> <li>Minimise unnecessary journeys between areas in different levels.</li> <li>If you live in a Level 0, 1, or 2 area in Scotland, or are considering travel to Scotland from anywhere else, you should:</li> <li>minimise unnecessary journeys between areas in different levels and avoid any unnecessary travel to places in Level 3 or Level 4 areas.</li> </ul>		
Social/mass gatherings	<ul> <li>Stadia must be closed to spectators.</li> <li>No live events other than drive-in events are permitted.</li> </ul>		
	Indoors  • You should not meet anyone who is not in your household indoors in your home or in their home.  • Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).  Outdoors  • Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).  • Young people aged between 12 and 17 years can meet in groups of up to 6 and are not subject to the 2 household limit.  Places of worship  • Max 50 people indoors provided space to maintain 2m distancing. (Events such as bar mitzvahs and christenings can take place as part of an act of worship).		
	<ul> <li>Funerals and weddings</li> <li>Max 20 people (including the couple, the witnesses and guests) for wedding ceremonies, civil partnership registrations and funerare registration office or hospitality venue.</li> <li>Receptions and wakes can also take place with a max 20 people.</li> </ul>		
Business Activities	Retail  • All retailers can open.  • A number of close contact retail services can open, including: hairdressing and barbers, beauty and nail services (including make-up), hair removal, tattoo, piercing and body modification, fashion design, dress-fitting and tailoring, indoor portrait photography, massage therapies, complementary and alternative medicine services requiring physical contact or close physic proximity between persons (but not osteopathy and chiropractic services), spa and wellness services, other services or procedures which require physical contact or close physical proximity between a provider and a customer and are not ancillary to medical, health, or social care services.  • Mobile close contact service providers must not operate in level 2 with the exception of hairdressers and barbers.		
	Food and beverage Indoors Restaurants, cafes, pubs and bars can open indoors for the consumption of for Alcoholic drinks can only be served with the purchase of a main meal. Last entry 7pm and all venues must be closed and all customers off the premit Outdoors Restaurants, cafes, pubs and bars can open outdoors for the consumption of Last entry 9.30pm and venue must be closed and all customers off the premis Indoors and outdoors	ises by 8pm. food and alcoholic drinks.	
	<ul> <li>Max number of people you can meet indoors and outdoors in a restaurant, café, pub or bar is 6 which can be from up to 2 separate households. (Childre under the age of 12 from these households do not count towards the total number of people meeting.)</li> </ul>		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Scotland – 7/32 local authority areas <sup>(101)</sup>	Current Level: Level 2	Effective from and to: 11/12/2020 – Subject to regular review
,	<ul> <li>Table service is mandatory.</li> <li>Takeaways can still operate as normal, provided food and drink is sold for consumption off the premises.</li> <li>Holiday accommodation</li> <li>All holiday accommodation (Hotels, B&amp;Bs, self-catering, caravan and camping sites) can stay open, in line with sector guidance for tourism and hospitality.</li> <li>At present you must only stay with your household (or extended household) in self-catering accommodation as it is considered a private dwelling.</li> <li>Hotels and other accommodation providers can serve food to guests staying in their premises up to 10pm.</li> <li>Room service, including alcohol, is allowed as normal.</li> <li>Driving schools</li> <li>Driving lessons permitted.</li> </ul>	
	Film and TV production	
Primary schools	Can continue to take place.	
Secondary schools	Open      Open	
Higher and adult education	Colleges and universities can operate using a mix of face-to-face and distance	learning
Domestic travel	Minimise unnecessary journeys between areas in different levels.	
(including transport)	• If you live in a Level 0, 1, or 2 area in Scotland, or are considering travel to Scotland from anywhere else, you should:	
(e.aag cranopere)	- minimise unnecessary journeys between areas in different levels and avoid any unnecessary travel to places in Level 3 or Level 4 areas.	
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Travellers arriving from certain countries overseas may be required, by law, to quarantine by self-isolation for 14 days after arrival. See the list of countries to which this applies. The list is reviewed frequently against the evidence available and it changes from time to time.</li> <li>If you travel back from a country, which requires quarantine, to another part of the UK, but your final destination is Scotland, you must follow the rules that are in place in Scotland.</li> <li>Mandatory Travel Documentation</li> <li>Passenger locator form.</li> </ul>	
Culture/leisure/ entertainment	Closed Soft play, funfairs, indoor bowling, theatres, snooker/pool halls, concert halls, open Public buildings such as libraries or community centres. Cinemas and bingo halls. All indoor and outdoor visitor attractions such as museums, galleries, education. Unregulated activities and services for children and young people include grouparents and children such as baby and toddler groups.	nal and heritage attractions, zoos and aquariums.
Amateur sport and recreation	<ul> <li>You are permitted to meet others outdoors, following the rules about meeting</li> <li>Under 18s</li> <li>All organised sports and activities are permitted, provided appropriate safety meeting</li> </ul>	

Scotland – 7/32 local authority areas <sup>(101)</sup>	Current Level: Level 2	Effective from and to: 11/12/2020 – Subject to regular review	
	<ul> <li>Adults</li> <li>Outdoor organised sports, personal training and coaching are permitted.</li> <li>Indoor organised exercise (such as exercise classes and non-contact sports) are</li> </ul>		
Professional sport	• Permitted.		
Facemasks	<ul> <li>You must by law (with exceptions) wear a face covering in shops, on public transport and public transport premises such as railway and bus stations and airports, and in certain other indoor public places such as shops, restaurants/cafes including canteens (including in workplaces and when not seated), libraries and places of worship.</li> <li>In workplaces (other than an early learning or school setting), you are legally obliged to wear a face covering in communal areas indoors, unless exempt.</li> <li>You are also advised to wear a face covering in other indoor places and where physical distancing is difficult and where there is a risk of being within 2m of people who are not members of your household. This includes, for example, when attending an appointment at any healthcare setting such as GPs' surgeries, dentists, optometrists and hospitals.</li> <li>Whilst it is not compulsory to wear a face covering outdoors it is recommended in crowded situations where physical distancing is not always possible, such as at the school gate or at the entrance to a building. In such circumstances you are expected to wear a face covering.</li> </ul>		
Christmas	<ul> <li>Travel restrictions will be relaxed from 23–27 Dec (inclusive) to allow people to travel between local authority areas and the 4 nations of the UK to join their bubble.</li> <li>Between 23 and 27 Dec, you can form a bubble of up to 3 households, one of which can be an extended household.</li> <li>However, we would recommend that you keep any bubble to a max 8 people.</li> <li>Children &lt; 12 years from these households need not count towards the total number of people counted in the bubble.</li> <li>You should keep the numbers within a bubble as low as possible and minimise the duration of contact between different households as much as possible.</li> <li>You should not change the members in your bubble once it has been formed.</li> <li>If anyone in the bubble contracts Covid-19, all members of the bubble will be required to isolate for 14 days.</li> </ul>		
Other	Advised changes to Restrictions • From 14 Dec, the period of self-isolation for people who return from countries which are not on the travel corridor list is reduced from 14 days to 10 days.		

Scotland – 18/32 local authority areas <sup>(102)</sup>	Current Level: Level 3	Effective from and to: 11/12/2020 – Subject to regular review	
Movement of people	<ul> <li>Minimise unnecessary journeys between areas in different levels.</li> <li>If you live in a Level 3 local authority area you should avoid any unnecessary travel out of the area.</li> </ul>		
Social/mass gatherings	Stadia must be closed to spectators.     No live events are permitted.		
	<ul> <li>Indoors <ul> <li>You should not meet anyone who is not in your household indoors in your home or in their home.</li> <li>Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gather to a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gather young people aged between 12 and 17 years can meet in groups of up to 6 and are not subject to the 2 household limit.</li> </ul> </li> </ul>		
	<ul> <li>Places of worship         <ul> <li>Max 50 people indoors provided space to maintain 2m distancing. (Events such as bar mitzvahs and christenings can take place as part of an act of worship).</li> </ul> </li> <li>Funerals and weddings         <ul> <li>Max 20 people (including the couple, the witnesses and guests) for wedding ceremonies, civil partnership registrations and funerals in a place of working registration office or hospitality venue.</li> <li>Receptions and wakes can also take place with a max 20 people.</li> </ul> </li> </ul>		
Business Activities	Retail  • All retailers can open.  • A number of close contact retail services can open, including: hairdressing and barbers, beauty and nail services (including make-up), hair removal, tattoo, piercing and body modification, fashion design, dre and tailoring, indoor portrait photography, massage therapies, complementary and alternative medicine services requiring physical contact or clo proximity between persons (but not osteopathy and chiropractic services), spa and wellness services, other services or procedures which require contact or close physical proximity between a provider and a customer and are not ancillary to medical, health, or social care services.  • Mobile close contact service providers must not operate in level 3 with the exception of hairdressers and barbers.		
	Food and beverage Indoors and outdoors  Restaurants, cafes, pubs and bars can open indoors for the consumption of food and non-alcoholic drinks.  Alcoholic drinks cannot be served.  Last entry 5pm and all venues must be closed and all customers off the premises by 6pm.  Max number of people you can meet indoors and outdoors in a restaurant, café, pub or bar is 6 which can be from up to 2 separate households. (Children under the age of 12 from these households do not count towards the total number of people meeting.)  Table service is mandatory.  Takeaways can still operate as normal, provided food and drink is sold for consumption off the premises.		
	Holiday accommodation - All holiday accommodation (Hotels, B&Bs, self-catering, caravan and camping sites) can stay open, in line with sector guidance for tourism and		

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Scotland – 18/32 local authority areas <sup>(102)</sup>	Current Level: Level 3	Effective from and to: 11/12/2020 – Subject to regular review	
·	However, tourists should not travel into, or out off, a Level 3 area for holidays or visits.  • At present you must only stay with your household (or extended household) in self-catering accommodation as it is considered a private dwelling.  • Hotels and other accommodation providers can serve food to guests staying in their premises up to 10pm.  • Room service, including alcohol, is allowed as normal.		
	Driving schools - Driving lessons permitted.		
	Film and TV production		
	Can continue to take place.		
Primary schools	• Open		
Secondary schools	• Open		
Higher and adult education  Domestic travel	Colleges and universities can operate using a restricted mix of face-to-face and	d distance learning.	
(including transport)	Those living in a Level 3 area can use holiday accommodation in their area but household.	<ul> <li>Minimise unnecessary journeys between areas in different levels.</li> <li>Those living in a Level 3 area can use holiday accommodation in their area but should not stay in the same self-catered accommodation with another household.</li> </ul>	
	If you live in a Level 3 local authority area you should avoid any unnecessary to a second seco	travel out of the area.	
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Travellers arriving from certain countries overseas may be required, by law, to quarantine by self-isolation for 14 days after arrival. See the list of countries to which this applies. The list is reviewed frequently against the evidence available and it changes from time to time.</li> <li>If you travel back from a country, which requires quarantine, to another part of the UK, but your final destination is Scotland, you must follow the rules that are in place in Scotland.</li> </ul>		
	Mandatory Travel Documentation		
Culture/leisure/ entertainment	Passenger locator form.      Closed     All leisure and entertainment premises.		
	<ul> <li>Open</li> <li>Public buildings such as libraries or community centres.</li> <li>All indoor and outdoor visitor attractions such as museums, galleries, educational and heritage attractions, zoos and aquariums.</li> <li>Unregulated activities and services for children and young people include groups such as Brownies or faith-based classes for children, and activities for parents and children such as baby and toddler groups.</li> </ul>		
Amateur sport and recreation	You are permitted to meet others outdoors, following the rules about meeting Under 18s     All organised sports and activities are permitted, provided appropriate safety nadults     Outdoors     Organised outdoor non-contact sports, personal training and coaching are permitted.     Indoors	measures are followed.	

Scotland – 18/32 local authority areas <sup>(102)</sup>	Current Level: Level 3	Effective from and to: 11/12/2020 – Subject to regular review
	<ul> <li>Exercise is permitted indoors, abiding by the rules on meeting other households.</li> <li>No group exercise classes or sports (contact or non-contact) are permitted indoors.</li> </ul>	
Professional sport	Permitted.	
Facemasks	<ul> <li>You must by law (with exceptions) wear a face covering in shops, on public transport and public transport premises such as railway and bus stations and airports, and in certain other indoor public places such as shops, restaurants/cafes including canteens (including in workplaces and when not seated), libraries and places of worship.</li> <li>In workplaces (other than an early learning or school setting), you are legally obliged to wear a face covering in communal areas indoors, unless exempt.</li> <li>You are also advised to wear a face covering in other indoor places and where physical distancing is difficult and where there is a risk of being within 2m of people who are not members of your household. This includes, for example, when attending an appointment at any healthcare setting such as GPs' surgeries, dentists, optometrists and hospitals.</li> <li>Whilst it is not compulsory to wear a face covering outdoors it is recommended in crowded situations where physical distancing is not always possible, such as at the school gate or at the entrance to a building. In such circumstances you are expected to wear a face covering.</li> </ul>	
Christmas	<ul> <li>Travel restrictions will be relaxed from 23–27 Dec (inclusive) to allow people to travel between local authority areas and the four nations of the UK to join their bubble.</li> <li>Between 23 and 27 Dec, you can form a bubble of up to 3 households, one of which can be an extended household.</li> <li>However, we would recommend that you keep any bubble to a max 8 people.</li> <li>Children &lt; 12 years from these households need not count towards the total number of people counted in the bubble.</li> <li>You should keep the numbers within a bubble as low as possible and minimise the duration of contact between different households as much as possible.</li> <li>You should not change the members in your bubble once it has been formed.</li> <li>If anyone in the bubble contracts Covid-19, all members of the bubble will be required to isolate for 14 days.</li> </ul>	
Other	Advised changes to Restrictions • From 14 Dec, the period of self-isolation for people who return from countries	which are not on the travel corridor list is reduced from 14 days to 10 days.

Scotland – 0/32 local authority areas <sup>(102)</sup>	Current Level: Level 4	Effective from and to: 11/12/2020 - Subject to regular review
Movement of people	<ul> <li>Minimise unnecessary journeys between areas in different levels.</li> <li>If you live in a Level 4 local authority area you should:</li> <li>avoid any unnecessary travel out of the area.</li> <li>if you have to travel for essential purposes, follow the guidance on travelling safely below.</li> </ul>	
Social/mass gatherings	Stadia must be closed to spectators.     No live events are permitted.  Indoors	
	<ul> <li>You should not meet anyone who is not in your household indoors in your home or in their home.</li> <li>Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).</li> </ul>	
	Outdoors  Max 6 people indoors in a public space (not a home) from up to 2 households (children under 12 years don't count towards the total number gathered).  Young people aged between 12 and 17 years can meet in groups of up to 6 and are not subject to the 2 household limit.	
	Places of worship Max 20 people indoors provided space to maintain 2 metre distance worship).	ng. (Events such as bar mitzvahs and christenings can take place as part of an act of
	<ul> <li>Funerals and weddings</li> <li>Max 20 people (including the couple, the witnesses and guests) for registration office or hospitality venue.</li> <li>Wedding or civil partnership receptions cannot take place.</li> </ul>	wedding ceremonies, civil partnership registrations and funerals in a place of worship,
Business Activities	Retail  Non-essential retail closed. Close contacts services closed. Mobile close contact service providers must not operate.	
	Food and beverage Restaurants, cafes, pubs and bars closed. Takeaways can still operate as normal, provided food and drink is s	old for consumption off the premises.
	<ul> <li>Holiday accommodation</li> <li>All holiday accommodation closed to tourism.</li> <li>Hotels, B&amp;Bs and self-catering can remain open for essential customers only.</li> <li>Hotels and other accommodation providers can serve food to guests staying in their premises up to 10pm.</li> <li>Room service, including alcohol, is allowed as normal.</li> </ul>	
	Driving schools - Driving lessons closed.	
	Film and TV production	

Scotland – 0/32 local authority areas <sup>(102)</sup>	Current Level: Level 4	Effective from and to: 11/12/2020 - Subject to regular review
	Can continue to take place.	
Primary schools	• Open	
Secondary schools	• Open	
Higher and adult education	<ul> <li>Colleges and universities can operate using a restricted mix of face-to-face and</li> </ul>	distance learning.
Domestic travel	• You must not travel into or out of a Level 4 area except for essential reasons.	
(including transport)	No use of public transport except for essential purposes.	
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Travellers arriving from certain countries overseas may be required, by law, to quarantine by self-isolation for 14 days after arrival. See the list of countries to which this applies. The list is reviewed frequently against the evidence available and it changes from time to time.</li> <li>If you travel back from a country, which requires quarantine, to another part of the UK, but your final destination is Scotland, you must follow the rules that are in place in Scotland.</li> <li>Mandatory Travel Documentation</li> <li>Passenger locator form.</li> </ul>	
Culture/leisure/ entertainment	<ul> <li>Closed         <ul> <li>All leisure and entertainment premises.</li> <li>Public buildings including libraries although click and collect will operate.</li> <li>All indoor visitor attractions such as museums, galleries, heritage attractions, indoor areas of zoos and aquariums are closed.</li> </ul> </li> <li>Open         <ul> <li>Community centres can continue to operate for the delivery of essential services only.</li> <li>Outdoor visitor attractions, such as parks, gardens and the outdoor areas of zoos may remain open, to enable exercise and recreation to be undertaken with appropriate physical distancing in place.</li> <li>Unregulated activities and services for children and young people include groups such as Brownies or faith-based classes for children, and activities for parents and children such as baby and toddler groups</li> </ul> </li> </ul>	
Amateur sport and recreation	You are permitted to meet others outdoors, following the rules about meeting other households, for informal exercise or sports.  Under 18s     No indoor sport     No contact sport     Non-contact outdoor organised sports and activities are permitted, provided appropriate safety measures are followed.  Adults     No indoor sport     No contact sport     No contact sport	
	• Non-contact outdoor organised sports and activities are permitted, provided appropriate safety measures are followed.	
Professional sport	Permitted.	
Facemasks	<ul> <li>You must by law (with exceptions) wear a face covering in shops, on public tra airports, and in certain other indoor public places such as shops, restaurants/caf libraries and places of worship.</li> <li>In workplaces (other than an early learning or school setting), you are legally or</li> </ul>	es including canteens (including in workplaces and when not seated),

Scotland – 0/32 local authority areas <sup>(102)</sup>	Current Level: Level 4	Effective from and to: 11/12/2020 – Subject to regular review
	<ul> <li>You are also advised to wear a face covering in other indoor places and where physical distancing is difficult and where there is a risk of being within 2m of people who are not members of your household. This includes, for example, when attending an appointment at any healthcare setting such as GPs' surgeries, dentists, optometrists and hospitals.</li> <li>While it is not compulsory to wear a face covering outdoors it is recommended in crowded situations where physical distancing is not always possible, such as at the colored gate or at the entrance to a building. In such circumstances you are expected to wear a face covering.</li> </ul>	
Christmas	as at the school gate or at the entrance to a building. In such circumstances you are expected to wear a face covering.  • Travel restrictions will be relaxed from 23–27 Dec (inclusive) to allow people to travel between local authority areas and the 4 nations of the UK to join their bubble.  • Between 23 and 27 Dec, you can form a bubble of up to 3 households, one of which can be an extended household.  • However, we would recommend that you keep any bubble to a max 8 people.  • Children < 12 years from these households need not count towards the total number of people counted in the bubble.  • You should keep the numbers within a bubble as low as possible and minimise the duration of contact between different households as much as possible.  • You should not change the members in your bubble once it has been formed.  • If anyone in the bubble contracts Covid-19, all members of the bubble will be required to isolate for 14 days.	
Other	Advised changes to Restrictions	
	<ul> <li>From 14 Dec, the period of self-isolation for people who return from countries</li> </ul>	which are not on the travel corridor list is reduced from 14 days to 10 days.

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Wales <sup>(14)</sup>	Current Level: Not reported	Effective from and to: 04/12/2020 — Until such time as the situation changes	
Movement of people	<ul> <li>People should avoid non-essential travel as much as possible.</li> <li>No legal restrictions on travel within Wales for residents.</li> </ul>		
Social/mass gatherings	<ul> <li>People can meet people who are part of their 'bubble' in their own home; only 2 households will be able to form a 'bubble'. If one person from either household develops symptoms, everyone should immediately self-isolate.</li> <li>People can meet in groups of up to 4 people (not including any children aged under 11 years) in regulated indoor places, such as hospitality – bars, pubs, cafes and restaurants.</li> </ul>		
	<ul> <li>Places of worship</li> <li>Places of worship open.</li> <li>Recommended that, where possible, places of worship continue to broadcast worship.</li> <li>Activities such as congregational singing, chanting, or shouting should be specifically avoided indoors.</li> </ul>		
<b>Business Activities</b>	Retail	•	
	<ul> <li>All retail businesses, including close-contact services such as hair dressers/barbers and beauty salons open.</li> <li>Food and beverage</li> <li>Groups of up to 4 people (not including any children aged under 11 years).</li> <li>Pubs, bars, restaurants and cafes will not be allowed to serve alcohol and must close by 6pm.</li> <li>After 6pm they will only be able to provide takeaway services.</li> </ul>		
Primary schools	Closure at 10.30pm for premises that have a licence to sell alcohol.  Open		
Secondary schools	• Open • Open		
Higher and adult education	Combination of in-person teaching and blended learning.		
Domestic travel	People should avoid non-essential travel as much as possible.		
(including transport)	No legal restrictions on travel within Wales for residents.		
(including transport)	There may continue to be reductions in public transport services.		
International travel	Entry restrictions		
(inbound)	• Those intending to travel to Wales should check the current travel corridor list to see whether you need to isolate for 10 days.		
	Mandatory Travel Documentation  • Passenger locator form.		
Culture/leisure/ entertainment	Closed Theatres and concert halls, nightclubs and sexual entertainment venues. Indoor entertainment venues, including cinemas, bingo halls, bowling alleys, soft play centres, casinos, skating rinks and amusement arcades. Indoor visitor attractions, such as museums, galleries and heritage sites.		
	Open Outdoor visitor attractions.		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Wales <sup>(14)</sup>	Current Level: Not reported	Effective from and to: 04/12/2020 — Until such time as the situation changes	
Amateur sport and recreation	physical distancing.  • Max 15 people in an organised indoors activity, such as an exercise class – who	<ul> <li>Sport and leisure facilities, including gyms and swimming pools open, but the operators must take all reasonable measures to manage risk and maintain physical distancing.</li> <li>Max 15 people in an organised indoors activity, such as an exercise class – where a responsible body is managing the event.</li> <li>Max 30 people in an organised activity outdoors, providing all social distancing, hand hygiene and other COVID safety measures are followed.</li> </ul>	
Professional sport	No information found.		
Facemasks	than when you are seated to eat or drink.  • It applies to staff working in indoor public areas and to members of the public	<ul> <li>Face coverings must be worn in all indoor public places. This includes on public transport and taxis, and in places where food and drink is served, other than when you are seated to eat or drink.</li> <li>It applies to staff working in indoor public areas and to members of the public entering those public areas.</li> <li>It applies to everyone aged 11 and over, unless an exception applies. Children under 11 do not have to wear face coverings.</li> </ul>	
Christmas	Between 23 and 27 Dec:  Travel restrictions across the four UK nations and between tiers will be lifted during this period.  Up to 3 households will be able form an exclusive Christmas 'bubble' to meet at home during this period. To recognise the risks of loneliness and isolation, a single adult household will also be able to join this bubble, as in England.  Each Christmas bubble can meet at home, at a place of worship or an outdoor public place.		
Other	<ul> <li>Lateral flow tests for students travelling home for Christmas</li> <li>New COVID-19 lateral flow tests, designed to diagnose people without symptoms, will be provided to students who are planning to travel home for the holiday.</li> <li>Universities across Wales will also end the majority of 'in person' lessons in the week leading up to 8 Dec, allowing anyone who tests positive for coronavirus to self-isolate for 14 days before travelling home for the Christmas break.</li> <li>Students at universities in Wales who plan to travel home for the holidays will be asked to:         <ul> <li>minimise their social contacts in the run up to the end of term;</li> <li>get an asymptomatic test, ideally within 24 hours of their intended travel time. New asymptomatic testing facilities will be available at participating universities in Wales within the next few weeks;</li> <li>plan to travel no later than 9 Dec, allowing time to rearrange their travel plans in case they need to self-isolate;</li> <li>familiarise themselves with their university's plans for concluding in-person teaching and arrangements to ensure people can exit campuses safely.</li> </ul> </li> </ul>		

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Switzerland <sup>(18)</sup>	Current Level: Not reported	Effective from and to: 09/12/2020 – Indefinite
Movement of people	Curfew from 11pm to 6am.     Work from home if possible.	
Social/mass gatherings	Household gatherings  • A 2 household rule for private gatherings and meals at restaurants is strongly recommended.  Private gatherings	
	<ul> <li>Max 10 people may attend private events with family or friends in private rooms or locations.</li> <li>Public gatherings         <ul> <li>Max 15 people gathered in public spaces.</li> <li>Max 50 people may attend events at public establishments. Note: This does not include people involved on the basis of their work (staff of the event venue, but also sports people at competitions and artists at performances) and people helping to run the event.</li> <li>Exceptions to this rule are parliamentary and communal assemblies, political demonstrations and collection of signatures for referendums and initiatives.</li> </ul> </li> </ul>	
Business Activities	Worship, religious services and funerals  • Max 50 people.	
	All open with the following restrictions across a number of sectors:  Retail Reduced numbers of customers in shops.  Food and beverage Remain open but close at 11pm. Guests must eat and drink sitting down, regardless of whether they are in interior rooms or outdoor guest areas (e.g. terraces and street areas). No more than 4 people will be allowed to sit at a table in restaurants and bars, with the exception of parents with children.  Markets and fairs	
	Markets and fairs in enclosed spaces not permitted.	
Primary schools	Classroom teaching permitted at compulsory school level and at upper secondary schools (baccalaureate and vocational schools).	
Secondary schools Higher and adult education	Classroom teaching permitted at compulsory school level and at upper secondary schools (baccalaureate and vocational schools).      Online teaching.	
Domestic travel (including transport)	Online teaching.      Night trains and night buses cancelled.	
International travel (inbound)	<ul> <li>Entry restrictions</li> <li>Entry from EU Member States + Schengen Associated countries is allowed without restrictions, unless a country or region is defined as COVID risk area. The Federal Office of Public Health keeps a list of countries concerned, which is updated regularly.</li> <li>All travellers entering Switzerland from countries or regions that are defined as COVID risk areas will have to quarantine for 10 days.</li> <li>If a country is on the list, this includes all of its areas, islands and overseas territories – even if they are not listed separately. Switzerland's neighbouring countries are exempted from this regulation. In the case of these countries, it is not the entire country that is listed, but rather regions. Further information in this regard can be found on the page Frequently Asked Questions (FAQs).</li> </ul>	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

Switzerland <sup>(18)</sup>	Current Level: Not reported	Effective from and to: 09/12/2020 - Indefinite
	<ul> <li>A negative test result does not exempt you from the mandatory quarantine requirement or shorten the quarantine period.</li> <li>Travellers that are required to go into quarantine will be notified during the flight, on board of coaches and at border crossings. They will have to register with the cantonal authorities within two days after arrival, and follow their instructions.</li> <li>Mandatory Travel Documentation         No additional documentation is required.     </li> </ul>	
Culture/leisure/ entertainment	Max 50 people at cultural events.     Discos and nightclubs closed.	
	Non-professional basis  The following are permitted:  • All activities for children and young people <16 years. This also applies, for example, to children's instrumental classes at music schools.  • Individuals aged 16 years and over practising or rehearsing (e.g. making music in rehearsal rooms).  • Performances by individuals and rehearsals and performances in groups of up to 15 people aged 16 years or over provided masks are worn and the requisite distance is maintained. This largely permits the teaching of music in individual and group lessons. Masks need not be worn in large rooms if additional distancing rules and restrictions on capacity apply. This, for example, allows rehearsals by bands with wind instruments and teaching with wind instruments.	
	Professional basis The following are permitted: Rehearsals and performances by artists or ensembles. Max 50 guests permitted at performances.	
	Choirs - Singing only permitted among family and in schools.	
Amateur sport and recreation	<ul> <li>Recreational contact sports are prohibited everywhere.</li> <li>Max 15 people at recreational sporting activities outdoors and indoors if a suff</li> <li>Swimming pools and fitness centres can remain open subject to restrictions.</li> <li>Water sports are also permitted provided additional distancing rules and capact for sports not involving a lot of movement).</li> <li>These rules do not apply to children under the age of 16, even in compulsory so</li> </ul>	city restrictions can be applied (more than 15m² of space per person, or 4m²
	Rules for ski resorts - 2/3rds capacity in cable cars and gondolas Entry to restaurants only possible if a table is available Masks must be worn when queuing for and travelling on ski lifts and all other - Keep a distance of at least 1.5m when queuing.	forms of transport.
Professional sport	<ul> <li>Professional sporting activities, practice and training sessions, and competitive events are permitted.</li> <li>Professional teams can play matches including staff, the media and TV broadcasting, but before a max of 50 spectators.</li> </ul>	
Facemasks	<ul> <li>Mask wearing is mandatory in publicly accessible indoor spaces as well as in public transport waiting areas and railway stations and airports.</li> <li>Masks must be worn in indoor and outdoor areas of establishments and businesses such as shops, zoos, theatres, cinemas, concert and event venues,</li> </ul>	

Table 2 Summary of current public health measures by country (extracted on 11 December 2020)

Switzerland <sup>(18)</sup>	Current Level: Not reported	Effective from and to: 09/12/2020 - Indefinite
	restaurants, bars and markets. People can take off their masks in restaurants and bars if they are consuming food or drink at the table.  • Masks must also be worn outdoors in busy pedestrian areas of town and village centres and as soon as there is a gathering of people where it is not possible to keep the required distance (for example busy streets, squares and parks.  • Masks must be worn in fitness centres. Masks need not be worn in large rooms if distancing rules and restrictions on capacity apply and ventilation is assured.  • Masks must be worn when queuing for and travelling on ski lifts and all other forms of transport at ski resorts.  • Wearing a mask is mandatory in schools from upper secondary level (level II) upwards.  • Masks are also mandatory in the workplace unless the distance between workspaces can be maintained (e.g. in individual offices).  • Children under the age of 12 years, persons who are unable to wear a mask for medical reasons, and guests in restaurants and bars when seated at a table are not required to wear a mask.	
Other	table are not required to wear a mask.  Stricter rules apply in a number of cantons.  Advised changes to Restrictions (nationwide from 12 Dec)  Restaurants and bars closed from 7pm.  Shops and markets closed from 7pm on Sundays and public holidays.  Museums and libraries closed from 7pm on Sundays and public holidays.  Entertainment, sport and leisure facilities closed from 7pm on Sundays and public holidays.  Ban on events with exceptions for religious services, funerals, political demonstrations and legislative assemblies.  Max 5 people at cultural and sporting activities with exceptions for child, youth and professional activities.	

**Table 2** Summary of current public health measures by country (extracted on 11 December 2020)

[All measures are as above for Switzerland and the following]  Movement of people  - Leave home only if necessary However no restriction on distance or time.  Outdoor gatherings - Max 5 people in public places, walks, parks and around bodies of water.  Public and Private events - Max 5 people in public places, walks, parks and around bodies of water.  Places of worship - Religious services and other religious events may resume with a max of 50 attendees.  Weddings and funerals - Max 5 people at funerals - Max 5 people at funerals - Max 5 people at funerals - Max 6 people at funerals - Max 7 people at funerals - Max 8 people at funerals - Max 8 people at funerals - Max 8 people at funerals - Max 9 people at fune	Switzerland – Geneva <sup>(103)</sup>		
- However no restriction on distance or time.  Outdoor gatherings - Max 5 people in public places, walks, parks and around bodies of water.  Public and Private events - Max 5 people in cluding the family circle.  Places of worship - Religious services and other religious events may resume with a max of 50 attendees.  Weddings and funerals - Max 50 people at weddings Max 50 people at funerals Max 50 people at funerals - Open with restrictions Prood and beverage - Open with restrictions Max 4 people per table, unless they are parents with their own children.  Personal care services - Activities offering services involving physical contact are open (e.g. hairstylists, beauticians, barbers, tattooists etc.)  Primary schools - Schools up to Secondary level II remain open.  Secondary schools - Culture/leisure/ entertainment - Nuseums, libraries and exhibition venues.  Closed - Ibscos and nightclubs Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks Facilities and fitness and wellness centres Swimming pools.	for Switzerland and the		Effective from and to: 02/11/2020 – 15/01/2021 at least
* Max 5 people in public places, walks, parks and around bodies of water.  **Public and Private events** - Max 5 people including the family circle.  **Places of worship** - Religious services and other religious events may resume with a max of 50 attendees.  **Weddings and funerals** - Max 5 people at weddings Max 5 people at funerals Max 6 people at funerals Open with restrictions Food and beverage - Open with restrictions Max 4 people per table, unless they are parents with their own children.  **Personal care services** - Activities offering services involving physical contact are open (e.g. hairstylists, beauticians, barbers, tattooists etc.)  **Primary schools** - Schools up to Secondary level II remain open.  **Schools up to Secondary level II remain open.  **Open** - Museums, libraries and exhibition venues.  **Closed** - Discos and nightclubs Facilities and fitness and wellness centres Schools up to Secondary level in the main open Facilities and fitness and wellness centres Swimming pools.	Movement of people		
Religious services and other religious events may resume with a max of 50 attendees.  Weddings and funerals - Max 5 people at weddings Max 50 people at funerals.  Retail - Open with restrictions.  Food and beverage - Open with restrictions Max 4 people per table, unless they are parents with their own children.  Personal care services - Activities offering services involving physical contact are open (e.g. hairstylists, beauticians, barbers, tattooists etc.)  Primary schools - Schools up to Secondary level II remain open.  Open - Museums, libraries and exhibition venues.  Closed - Discos and nightclubs Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks Enclosed places of botanical gardens and zoos Facilities and fitness and wellness centres Swimming pools.	Social/mass gatherings	<ul> <li>Max 5 people in public places, walks, parks and around bodies of water.</li> <li>Public and Private events</li> </ul>	
Retail Open with restrictions.  Food and beverage Open with restrictions.  Max 4 people per table, unless they are parents with their own children.  Personal care services Activities offering services involving physical contact are open (e.g. hairstylists, beauticians, barbers, tattooists etc.)  Primary schools Secondary schools Secondary schools Culture/leisure/entertainment  Closed Nuseums, libraries and exhibition venues.  Closed Discos and nightclubs. Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks. Facilities and fitness and wellness centres. Swimming pools.		Places of worship Religious services and other religious events may resume with a max of 50 attendees.  Weddings and funerals	
Primary schools Secondary schools Culture/leisure/entertainment  Closed  Dea  Musums, libraries and exhibition venues.  Closed  Discos and nightclubs. Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks. Fracilities and fitness and wellness centres. Swimming pools.		Max 50 people at funerals.	
- Schools up to Secondary level II remain open.  Culture/leisure/ entertainment  Open  Museums, libraries and exhibition venues.  Closed  Discos and nightclubs. Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks. Enclosed places of botanical gardens and zoos. Facilities and fitness and wellness centres. Swimming pools.		<ul> <li>Open with restrictions.</li> <li>Food and beverage</li> <li>Open with restrictions.</li> <li>Max 4 people per table, unless they are parents with their own children.</li> <li>Personal care services</li> </ul>	
Closed  Discos and nightclubs. Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks. Enclosed places of botanical gardens and zoos. Facilities and fitness and wellness centres. Swimming pools.	Primary schools	Schools up to Secondary level II remain open.	
<ul> <li>Museums, libraries and exhibition venues.</li> <li>Closed         <ul> <li>Discos and nightclubs.</li> <li>Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks.</li> <li>Enclosed places of botanical gardens and zoos.</li> <li>Facilities and fitness and wellness centres.</li> <li>Swimming pools.</li> </ul> </li> </ul>			
Times at your		Open  • Museums, libraries and exhibition venues.  Closed  • Discos and nightclubs.  • Facilities and establishments of entertainment and recreation, including cinemas, games rooms, concert halls, theatres, casinos, public ice rinks.  • Enclosed places of botanical gardens and zoos.  • Facilities and fitness and wellness centres.  • Swimming pools.	
Non-professional cultural activities permitted.			

Switzerland — Geneva <sup>(103)</sup> [All measures are as above for Switzerland and the following]	Current Level: State of Necessity	Effective from and to: 02/11/2020 - 15/01/2021 at least	
	Over 16 years Individual rehearsals allowed. Max 15 people for group activities as long as distance and mask wearing guidelines followed.  Professionals		
Amateur sport and recreation	<ul> <li>Rehearsals of professional artists or ensembles are permitted subject to guideline compliance.</li> <li>Facilities and fitness and wellness centres open from 21 Nov for individual or group coaching of up to 5 people (coach included, without physical contact, wearing a mask at all times and respecting the distance of 1.50m).</li> <li>Swimming pools closed.</li> <li>Children under 12 years</li> <li>Max 15 people for indoor sports activities.</li> <li>Over 12 years</li> </ul>		
Professional sport	<ul> <li>Max 5 people for activity that does not involve physical contact.</li> <li>Limitations do not apply to physical education classes at school.</li> <li>Professional sports activities and those at a high level allowed.</li> </ul>		
Christmas	Between 23 Dec and 3 Jan 2021, max of 10 people (including children) can me     Restaurants will be allowed to open until 1am during the night on New Year's E		
Other	N/A		

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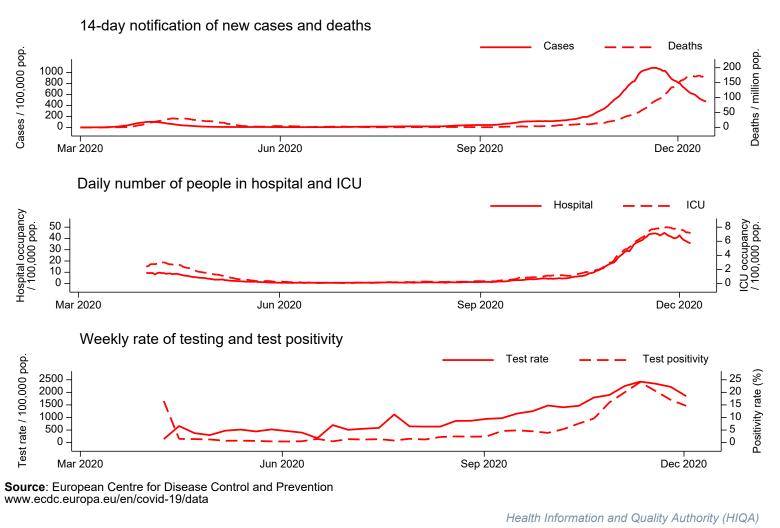
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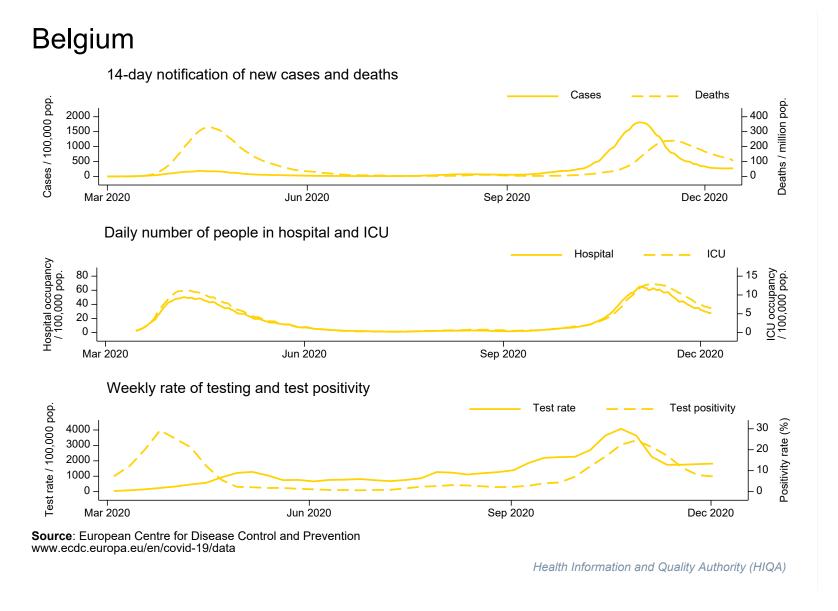
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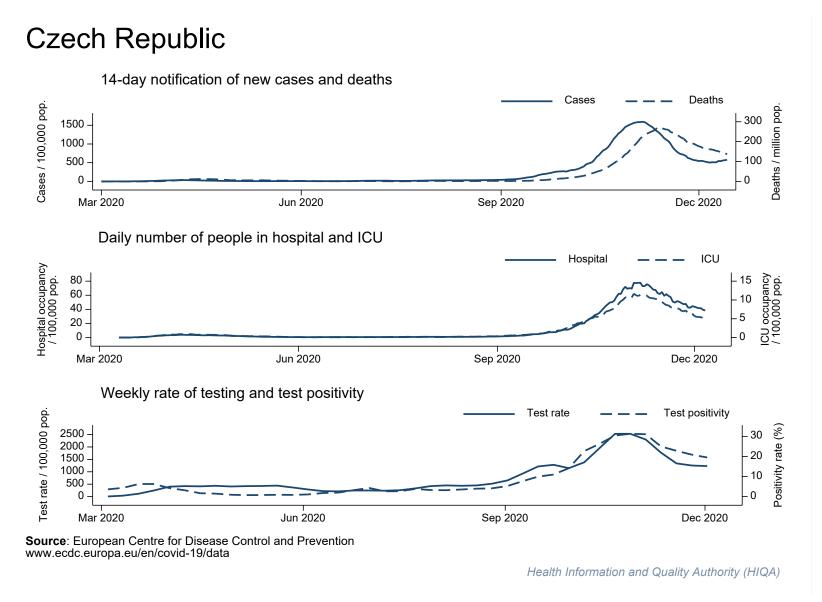
### **Appendix A – Summary epidemiological data by country**

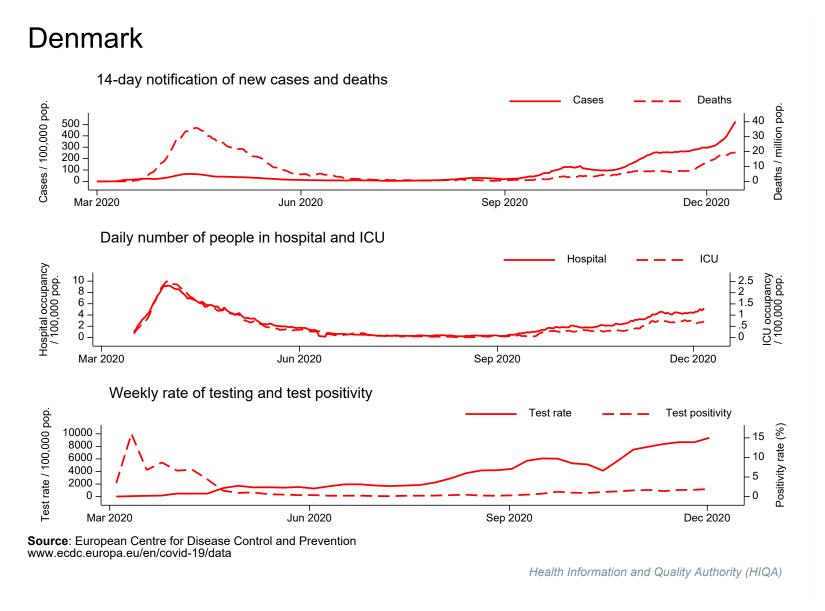




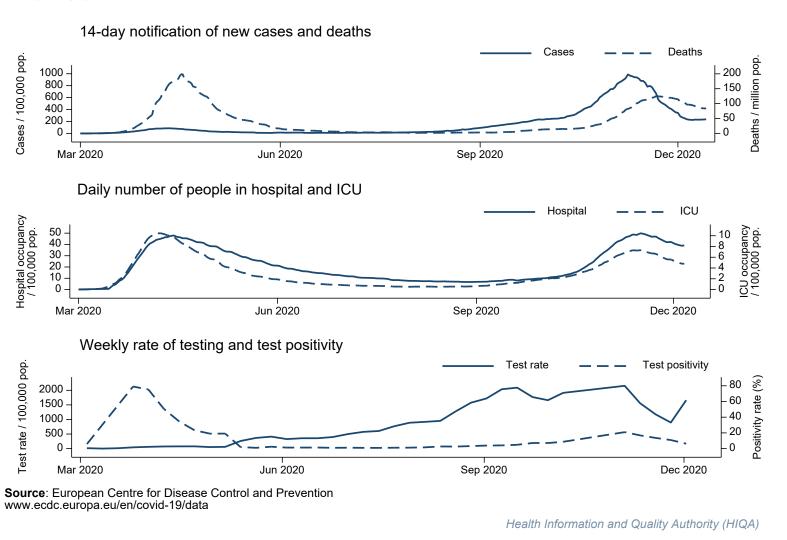


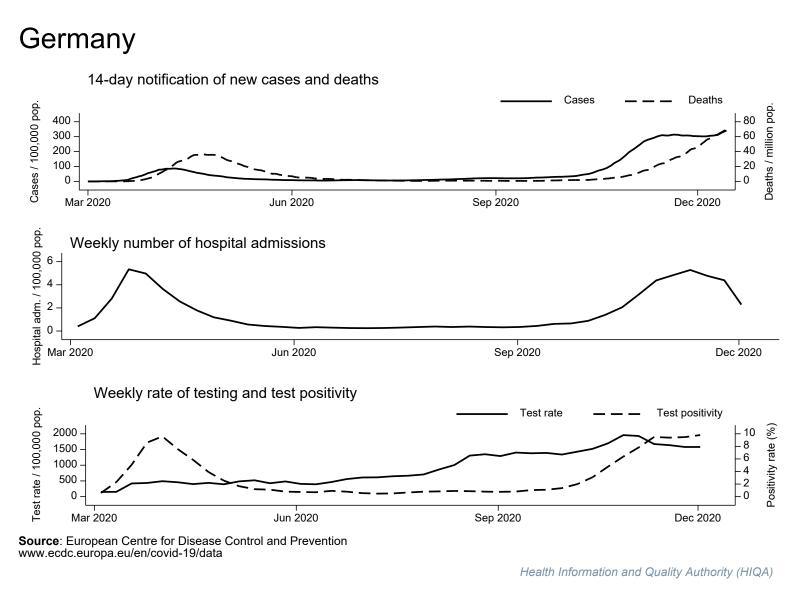
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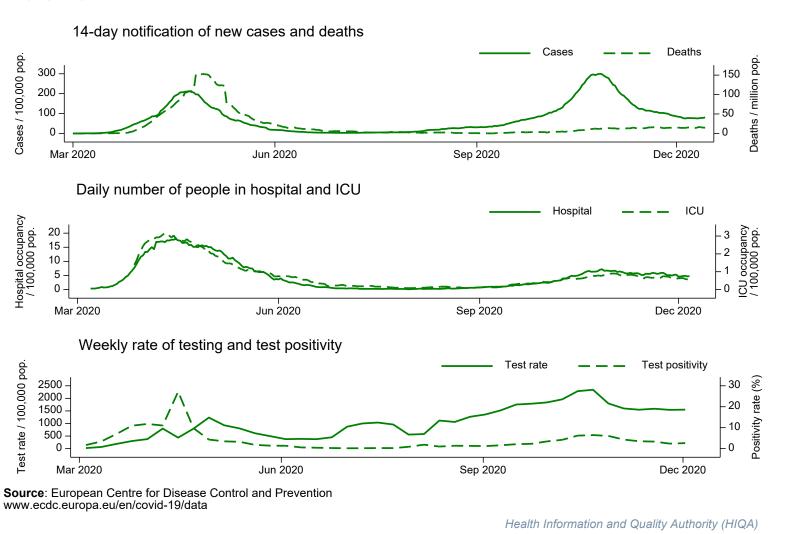
## France



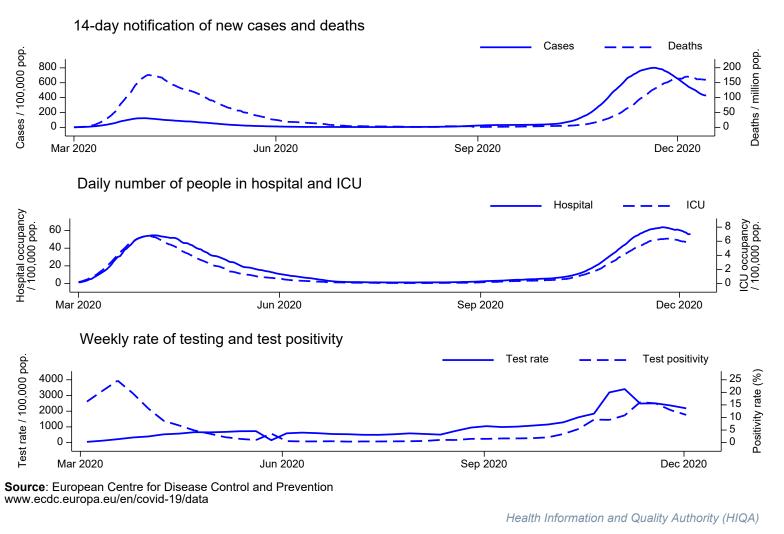


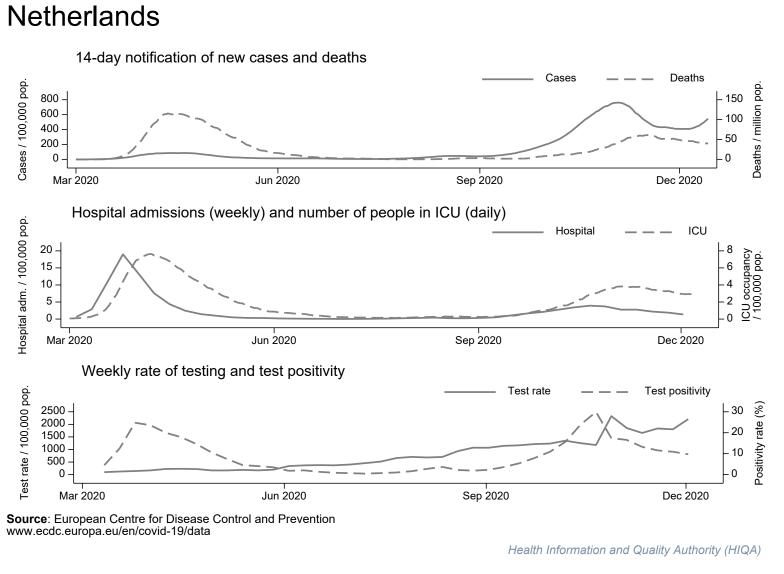
NOTE: ECDC report weekly admissions to hospital for Germany, rather than daily number; ICU data are not available

## Ireland

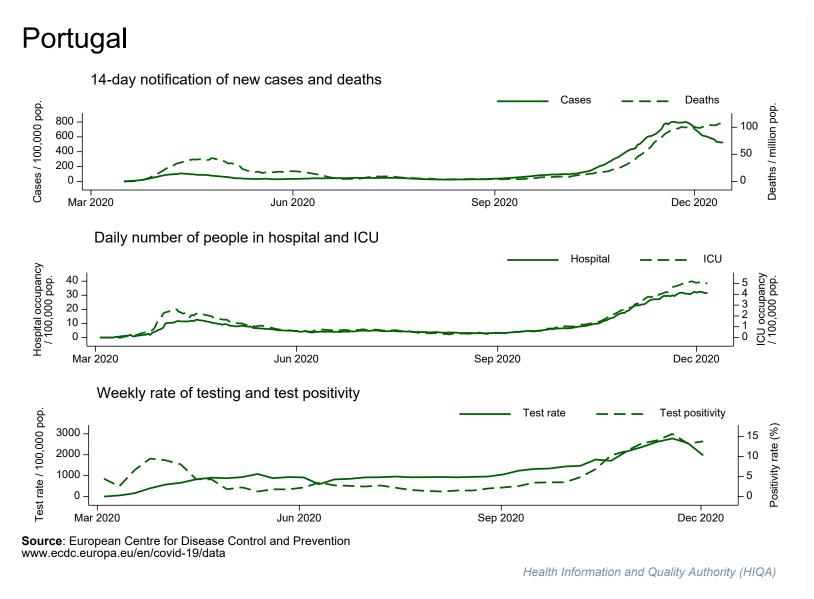


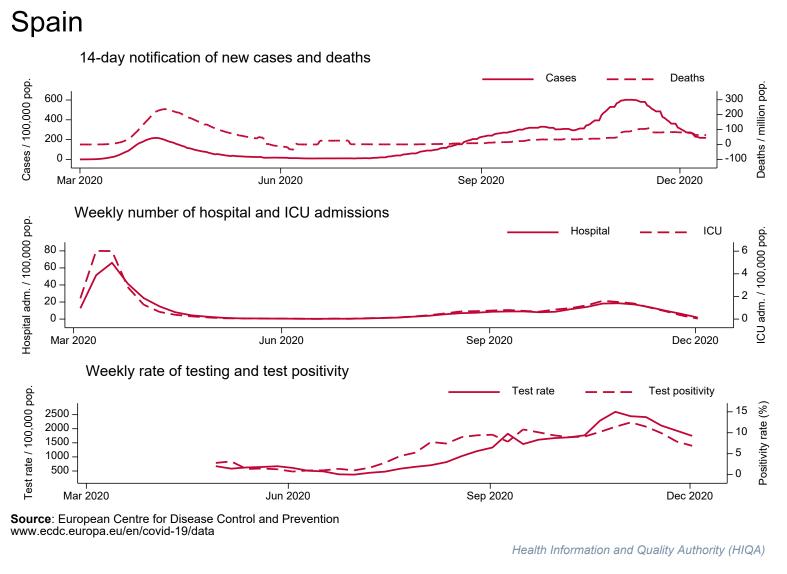
# Italy



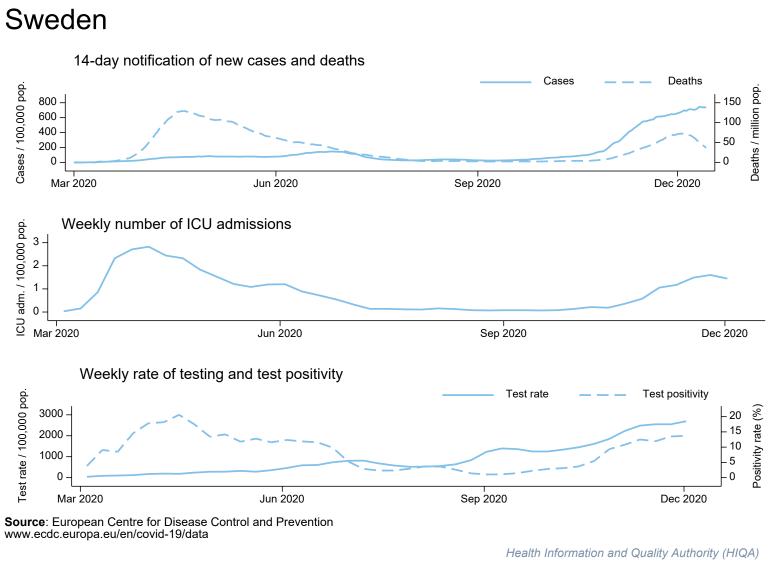


NOTE: ECDC report weekly admissions to hospital for Netherlands, rather than daily number; daily ICU data are presented

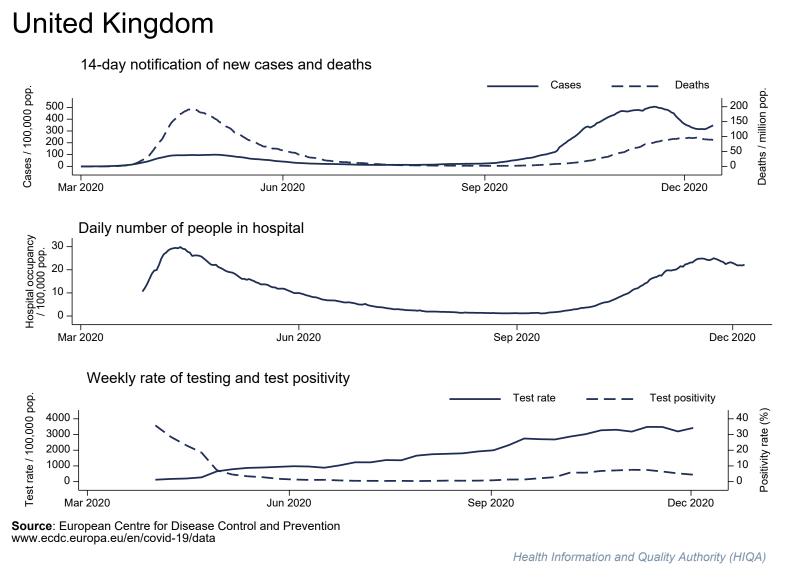




NOTE: ECDC report weekly admissions to hospital and ICU for Spain; testing data are only available from May onwards



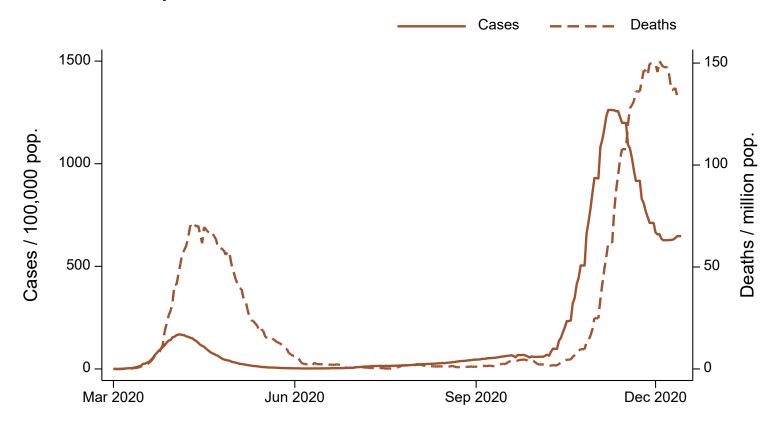
NOTE: ECDC report weekly admissions to ICU for Sweden, rather than daily number; hospital data are not available



NOTE: ICU data are not available; hospital and testing data are only available from April onwards.

## Switzerland

### 14-day notification of new cases and deaths



**Source**: European Centre for Disease Control and Prevention www.ecdc.europa.eu/en/covid-19/data

Health Information and Quality Authority (HIQA)

NOTE: Hospital and ICU data are not available for Switzerland, along with testing data

### **Appendix B – Developed frameworks for living with COVID-19 by country**

Table B.1 International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19 (C	Triggers to inform a change in public health measures
Austria <sup>(3, 104)</sup>	Austria uses a traffic light approach to determine the level of risk of SARS-CoV-2 in different areas.  Red: very high risk:     Uncontrolled outbreaks, large scale spread.  Orange: high risk:     Accumulation of cases, no longer predominantly clusters.  Yellow: medium risk:     Moderate cases whose origin and distribution are known (= mainly in clusters).  Green: low risk:     Individual cases, isolated clusters.	The evaluation of the current epidemiological situation at federal, state and district level is carried out on the basis of four indicators:  Transferability (cases): The indicators "7-day number of cases" (new cases that have occurred in the past 7 days), "7-day incidence" (new cases that have occurred over the past 7 days per 100,000 inhabitants), "Number of new clusters within a calendar week"," Number of districts with new cluster cases within a calendar week" and "Number of cluster case-free districts within a calendar week" are intended to help assess the epidemiological development of SARS-CoV2.  Source search (cluster): "Cases with a clear source" shows the traceability of the transmission chain as a result of Case & Contact Tracing. Here, the source of infection is differentiated and it is shown whether it was most likely a transmission abroad (travel-associated transmission) or whether the source of the infection was associated with a local transmission chain.  The newly occurring cases are also assessed with regard to their clinical manifestation of the SARS-CoV2 infection (symptomatic / asymptomatic).  Resources (in healthcare): Here indicators are used that show the existing and required supply capacities. They contain the current occupancy in normal and intensive care units as well as the current utilization of the existing hospital capacities.  Tests: The indicators "tests per 100,000 inhabitants", number of tests in the past 7 days and the positivity rate (proportion of positive tests in all tests per region) allow understanding of the test activity and provide information about the transmission in the respective region.  Ongoing evaluations  The Corona Commission assesses the epidemic situation on the basis of various factors. These are among others:  Previous developments  Mobility of population  Regional particularities  Traffic light colour is recommended at federal, state and/ or district level.

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in public health measures
		The decision to determine the traffic light colour is made at a political level. The competent authorities then set specific measures according to the traffic light colour by ordinance:  For Austria the Minister of Health  For a federal state/ several federal states, the governors in coordination with the health minister  For districts/regions, the district administrative authorities in coordination with the provincial governors and the health minister.
		Targeted action
		A guideline for preventative measures in all areas of society/economy enables a
		largely uniform approach in similar epidemiological situation.
Belgium <sup>(4, 105)</sup>	The <b>COVID-19 Control Tower</b> is a system controlled by	The following is also taken into account
	Sciensano which closely monitors the situation regarding the	<ul> <li>the trend of the figures (upward or downward);</li> </ul>
	number of coronavirus infections in Belgium. On the basis	<ul> <li>the percentage of positive tests;</li> </ul>
	of the resulting figures, the control tower can assign <b>a threat</b>	<ul> <li>any possible additional information relating to the nature of local outbreaks.</li> </ul>
	level at national and provincial level.	outbreaks.
	In first instance, the number of infections per 100,000 inhabitants over the previous 14 days is taken into account. The	Each of these alert levels is linked to specific actions and there are also guidelines in terms of measures to be taken.
	more infections in an area, the higher the level of alarm:	These actions and measures are best taken and implemented as locally as possible, in consultation with the regional health agencies and with a particular focus on
	<ul> <li>No alarm: no or only a few sporadic infections</li> <li>Pre-alarm phase: 1 to 14 infections</li> </ul>	vulnerable groups. Measures can also be phased out on the basis of defined criteria for each threat level.
	<ul> <li>Alarm level 1: between 15 and 30</li> </ul>	For example, it can be decided to switch schools from code yellow to orange. It is
	• Alarm level 2: between 31 and 50	the responsibility of the Minister of Education to decide this in consultation with the
	• Alarm level 3: between 51 and 100	local authorities.
	Alarm level 4: more than 100.	Additional federal measures can also be taken within alarm levels 3 and 4.
	Other measures aimed at safe guarding schools are also in	An assessment is also made on a regular basis at the level of the municipalities.
	place. Under these measures <b>schools are colour coded,</b> under	Based on:
	'code yellow' pupils can attend school, at all levels of	• the figures
	education. Code yellow means that the virus is still present and	the type of outbreaks
	active, but the situation is under control. This system <b>will allow</b>	<ul><li>other previous criteria.</li></ul>
	a normal working week consisting of 5 days.	If the situation evolves unfavourably for certain municipalities, the local crisis unit
		may be asked to come together and analyse the situation and, if necessary, take
	In municipalities experiencing peaks of infected people, the	additional measures.
	Ministers of Education can decide to move to 'code orange'.	

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in public health measures	
	Under 'code orange' certain changes will be made, such as the <b>number of school days will be reduced.</b>		
Czechia <sup>(5, 106,</sup> 107)	A new system has been developed (November 2020) in cooperation between the Ministry of Health, Institute of Health and Information Statistics (IHIS) and university experts, to map the current epidemiological situation using the anti-epidemic system (PES in Czech) risk score. The risk score will be calculated based on epidemiological indicators, with the risk scores corresponding to different levels of restrictive measures as follows:  Level Risk Score  1 0 - 20 2 21 - 40 3 41 - 60 4 61 - 75 5 76 - 100	The main goal of the new PES evaluation system is to improve the predictability of the current epidemiological situation. The score will include only those parameters which each citizen can evaluate and calculate using available data. The authorities want the public to understand the situation in their region and whether they should prepare for the easing or tightening of the implemented measures.  Depending on the score, the regions, or smaller administrative areas, will be assigned to one of the five alert levels (linked to the respective anti-epidemic measures concerning e.g. masks, assembly, shopping centres and retail, culture and education). The indicators taken into consideration when deciding what risk score to assign to each area include, but are not limited to:  14-day numbers of newly positive patients, 14-day numbers of newly positive seniors (age 65+), 7-day average positivity of tests for the presence of SARS-CoV-2 and the dynamics of the increase in the number of new positives.  Data and reports regularly provided by IHIS listed below will also be taken into	
		<ul> <li>consideration:</li> <li>Regional development of the COVID-19 epidemic and prediction of development in model scenarios.</li> <li>Current state of morbidity, mortality and prediction of the development of hospital needs (available capacities).</li> <li>Data from Smart Quarantine systems including testing and its development, composition of cohorts tested.</li> <li>Tracing efficiency and derived diagnostic performance indicators.</li> </ul>	
<b>Denmark</b> <sup>(6,</sup> 108-110)	A framework for COVID-19 commonly referred to as a 'warning system for COVID-19' or 'COVID-19 alert system' has been developed in Denmark. Under the framework there are 5 risk levels ranging from risk level 1 to 5:  Risk level 1: Low and local infection with possibility of flare-up Risk level 2: Local and regional outbreaks of infection that can spread  Risk level 3: Widespread societal infection with potential too fast acceleration	<ul> <li>Evaluation of significant outbreaks.</li> <li>Incidence of COVID-19 per 100,000 population.</li> <li>COVID-19 test activity and positivity rate of tests.</li> <li>Age distribution.</li> <li>Outbreaks - numbers and size.</li> <li>Outbreaks among animals - number and size.</li> <li>Number of healthcare professionals infected.</li> <li>R-value.</li> <li>Number of admissions to hospital.</li> <li>Number of admissions to ICU.</li> <li>Regional 14-day projections of daily new cases.</li> </ul>	

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

	International frameworks for living with COVID-19 (extracted on 11 December 2020)				
Country	Risk level 4: Widespread societal infection and incipient pressure capacity of the hospitals.  Risk level 5: Widespread societal infection, and the healthcare system is under pressure and there is a risk that the treatment capacity at the hospitals will be exceeded.  Once a week, an assessment will be made of the level of risk for the whole country and the 5 regions. Each risk level will be accompanied by varying restrictive measures, with the least restrictive measures imposed under level 1 and the most restrictive measures imposed under level 5. The regions in Denmark may be at different levels of risk, and measures may be implemented geographically differently. The measures will depend on where in society the infection is and which measures the health authorities consider to be most effective.	<ul> <li>Projections of hospitalised COVID-19 patients.</li> <li>Outbreaks in nursing homes.</li> <li>Infection among persons related to mink.</li> <li>Behavioural data, e.g. for population compliance with the guidelines.</li> <li>COVID-19 related mortality and excess mortality figures.</li> </ul>			
France <sup>(111-114)</sup>	The French Government does not have a set framework of restrictions in place. On 28 Oct 2020, the President of the Republic took measures to reduce contact and travel throughout the country to a minimum by establishing confinement from 30 Oct to 1 Dec minimum.  During confinement, certain movements will remain authorized:  For health reasons, to go to the hospital or to buy drugs in a pharmacy on duty for example.  For professional reasons, if you work at night or your working hours do not allow you to be home at 9 p.m.  If you have a train or plane arriving or leaving after 9 p.m. you will need to be able to show your ticket if you are checked.  If you have to go to a loved one in a situation of dependency; - To take your pet out, near you.  During a confinement period, to leave after 9 p.m. you will need a certificate proving that you are answerable for one of the exceptions stated above.  *On 24 Nov, the President of the Republic announced an adaptation of the confinement from 28 Nov to 15 Dec. There are	<ul> <li>Active circulation of the virus based on the proportion of emergency room visits for suspected COVID-19.</li> <li>Pressure on hospital resuscitation capacity, based on the occupancy rates of resuscitation beds by patients with COVID-19, compared to the initial capacity before the epidemic.</li> <li>Pressure on intensive care capacity based on the occupancy rate of intensive care beds by COVID-19 patients compared to the initial intensive care capacity.</li> <li>Coverage rate for estimated testing needs.</li> <li>Epidemic activity:         <ul> <li>incidence rate: number of positive virological tests per 100,000 inhabitants per week.</li> <li>the positivity rate of virological tests.</li> <li>change in R0 (number of people infected by each patient).</li> </ul> </li> </ul>			

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in public health measures		
	plans to end confinement if sanitary conditions allow i.e. (there are less than 5,000 contaminations per day)			
Germany <sup>(115,</sup> 116)  Ireland <sup>(2, 117)</sup>	Germany currently does not have a set framework of restrictions in place. Restrictions are imposed or lifted in districts or towns depending on the cumulative 7-day total of COVID-19 cases in that area. Federal and state governments impose clamp-downs at local level to address any regional rise in numbers of new cases.  The framework that exists in Ireland consists of 5 levels:	Indicators taken into consideration when making decisions about restrictive measures include:  New cases per 100,000 population per week. R value. Intensive care capacities. Rates of recovery.  The following factors are also taken into consideration when making decisions about restrictive measures include:		
	<ul> <li>Level 1 (least restrictive)</li> <li>Level 2</li> <li>Level 3</li> <li>Level 4</li> <li>Level 5 (most restrictive)</li> </ul> The lower levels of the framework will be activated when there is low incidence of the disease, with isolated outbreaks, low community transmission. The higher levels will be used to deal with higher incidences of the disease. It is possible for different regions and counties to be at a different level to the national level, depending on the incidence of the virus in that particular region or county.	<ul> <li>The following factors are also taken into consideration when making decisions about whether to lift or re-impose restrictive measures: <ul> <li>The number, location and dispersion, and characteristics of cases and clusters, including the extent of secondary/tertiary spread.</li> <li>14-day and 7-day cumulative incidence, 5 day rolling average of cases by county and nationally.</li> <li>Indicators of viral transmission (including the number of cases, positivity rate(s) and titre production number).</li> <li>Incidence, protective and outbreak management capacity in at risk settings and vulnerable groups.</li> <li>The capacity and performance of the programme of sampling, testing, contact tracing and disease surveillance.</li> <li>The capacity and resilience of the health service in terms of <ul> <li>a. Hospital occupancy and new admissions</li> <li>b. Critical care occupancy and new admissions.</li> </ul> </li> <li>Numbers of deaths.</li> <li>Other measures including infection prevention and control data and uptake of seasonal flu vaccine and the international situation.</li> <li>These criteria will be considered collectively, in context and along with WHO and ECDC guidance to guide recommendations. A description of the combined trigger points for each level are explained in further detail in the Plan for Living with COVID-19 document referenced below.</li> </ul> </li> </ul>		
Italy <sup>(8, 118)</sup>	Regions across Italy are assigned either a yellow, orange or red colour depending on the level of COVID-19 risk associated with that area. The three risk area categories are as follows:  - Yellow risk area (moderate risk) - Orange risk area (medium-high risk) - Red risk area (high risk).	The new measures were taken following the analysis of epidemiological data on the spread of the epidemic. The following indicators are taken into consideration:  14-day incidence per 100,000.  Number of new cases reported in a week.  Source of cases and outbreaks.  Estimation of reproduction number.		

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in public health measures		
	The least severe restrictive measures are imposed on Yellow risk areas with the most severe restrictions imposed in regions imposed in Red risk areas.			
Netherlands <sup>(9)</sup>	Each week the coronavirus situation is assessed to see whether it is developing in a positive or negative direction. This assessment is carried out jointly by central government, the municipal health services (GGDs), the National Institute for Public Health and the Environment (RIVM) and the safety regions. The Minister of Health, Welfare and Sport then determines which risk level applies to each region.  Four levels of risk are:  • Level 1(Caution): The situation is manageable. The number of new infections is low. Vulnerable groups must remain alert, Contact tracing is largely effective. Measures are being sufficiently complied with and are enforceable. There is sufficient healthcare capacity. Any additional measures are designed to make the existing approach more effective.  • Level 2 (Concern): The situation is moving in a negative direction. The number of new infections is increasing. A tailored approach is needed to protect vulnerable groups. If the situation continues, contact tracing will become ineffective. Measures are not being sufficiently complied with. Pressure on healthcare capacity is increasing. The existing approach needs to be strengthened through additional measures to get the virus under control again and return to a manageable situation.  • Level 3 (Serious): Severe measures are needed to prevent further escalation and return to a manageable situation. The number of new infections is increasing rapidly. An intensive tailored approach is needed to	<ul> <li>A region's risk level is in principle raised from 'caution' to 'concern' if there are more than 50 positive tests per 100,000 inhabitants in 1 week. This means that the alert value of 7 positive tests per 100,000 inhabitants is exceeded each day.</li> <li>A region's risk level is in principle raised from 'concern' to 'serious' if there are more than 150 positive test results per 100,000 inhabitants in 1 week.</li> <li>A region's risk level is in principle raised from 'serious' to 'severe' if there are more than 250 positive test results per 100,000 inhabitants in 1 week. If the situation is 'severe' in multiple regions, the severest measures then apply to the whole country.</li> <li>Any decision to scale down the risk level in a region requires careful consideration of not only the number of new infections, but also healthcare capacity. It must be taken into consideration that even if the number of new infections falls, the healthcare sector may still be dealing with large numbers of patients recovering from COVID-19.</li> </ul>		
	protect vulnerable groups. Contact tracing is no longer effective, making it more difficult to keep track of how			

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

	nternational frameworks for living with COVID-19 (6	· · · · · · · · · · · · · · · · · · ·
Country	the virus is spreading. Measures are not being sufficiently complied with. There is insufficient healthcare capacity. Measures to be taken are designed to prevent regional healthcare from becoming overburdened and to be able to track the spread of the virus again.  • Level 4 (Severe): More severe national measures are needed to prevent further escalation and return to a manageable situation. A very large number of people are infectious and the number of new infections is high. Contact tracing is no longer effective, meaning there is limited insight into how the virus is carreading.	Triggers to inform a change in public health measures
	limited insight into how the virus is spreading.  Measures are not being sufficiently complied with.  Regional healthcare capacity is insufficient and some kinds of regular healthcare have already been scaled down. Measures to be taken are designed to prevent national and regional healthcare from becoming overburdened and to regain max control of the virus.  Central government and/or the safety region in question will take appropriate measures based on the risk level. Measures depend on the local situation and may therefore vary from	
Portugal <sup>(31,</sup> 119)	region to region.  From 00:00 on 24 Nov 2020 Municipalities will be assigned one of the below levels of risk depending on the epidemiological situation in each municipality:  • Moderate: Municipalities with less than 240 cases per 100,000 inhabitants in the last 14 days;  • High: Municipalities with a number of cases between 240 and 479 per 100,000 inhabitants in the last 14 days;  • Very high: Municipalities with a number of cases between 480 and 959 per 100,000 inhabitants in the last 14 days;  • Extremely high: Municipalities with more than 960 cases per 100,000 inhabitants in the last 14 days.	Exceptional measures are currently in place in 121 municipalities. The decision on which municipalities would be covered by the new measures was based on three criteria: i) 240 new cases per 100,000 inhabitants in the last 14 days; ii) proximity to another municipality that fulfils the first criterion; and iii) not considering outbreaks in low-density counties.

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in	public health	measures	
	The most restrictive measures will be implemented in municipalities associated with 'extremely high' risk, with the least restrictive measures implemented in municipalities with 'moderate' risk.				
Spain <sup>(10, 120)</sup>	The indicators for risk assessment detailed in Table A will be taken into consideration when deciding what territories fall into each level of risk.	Table A: Indicators for risk			
		BLOCK I: Evalua	ation of the tr	ansmission leve	el
	Alert level 1: When at least two indicators from block I and	Indicators for alert levels	Low	Medium	High
	one from block II are at low level  Alert level 2: When at least two indicators from block I and	Incidence accumulated cases diagnosed in 14 days	>25 to ≤50	> 50 to ≤150	> 150 to ≤250
	one from block II they are in the middle level  Alert level 3: When at least two indicators from block I and	Incidence accumulated cases in 7 days	> 10 to ≤25	> 25 to ≤75	> 75 to ≤125
	one from block II are at high level <b>Alert level 4</b> : When at least two indicators from block I and one from block II they are at a very high level	Incidence accumulated cases 65 or over diagnosed in 14 days	> 20 to ≤50	> 50 to ≤100	> 100 to ≤150
	From block I, only one of the two general indicators of the	Incidence accumulated cases 65 or over diagnosed in 7 days	> 10 to ≤25	> 25 to ≤50	> 50 to ≤75
	accumulated incidence will be taken into account, both for global AI and incidence in> 65 years: if there is no delay in notification, AI will be used in 7 days and otherwise, 14 days.	Global positivity of PDIA by week	> 4% to ≤7%	> 7% to ≤10%	> 10% to ≤15%
The indicators for risk assessment detailed in Table 1 will be taken into consideration when deciding what territories fall into	Percentage of cases with traceability	≤80% to> 65%	≤65% to> 50%	≤50% to> 30%	
	each level of risk. The most restrictive measures will be imposed in areas associated with the most risk.	BLOCK II: Level of use of healthcare services due to COVID-19			
		Occupation of beds of hospitalization for COVID-19 cases	> 2% to ≤5%	> 5% to ≤10%	> 10% to ≤15%
		Occupation of care beds critical for cases of COVID-19	> 5% to ≤10%	> 10% to ≤15%	> 15% to ≤25%
		In these cases of small territories, the following factors will also be ta - The number, trend and speed of 14 days - The proportion of new cases asso	ken into consid change of the o	leration: cases diagnosed in	•

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19 (extracted on 11 December 2020)  Framework for living with COVID-19  Triggers to inform a change in public health measures			
Country	Framework for fiving with COVID-19	- The secondary attack rate		
		- The existence of hot spots (due to the number of outbreaks, their characteristics and their control situation; to the affectation of socio-sanitary residences or populations especially vulnerable).		
Sweden <sup>(121)</sup>	The Swedish Government does not have a set framework of restrictions in place. The strategy for handling the virus is for the measures taken to be based on science and tried and tested experience, and the right measures being taken at the right time. Upholding this strategy involves re-examining the measures on an ongoing basis based on the science available and the situation in terms of the spread of infection.	The starting point has been that the measures taken to reduce the spread of infection are to be characterised by persistence and participation, taking into account the effects on society and public health in general. Cooperation within the EU and other international cooperation is to be fostered.		
England <sup>(7, 122,</sup> 123)	The UK have been using a three tiered system of restrictive measures.  The three Local COVID-19 Alert levels include:  Alert Level- Medium  Alert Level- High  Alert Level- Very High  Alert levels are assigned to different regions depending on the prevalence of COVID-19 in that area. With this, the most restrictive measures are imposed in areas with very high levels of infections and measures considered to be least restrictive imposed in areas where infections rates are low.  *it must be noted that on 5 Nov a new set of national restrictions replaced the Local COVID-19 Alert Level measures. The new measures will apply nationally for four weeks up to and including 2 Dec. At the end of that period, the UK will return to a regional approach, based on the latest data.  On 2 Dec 2020 the UK will return to their 'three tiered system', however the restrictive measures under each of these tiers have been altered. On the 26 Nov 2020 the UK government will announce which areas are in which tier.	The UK looks at the estimate of R and growth rate along with other key statistics when determining what level of restrictive measures to implement. Other key statistics include:  - number of new infections of the disease identifies during a specific time period (incidence)  - proportion of the population that test positive for the disease in the community at any given point in time (positivity rate or prevalence)  - data on testing, cases, healthcare and deaths.		
Northern Ireland <sup>(124-126)</sup>	The Northern Ireland Executive does not have a set framework of restrictions in place. A number of measures commonly referred to as 'circuit breakers' were implemented on 27 Nov 2020 and will be in place until 10 Dec 2020.	Following an increase in coronavirus (COVID-19) cases, additional restrictive measures are implemented for people living in Northern Ireland. These restrictions are put in place to help reduce the spread of coronavirus and to help manage the pressures on our health and social care system.		

**Table B.1** International frameworks for living with COVID-19 (extracted on 11 December 2020)

Country	Framework for living with COVID-19	Triggers to inform a change in public health measures		
		The reproductive number (R) helps inform decision making with regard to social distancing and other restrictions. The Executive has indicated that keeping R below 1 is a key objective.		
Scotland <sup>(11,</sup> 127)	Scotland has a 5 level protection plan in place. The COVID protection level (sometimes known as tiers or tier system) sets out measures that can be applied nationally or locally depending on prevalence of the virus across Scotland. Each area has a COVID protection level. There are 5 different levels starting from 0 to 4. The level associated with the lowest risk is 0 level 4 is associated with the highest risk.	The protection levels are reviewed weekly. The following factors are taken into consideration when deciding what level of restrictions should be implemented in each region:  a) the number of cases per 100,000 people over the past 7 days		
Wales <sup>(14, 128,</sup> 129)	The Welsh Government does not have a set framework of restrictions in place. Planned short stay at home measures (2-3 weeks) commonly referred to as 'circuit' or 'firebreaker' measures are often implemented to combat surges in COVID-19 cases. Extra measures will be put in place from 4 Dec 2020 to accommodate for the lifting of some restrictive measures during the Christmas period between the 23 and 27 Dec.	Circuit breaker indicators include:  Community transmission  The upper limit of the range of R values for Wales reaches or exceeds 1.5  >40 Cases per 100,000 Positivity rate >5%  Hospital activity		
		<ul> <li>Total hospital bed occupancy for confirmed COVID-19 patients reaches or exceeds 500</li> <li>Critical care occupancy for confirmed COVID-19 patients reaches or exceeds 70</li> <li>The total critical care bed occupancy (for COVID and non COVID patients) is above 150</li> </ul>		
Switzerland <sup>(13</sup>	The Swiss Government does not have a set framework of restrictions in place.	<ul> <li>The number of cases of people infected with the virus</li> <li>The number of people requiring hospital treatment</li> </ul>		

### **Appendix C – International testing strategies**

	1 International strategies for the detection of current infection with SARS-CoV-2 (extracted on 11 December 2020)				
Country	Testing strategy	Expanded use of testing (e.g.,	Use of rapid or near-patient testing (for	Population-wide testing	
. (22.40		screening)	the detection of current infection)		
Austria <sup>(22, 48,</sup>	Testing strategy consists of	Screening of staff in RCFs and high	Rapid antigen for	Population-wide voluntary testing was	
151)	two main pillars:	risk healthcare settings.	1. Symptomatic at GPs, hospitals pre-	carried out in the federal states of	
	Test symptomatic	Target group-specific screening for	admissions and outpatient departments,	Vorarlberg and Tyrol as well as the	
	individuals and contacts;	high risk settings.	RCFs and schools.	federal capital Vienna Austria. While	
	2. Test asymptomatic	Screening of new and returning	2. Asymptomatic individuals in outbreak	other federal states will begin at	
	individuals as part of screening	residents and visitors to RCFs.	management. All positives results	different dates in December. All	
	programs	Epidemiological situation in Austria.	followed up by PCT test, with the	positive tests followed up with PCR	
		Several studies are currently	exception of symptomatic close contacts.	test, the person concerned will be	
		running on screenings for SARS-		officially segregated and retested	
		CoV-2-specific antibodies.	All workers in Lower Austria offered free	within 24 hours. If confirmed by the	
			rapid antigen tests with mobile testing	PCR test, the immediate official	
			team on site at companies with more	separation of the contact persons of	
			than 100 employees.	the past 48 hours takes place.	
			Large-scale rapid testing of all state and		
			federal teachers and kindergarten	All citizens of school age and older and	
			supervisors and 40,000 police officers	people who are in Austria for work or	
			conducted on a voluntary basis in	study can participate. Each person is	
			November. Large scale population-wide	tested once as part of this first	
			rapid testing offered in all states during	Austria-wide test programme.	
			December on a voluntary basis. All		
			positive tests followed up with PCR test		
			at the same test location.		
Belgium <sup>(132-</sup>	Laboratories prioritise samples	Screening of new residents in RCFs,	Rapid antigen tests can be used for:	None underway.	
154)	for testing:	new residents with a risk profile in	1. Symptomatic individuals with		
	1. Symptomatic patients, with	other care institutions, and	symptoms for ≤ 5 days presenting at	Preventative testing in local	
	particular attention to critically	hospitalised persons.	emergency services; hospitals; triage and	communities is "not recommended and	
	ill patients, health	Screening of all asymptomatic	collection centres; GP practices.	not reimbursable" in all three phases	
	professionals and people over	people following high-risk contact	2. Asymptomatic individuals, in the	of the pandemic (pre-alarm, alarm and	
	65 years of age and suffering	and certain people returning from	context of cluster research (≥2 cases) in	epidemic).	
	from co-morbidities	red zones identified based a self-	group settings with a low-risk profile (not		
	2. Clusters/homes within	assessment tool.	RCFs): essential services, e.g. police, fire		
	communities, both within and	Pooling of samples can be used for	brigade etc.; education, childcare, youth		
	outside care institutions	screening of large asymptomatic	assistance; essential sectors and		
	3. Screening new residents in	populations expected to have a low	companies. All positive test result		
	RCFs; new residents with a	prevalence.	followed up with PCR test.		

**Table C.1** International strategies for the detection of current infection with SARS-CoV-2 (extracted on 11 December 2020)

Country	Testing strategy	Expanded use of testing (e.g.,	Use of rapid or near-patient testing (for	Population-wide testing
		screening)	the detection of current infection)	
Czechia <sup>(33, 69,</sup>	risk profile (over 65 years of age or co-morbidities) in other care institutions; and hospitalised persons.  Testing is provided for	A large-scale pilot has begun investigating whether weekly PCR screening using morning saliva on all staff can effectively prevent outbreaks in non-infected RCFs. In Antwerp, saliva PCR tests are being compared with deep-nose PCR tests in secondary schools.  Screening of all staff and residents	A pilot project planned to evaluate the use of antigen tests in the context of cluster investigation in RCFs. A pilot project will be launched in Flanders in the coming weeks into the use of rapid tests for the testing of high-risk contacts in schools at the start of their quarantine.  Rapid antigen tests are being used to	On 20 October, it was announced that
135, 136)	symptomatic individuals and close contacts, as well as highrisk groups (e.g., patients with hemato-oncological diseases, patients with decompensated diabetes, hypertension, heart or lung diseases).	of LTCFs, as well as social service providers and outpatient departments at least once every 7 days.  Screening of all visitors upon arrival to LTCF.	screen staff and residents in LTCFs and outpatient facilities. Screening is performed by a medical professional and all positive results with no symptoms or negative results and symptoms followed up by PCR test.  Screening of visitors to LTCFs using rapid antigen (not required for visitors with positive PCR result within 90 days).  Rapid antigen tests available for teaching staff on a voluntary basis from 4 to the 18 Dec as students gradually return to school.	close-to-blanket testing might be launched if rapid antigen tests can detect infection with high enough reliability.
Denmark <sup>(34,</sup> 55, 65, 137, 138)	All citizens aged 2 and over can request a PCR test. Priority is given to symptomatic individuals in need of medical attention, close contacts of confirmed cases, and residents/patients and staff in healthcare facilities.	Regular testing of staff in nursing homes, in home care and regional staff with patient and resident contact. Upon entry as hospital inpatient. Mobile testing units available for asymptomatic including specific groups, e.g., in nursing homes, schools, etc. Household members of people working on a mink farm. Epi surveillance, testing of staff in regions of high infection levels, requests of individual citizens.	Rapid antigen testing can be used in situations that meet the following 2 criteria:  selective situations, such as workplaces and other non-healthcare settings as a preventative measure  selective urgent situations where simultaneous PCR testing must also be performed, such as patients presenting at admission with symptoms that are compatible with COVID-19 so that relevant treatment can be initiated or for outbreak	None underway.

Country	Testing strategy	Expanded use of testing (e.g.,	Use of rapid or near-patient testing (for	Population-wide testing
		screening)	the detection of current infection)	
			managements in a RCF or other	
			LTCFs to screen residents and	
			staff for an immediate decision	
			to initiate cohort isolation, and	
			at airports screening individuals	
			who do not present a negative	
			PCR test at entry. Negative test	
			result followed by a PCR test	
			immediately after entry while	
			self-isolating until negative PCR	
			test result.	
			If antigen testing is used outside of	
			screening scenarios, a negative test	
			result should always be followed up with	
			a PCR test. Not allowed for use in testing	
			relatives of particularly vulnerable people	
			prior to visiting, for example screening	
			RCF visitors.	
France(35, 57,	Anyone in France can request	Individuals considered medically	Rapid antigen for:	The French region of Auvergne Rhône-
63, 86, 139)	a PCR test free of charge.	vulnerable.	1. Symptomatic individuals ≤ 4 days.	Alpes is set to carry out mass COVID-
	Priority is given to	Individuals who live in areas with	Positive results for individuals aged 65 or	19 testing in the run-up to Christmas.
	symptomatic individuals, close	high transmission rates.	over and people who present with at	
	contacts, and nursing or	Residents of LTCFs and other high	least one risk factor, as defined by the	
	similar staff.	risk settings in the event of the first	High Council of Public Health, must be	
		confirmed case.	followed up with PCR test.	
		Territories identified as vulnerable	2. Asymptomatic individuals when they	
		because of their density or the	are contacts detected individually or	
		distance from access to care.	within a cluster, screening RCF, and as	
			part of a diagnostic process, if the	
			professional considers it necessary.	
			Antigenic tests are not intended for	
			contact persons.	
			Rapid antigen tests are used as part of	
			targeted screening when there is a risk of	
			increased transmission (e.g. LTCF, high	
			schools and universities, factories,	

			ection with SARS-CoV-2 (extracted	
Country	Testing strategy	Expanded use of testing (e.g., screening)	Use of rapid or near-patient testing (for the detection of current infection)	Population-wide testing
		oci coming)	collective accommodation, etc.). Self-tests are not allowed.	
Germany <sup>(36,</sup> 140, 141)	Testing is provided to symptomatic individuals and asymptomatic persons with criteria of exposure or disposition e.g. close contacts or confirmed SARS-CoV-2 infection in facilities. Priority is given to vulnerable groups and their carers, HCWs, and specific close contacts.	Residents and patients before (re)admission to hospitals, LTCFs, and other care facilities. Residents, carers, patients, possibly visitors and all staff at facility with a confirmed case. Staff at hospitals and other facilities (residential and non-residential LTCF) undergo random testing independent of cases and up to once a week in areas with an increased incidence (e.g. 7-day incidence> 50 / 100,000). Staff at medical and dental practices with an increased incidence (as above) Epidemic regions with an increased incidence (as above). People in community facilities and communal accommodation (e.g. doctors' practices, schools, etc.) where a case has emerged.	Rapid antigen tests can be used for staff at all care facilities without a COVID case or residents, carers, patients, possibly visitors and all staff at facility with a confirmed case only when PCR is not available.  In the case of increased regional incidence (e.g. 7-day incidence > 50 / 100,000), weekly random testing of inpatients/residents once admitted, and for visitors to a care facility (excluding RCFs).  Other exceptional cases:  - when PCR is not available or there is an urgency, and  - only for use in people for whom a false negative result does not lead to serious consequences (e.g., an undetected entry of an infection upon admission to a hospital). All positive results must be followed up with PCR test.	None underway.
Ireland <sup>(37, 117,</sup> 142-144)	Testing is provided to symptomatic individuals and close contacts with a confirmed case (including asymptomatic close contacts).	Serial testing of all staff in nursing homes is undertaken every two weeks. Serial testing of all primary and secondary meat processing facilities is currently paused. Previous serial testing programmes included residents of direct provision centres.	Rapid molecular testing, using RT-PCR, has been widely deployed in hospital laboratory settings. Adoption of such tests has been contingent on completion of validation testing.  Alternative molecular testing approaches and RADT have not as yet been deployed as part of the publicly funded national testing strategy.	None underway.
Italy <sup>(8, 38, 71)</sup>	Regions and autonomous provinces are responsible for their own approach to testing as per the "Relaunch Decree" 19 May 2020. However, the	Molecular and rapid antigen test for vulnerable patients/residents and staff in high-risk healthcare settings.	Rapid antigen testing considered an acceptable option in contact tracing (although PCR remains first line) and rapid salivary tests (antigenic or molecular) are being evaluated.	None underway.  Provincial-level screening expanded to include voluntary targeted antigen testing of randomly selected

Country	Testing strategy	Expanded use of testing (e.g., screening)	Use of rapid or near-patient testing (for the detection of current infection)	Population-wide testing
	Ministry for Health issues guidance which recommends testing symptomatic individuals and close contacts of confirmed cases.		Rapid antigen is currently being used in screening situations e.g. schools and airports. Rapid antigen is use in provincial screening campaigns in South Tyrol.	subgroups, once a week for 4 weeks, and a representative sample of the South Tyrol population.
Netherlands <sup>(</sup> 39, 58, 66, 70, 145, 146)	Testing is provided to symptomatic individuals and close contacts and household members of a confirmed case. Priority given for specific patients in higher-risk groups and HCW who are caring for vulnerable groups.	Admissions and discharge from a healthcare setting. Staff in key industries, sports participants and for attendance to events, and expanded testing to include home sampling kits.	Molecular point-of-care (mPOCT) tests are being used for emergency diagnostics and for locations that do not have a routine molecular diagnostic laboratory dispose.  Research on the use of rapid antigen tests is ongoing but not enough is currently known about the performance of these test.  The LAMP test and 'breath test' also currently being tested by the Public Health Service of Amsterdam.	None underway.  Large-scale testing pilots to begin in January with the aim to expand the programme to population-wide screening on a monthly basis from March 2021.
Portugal <sup>(40,</sup> 147)	Tests are provided for symptomatic individuals and for asymptomatic close contacts of confirmed cases.	Asymptomatic individuals with highrisk contact may be screened. PCR is preferred for the testing of asymptomatic individuals who have had high risk contact. However, rapid antigen may also be used. Before carrying out aerosolgenerating procedures. Before admission as inpatient to hospital, as a resident to a LTCF and for pregnant women for childbirth assistance. In HCWs who provide direct health care and with a higher risk of contagion, appropriate to the context of each service / institution and according to the level of exposure of professionals.	Rapid antigen tests when PCR not available and used in the first 5 days (inclusive) of symptom onset.  They should be used when PCR tests are not available for timely diagnosis, screening.  Rapid antigen tests preferred in an outbreak situation (such as schools, educational establishments, LTCFs and similar or closed institutions).	None underway.  Conducting seroprevalence studies in samples of the population.
Spain <sup>(41, 80)</sup>	Any person with suspected SARS-CoV-2 infection should	Screening of asymptomatic individuals in certain circumstances	Rapid antigen tests approved for widespread use. Test must have	The National Strategy does contain considerations for population-wide

			ection with SARS-CoV-2 (extracted	
Country	Testing strategy	Expanded use of testing (e.g., screening)	Use of rapid or near-patient testing (for the detection of current infection)	Population-wide testing
	receive a diagnostic test for active SARS-CoV-2 infection in the first 24 hours. The type of test (PCR or Antigen) used depends on a number of criteria: disease severity; availability of resources; speed at which the results are needed.	(e.g., workers or residents in LTCFs; new admissions to health or social health centres; population subgroup Epi studies). PCR is preferred (pooled if possible); however, rapid antigen represents an acceptable alternative. All positive antigen test results followed up with PCR test.	sensitivity >80% and specificity > 97%, must meet WHO criteria and have undergone independent validation studies.  Negative Transcription-Mediated Amplification (TMA) test result, within 72 hours of arrival, is acceptable in absence of negative PCR test result for inbound passengers from high-risk countries.	testing. However, the autonomous nature of various regions in Spain makes a nation-wide screening programme unlikely.  Ongoing studies as part of the National Study of SARS-CoV2 sero-prevalence Epidemiology in Spain.
Sweden <sup>(42, 64, 148-150)</sup>	Testing is provided to symptomatic individuals and contacts. Prioritisation is given to patients, persons with risk factors and persons in long-term care, health and medical staff, personnel in other socially important activities, and individuals in other relevant parts of society to enable the return to work more quickly.	Sentinel sampling in nursing homes from patients with flu-like illness every week include COVID PCR test and is reported to the Swedish Public Health Agency for analysis. At admission and readmission to a RCF.  Stockholm region offers tests for antibodies and tests for ongoing disease to all citizens. Several other regions are doing the same.  Dalarna and Gotland regions has introduced PCR self-sampling to increase testing capacity.	Antigen test can be used for symptomatic patient, ≤ 5 days from symptom onset when there is a need for increased test capacity or quick result, and primarily for contact tracing investigation and for people who are not in need of hospital care (e.g. primary care, outpatient or RCF). All positive test results followed up by PCR test.	None underway  Ongoing Epi PCR and sero prevalent studies within the general population and within specific areas (regions and municipalities).
England <sup>(43, 52, 56, 151-153)</sup>	Focus is on symptomatic testing with priority to vulnerable groups, staff and residents in RCF, then personnel from industries critical to society.	NHS patient-facing staff, RCF staff and other high risk care and supported living staff tested twice a week and residents once a week. All staff at food manufacturing plants weekly, closed settings such as prisons weekly testing for staff and prisoners, and staff at other critical functions weekly. Regular testing will be offered to up to 2 family members or friends per resident in LTCFs with negative results allowing physical contact with family member. The community testing programme	Rapid molecular tests are being used in certain clinical settings to support urgent clinical assessment/diagnosis, for example. Rapid test streams for frontline staff across the health system and for residents in LTCFs and other congressional settings. Rapid antigen tests are also being used for large-scale community testing as part of a pilot mass testing programme in Liverpool. Rapid testing for workers in high-risk or critical settings. Tests on saliva are being trialled. Two	No population wide testing

			ection with SARS-CoV-2 (extracted	
Country	Testing strategy	Expanded use of testing (e.g., screening)	Use of rapid or near-patient testing (for the detection of current infection)	Population-wide testing
		for tier 3 areas consisting of a six	walk-in centres have opened in Luton to	
		week testing surge which includes	offer a rapid lateral flow test with results	
		home sample kits and rapid antigen	available within 45 minutes. A third test	
		tests to the general population as	centre will open on 21 Dec.	
		well as targeting high-risk	'	
		workplaces and industries, hard-to-		
		reach communities and schools.		
		Pilot begun for cohort pooled		
		testing of university students using		
		self-sampling lateral flow tests in		
		England, Northern Ireland, Scotland		
		and Wales (groups of 5 or household).		
		Plans to rapid testing for specific		
		one-off events.		
		Plans to introduce frequent testing		
		as an alternative to the need for		
		self-isolation for people who have		
		had close contact with someone		
		who has COVID-19.		
Northern	Testing is provided for	RCF with outbreak free status: test	Pilot in progress using lateral flow test as	No population wide testing
Ireland <sup>(44, 49,</sup> 56, 75)	symptomatic individuals,	all asymptomatic residents every 28	part of the larger mass testing pilots in	
. ,	screening programmes and	days and all asymptomatic staff	67 local authorities in the UK.	
	outbreaks.	testing every 7 days.	Overage University in Belfort has	
		Pilot in progress for cohort pooled testing of university students using	Queen's University in Belfast has launched a rapid Covid-19 testing	
		self-sampling lateral flow tests in	programme for students. All positive test	
		England, Northern Ireland, Scotland	results followed up with PCR test.	
		and Wales (groups of 5 or	results removed up man rest test.	
		household).		
Scotland <sup>(45,</sup>	Scotland's Testing Strategy	Weekly testing of HCWs in specialist	Community testing pilot on general	No population wide testing
51, 56)	prioritises PCR tests:	oncology wards, elderly wards, and	population is being conducted in five high	
	1)Symptomatic individuals	mental health facilities.	incidence areas hotspots using lateral	
	2) Testing contacts and testing	All asymptomatic HCW in hospitals	flow test as part of the larger UK mass	
	in outbreaks	are tested where there is an	testing pilots in 67 local authorities.	
	3) Vulnerable and preventing	outbreak in a previously COVID-free	Testing of Scotland's university students using 2 self-sampling lateral flow tests.	
	outbreaks in high risk settings 4) All ICU patients and all	ward. RCF staff tested fortnightly. If	All positive test results followed up with	
	T) All ICO patients and all	NCI Stail tested for triightiy. If	All positive test results followed up with	

			ection with SARS-CoV-2 (extracted	
Country	Testing strategy	Expanded use of testing (e.g., screening)	Use of rapid or near-patient testing (for the detection of current infection)	Population-wide testing
	symptomatic patients admitted to hospital have been tested	suspected case of COVID-19 then all residents and staff are tested. Cohort pooled testing of university students using self-sampling lateral flow tests in England, Northern Ireland, Scotland and Wales in early December (groups of 5 or household).	PCR test. Pilot in progress using lateral flow testing to expand testing to include care home visitors. Currently this is aimed at designated visitors i.e. a family member or friend chosen by the resident to visit them indoors.	
Wales <sup>(46, 50, 59, 154, 155)</sup>	Testing focused on symptomatic individuals.	Screening of asymptomatic individuals for contact tracing and targeted action through local outbreaks in communities or within businesses. For healthcare delivery: All hospital admissions including emergency and at discharge to RCF. Elective admissions when prevalence in the community is high. Outpatients / diagnostic interventions based on patient and procedural risk. Routinely and strategically test asymptomatic of HCWs. Antibody tests are used on HCWs for surveillance. Pilot planned for cohort pooled testing of university students using self-sampling lateral flow tests in England, Northern Ireland, Scotland and Wales in early December (groups of 5 or household).	Pilot is being conducted using lateral flow test which is part of the larger mass testing pilots in 67 local authorities in the UK.  From 14 Dec, twice weekly lateral flow testing will be conducted on frontline health and social care workers and non-clinical staff.	No population wide testing
Switzerland <sup>(</sup> 18, 47, 130)	Testing is provided to symptomatic individuals, critical personnel (regular testing), and selective contacts that have been exposed to the virus.  Variations may exist across the cantons.	Regular testing of critical personnel.	Rapid antigen tests for symptomatic individuals (<4 days from onset). Excluding vulnerable groups, frontline HCWs and at outpatient settings.	None underway

# **Appendix D – International contact tracing strategies**

**Table D.1** An overview of international contact tracing strategies (extracted on 11 December 2020)

Country	Contact tracing	Method(s) of tracing	ing strategies (extracted or	Duration of contact	Use of a mobile application
•	approach			tracing	
Austria <sup>(29,</sup> 90)	National approach organised by local health office/authority.	Unclear however: Contacts are recorded by name, collection of telephone number, email address, place of work, Employment and living conditions. Letters are also posted to contacts containing information and guidance.	All "contact persons" traced but categorised according to risk into Cat 1 or Cat 2 - different response to each Cat 1 = people with high risk exposure for example:  i) Persons * who cumulatively for 15 minutes or more at a distance of ≤2 meters, had faceto-face contact with a confirmed case (esp. Household contacts).  ii) People * who are in the same room (e.g. classroom, meeting room, rooms in a healthcare facility) with a confirmed case at a distance of ≤ 2Meters for 15 minutes or more.  iii) People with the following types of contact on the plane or other long-distance means of transport such as coach or train  -Passengers who were seat neighbours of the confirmed case, independently from the travel time. If the confirmed case sat in an aisle seat, that counts passengers in the same row across the aisle not as a category II contact person.  -Crew members or other	Up to 48 hours before symptom onset to 10 days after positive sample was taken.	Stop Corona creates an automatic connection with users that have been closer than two metres for longer than 15 minutes. In the event of a COVID-19 infection, the app contacts all users that have been in proximity to the infected person for a longer period of time. The alerted users must then monitor their own health and maintain distance to others. The app has two alert levels. A yellow alert shows that someone you have been in contact with has developed coronavirus symptoms. The red alert means that someone you have been in close contact with (less than two metres) for longer than 15 minutes has tested positive.

			passengers, provided that the confirmed if one of the other criteria applies (e.g. lengthy conversation; or similar).		
			Cat 2 = contact persons with low Risk exposure(i.e. contact person with low risk of infection), defined as Persons who cumulatively for less than 15 minutes at a distance of ≤2 meters had face-to-face contact with a confirmed case or people which are in the same room (e.g. classroom, meeting room, rooms of a Healthcare facility) with a confirmed case at a distance > 2 meters for 15 minutes or longer or at a distance of ≤ 2 meters for less than 15 minutes		
			People who are on the same aircraft or other long-distance means of transport as stopping a coach or train like a confirmed case:- Passengers who are in the same row as the confirmed case or who had sat rows in		
			front of or behind it, regardless of the travel time, but do not fall under Category I		
Belgium <sup>(79,</sup> 156, 157)	Decentralised approach - responsibility at regional level. Contact	Monitoring at the individual level was delegated to an external operator via public contract. Since 11 May	"People you met from two days before you had symptoms."  Appear to be contacting both	Up to two days before symptom onset.	Coronalert uses technology (Bluetooth Low Energy) to register how long your smartphone has been in the vicinity of another
	tracing only appears to be used when cases are low. In some cases, contact tracing	2020, it is the Autonomous Mutualities group, itself associated with specialized operators, which has	higher risk and lower risk through "manual" contact tracing. Different course of action depending on high vs low		smartphone. If you were only six feet or less away for about 15 minutes or more, you may have had a high-risk contact. You will

Constitution (SS)	is delegated to external operators via public contracts	operationalized this call centre (this is within the Wallonia region at least). Uncertain if contact tracing is conducted in the same way in all regions. The Ministry for the German speaking community may have their own CT The staff member of the authorities may contact individuals in different ways: by phone via 02/214.19.19, by mail, email, or SMS via the number 8811. If contacts do not respond to the calls, a staff member may call to their home.	Contact of >15 mins at less than 1.5m is considered high risk.		then receive an anonymous warning when the other person tests positive for the corona virus. The registration via Coronalert does not take into account possible extra protection such as mouth masks, plexiglass, and hand hygiene.
Czechia <sup>(88)</sup>	National approach - Smart Quarantine 2.0 (a tech-based system).	A tech-based contact tracing system, operated by the army, regional public health authorities (or "hygiene stations") and overseen by the Prime Minister.	Contact tracing more IT focused - utilises a combination of card payment data, mobile location data from mobile operators and tracing app data  However, also undertake manual contact tracing.  Employ ECDC definition of contacts.	A person who learns that he has contracted COVID-19 is contacted by the regional hygiene station to identify, as well as a hygienist, as many risk contacts as possible in the last 5 days.	eRouška (eMask) is being used in conjunction with other technologies (e.g., card payment information data) to support contact tracing.
Denmark <sup>(8</sup> 9, 108, 158)	National approach - Coronaopsporing "Corona Detection" body	If you are a close contact of someone infected with novel coronavirus, you can expect a call from Coronaopsporing or from the person who might have infected you. You may also be informed via the contact tracing app, smitte stop in which case you must call tel. 70 20 02	Close contacts defined as a person who lives with a COVID-19 infected person; has had direct physical contact with an infected person; has been face-to-face within 1 meter for more than 15 minutes (e.g., in conversation) with an infected person has been in unprotected and direct contact with infectious secretions from an	Infected person with symptoms: Up to 48 hours before symptom onset until 48 hours after the symptoms have ceased.  Infected person without symptoms: From 48 hours before	Smittlestop: Using the app is voluntary, and it may be downloaded for free. The app relies on Bluetooth technology and Google's and Apple's technology for decentralized tracing of contacts (Exposure Notification, ENF). The app logs every device for everyone who has downloaded the app and whose Bluetooth connection has been nearby. This

		Coronaopsporing (Corona Tracking) is a division of the Danish Patient Safety Authority.  Individuals who test positive also have the option of contacting their own close contacts.	infected person; has participated in the care of a patient with COVID-19 and has not been used by protective equipment in the prescribed ways.  24 Nov Close Contacts redefined:  "In future, you will also be defined as close contact if you have stayed within 2 meters for more than 15 minutes with a person infected with new coronavirus in situations where singing, talking loudly or shouting, or if you have stayed in an enclosed space without ventilation or with poor ventilation".	the person was tested and until 7 days after.  Includes general recommendation that all close contacts are tested twice.	data is stored on the mobile device; it is not reported to other databases. A person who wants to self-report that they are COVID-19-positive must log-in on the app by way of 'NemID', a Danish common secure login on the Internet, whereupon the diagnosis is validated in the National Patient Registry. If the person is registered with a diagnosis of COVID-19, the patient will be asked whether he/she has symptoms of COVID-19, when the symptoms started, and whether the patient wants to share the information. If so, devices which have been closer than one meter to the device, for more than 15 minutes within the latest 14 days are notified. Neither the patient, nor the citizens, receive information about each other's identity.
France <sup>(86,</sup> 159)	National approach (Test-Alert-Protect), although no single body is responsible for contact tracing. Regional health agencies, in conjunction with Public Health France, manage situations relating to complex transmission chains or clusters	Attending physicians and health insurance companies manually trace contacts. Other professionals also involved: "COVID Contact": It is a digital tool used by all health professionals (doctors, pharmacists, biologists in COVID screening laboratories, and professionals authorized by the CNAM, SpF and ARS), which helps to take in charge of COVID-19 cases. It allows us to go as quickly as possible in the	"Contact persons" defined as  Risk contact: any person- Having shared the same place of life as the confirmed or probable case;- Having had direct contact with a case, face-to-face, less than 1 meter, regardless of the duration (excluding conversation, meal, flirtation, hugs, hugs). On the other hand, people crossed in the public space fleetingly, even without wearing a mask, are not considered to be persons-risky contacts;- Having provided or received acts of hygiene or	From 48 hours before the onset of symptoms until the person has isolated themselves.	Tousanticovid is a bluetooth-based app that notifies people who have been in the vicinity of someone diagnosed positive so that they can be taken care of as soon as possible. It is an additional barrier gesture based on volunteering that we activate at all times  TousAntiCovid has a complementary role. The objective is twofold: Save time by identifying contact cases more quickly, which will also be identified by surveys carried out by doctors and by the Health Insurance.

Regional health agencies, in conjunction with Public Health France, are responsible for managing situations relating to more complex transmission chains or clusters. They will be able to call on mobile teams, in particular in the event of grouped transmissions or audiences far from the health system.	The doctor who established the diagnosis identifies the "contact cases" within the family home and assesses, on this occasion, the patient's ability to achieve isolation at home;  The management platforms operated by the Health Insurance, open 7 days a week, identify "contact cases" outside the home;	identification of contact persons around a COVID-19 case. It makes it possible to verify that everyone has been called, informed, tested, and supported.  In order to fight against the COVID-19 epidemic, the identification of contact subjects is ensured at three levels:    Care;- Having shared a confined space (office or meeting room, personal vehicle, etc.) for at least 15consecutive or cumulative minutes over 24 hours with a case or having remained face-to-face with a case for several episodes of coughing or sneezing;    Be able to alert contacts that people do not know (people crossed in public transport or in the supermarket for example).
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Germany <sup>(8</sup>	Decentralised	Mixture of public health	3 types of contact person.	Unclear but may be up	CoronaWarn supplements existing
2, 160)	approach -	employees, redeployed	Prioritise contacting cat 1 > cat	to two weeks.	CT approach rather than replacing
_,,	responsibility at	civil servants and newly	2 > cat 3.	to two weeks.	it.
			2 > Cdl 3.	Fau aumentamentia appas	IL.
	regional level.	hired contact tracing staff.	Cotorow I contort noncoro	For symptomatic cases:	
	Outbreak investigation		Category I contact persons	From the 2nd day	
	and management,		(higher risk of infection).	before the onset of the	
	including contact		Category II contact persons	first symptoms of the	
	tracing, is the		(lower risk of infection).	case to at least 10 days	
	responsibility of local		Category III contact persons	after the onset of	
	health authorities at		(only to be used for medical	symptoms, longer if the	
	city or county level,		staff).	symptoms are severe	
	with support from		Full detailed breakdown	or persistent.	
	state health		available <u>here</u> :		
	departments and the			For asymptomatic: In	
	national institute for		From 1 Dec, Cat I contacts can	situations in which	
	public health, the		test out of quarantine after 10	there is no further	
	Robert Koch Institute,		days using either PCR or rapid	information on the	
	when necessary.		antigen test.	source of infection for	
				the asymptomatic case	
				and there is no special	
				risk situation (e.g.	
				employee in geriatric	
				care or in a hospital,	
				this always requires a	
				decision on a case-by-	
				case basis), analogous	
				to symptomatic cases,	
				the Laboratory	
				evidence can be	
				assumed as an	
				approximation for the	
				onset of symptoms, so	
				people with contact	
				must be followed up	
				from 48 hours before	
				the sample collection	
				date. The end of the	
				infectious period is	
				assumed to be 10 days	
				after sampling.	
				arter sampling.	
				1	

	I	1	I		1
				This means: Infectious	
				period if the infection	
				date is unknown = 2	
				days before the	
				sampling date to 10	
				days after the sampling	
				date.	
				If it is known or very	
				likely who and when or	
				from which event the	
				asymptomatic case is	
				likely to have been	
				infected (these are	
				often identified in the	
				context of the	
				environmental	
				investigation of cases),	
				contacts can be	
				considered potentially	
				infectious from the	
				third day after	
				exposure to the source	
				case accepted, but not	
				later than the date of	
				sampling. The duration	
				of the infectious period	
				is accordingly assumed	
				to be 12 days after the	
				third day after	
				exposure.	
				O.P. O.	
				This means: Infectious	
				period with known	
				infection date = from	
				day 3 after exposure to	
				day 15 after exposure	
Ireland <sup>(74,</sup>	National approach	Contact tracing is	Close & Casual Contacts	Infectious period for	COVID Tracker Supplements
161)	organised by the HSE,	undertaken by staff in the		contact	
,			Identified. Different responses		contact tracing - if triggered to,
	Health Protection	HSE's contact tracing	for each.	tracing purposes is	app notifies all close contacts in
		centres (CTCs). Complex	Close contact definition	defined as from 48	the past 14 days that they have

Surveillance Centre,	contact tracing and		hours before symptom	been in contact with an individual
Dept. of Health	surveillance is undertaken	<ul> <li>Any individual who has had</li> </ul>	onset in the case, until	who has tested positive
	by the Dept. of Health.	greater than 15 minutes face-to-	the case is classified as	
	There are over 500 people	face (<2 meters distance*)	no longer infectious	
	trained to work in CTCs. The Contact Tracers come	contact with a case, in any setting.	(usually 10 days from symptom onset AND 5	
	from a variety of	Household contacts defined as	days fever free for	
	backgrounds, Public	living or sleeping in the same	cases in the	
	Health, The Defence	home, individuals in	community; 14 days	
	Forces, public sector	shared accommodation sharing	from symptom onset	
	bodies and redeployed HSE	kitchen or bathroom facilities	AND 5 days fever free	
	Staff.	and sexual partners.	for residents in	
		Healthcare workers, including	residential care	
		laboratory workers, who have	facilities or cases who	
		not worn appropriate PPE or had a breach in PPE during	are hospitalized). For asymptomatic	
		the following exposures to the	cases, contact tracing	
		case:	is initiated from 24	
		o Direct contact with the case	hours before the date	
		(as defined above), their body	of sample collection.	
		fluids or their laboratory		
		specimen		
		o Present in the same room when an aerosol generating		
		procedure is		
		undertaken on the case.		
		and crace of the case.		
		<ul> <li>Passengers on an aircraft</li> </ul>		
		sitting within two seats (in any		
		direction) of the - case, travel		
		companions or persons		
		providing care, and crew members serving in the section		
		of the aircraft where the index		
		case was seated.		
		• For those contacts who have		
		shared a closed space with a		
		case for longer than two hours,		
		a risk assessment should be		
		undertaken taking into		
		consideration the size of the		

			room, ventilation and the		
			distance from the case. This		
			may include office and school		
			settings and any sort of large		
(24.452)		_	conveyance.		
Italy <sup>(81, 162)</sup>	Unclear - Appears to	Contact tracing is carried	Close contacts traced using	In the context of	<i>Immun</i> i: When users discover they
	operate at local	out by family doctors and	definition comparable to Ireland:	COVID-19, contact	have tested positive for the virus,
	authority level	specially trained public	A "close contact" (high risk	tracing consists of	Immuni allows them to
	(Prevention	health professionals.	exposure) of a probable or	identifying and	anonymously alert people they
	Department of the		confirmed case is defined as:	managing the people	have been in close contact with
	local health authority	The contact tracing for	<ul> <li>A person living in the same</li> </ul>	who they may have	and who may also have been
	(ASL)).	COVID-19 takes place	household as a COVID-19 case;	been exposed to a	infected.
		through the following	<ul> <li>A person having had direct</li> </ul>	probable or confirmed	
	The national institute	activities:	physical contact with a COVID-	case of the disease in	
	of health (ISS) is		19 case (e.g. shaking hands);	the previous 48 hours	
	responsible for	1) identify contacts	<ul> <li>A person having unprotected</li> </ul>	the onset of symptoms	
	operating a digital	through an interview with	direct contact with infectious	in the case (or prior to	
	platform that collates	COVID-19 cases and an	secretions of a COVID-19 case	collection of the	
	epi data on the spread	epidemiological	(e.g. touching used paper	positive sample if the	
	of the disease.	investigation detailed;	tissues with a bare hand);	case is asymptomatic),	
	However, individual	,	<ul> <li>A person having had face-to-</li> </ul>	until the moment of	
	regions and	2) talk to your contacts, to	face contact with a COVID-19	diagnosis and isolation	
	autonomous territories	inform them that they may	case within 2 metres and > 15	of the case.	
	are responsible for the	have come in contact with	minutes;		
	collection and	a case ofSARS-CoV-2	<ul> <li>A person who was in a closed</li> </ul>		
	provision of this data.	infection / disease and to	environment (e.g. classroom,		
	provision or and data.	confirm the information	meeting room, hospital waiting		
	The territorial	collected;	room, etc.) with a COVID-19		
	surveillance is	conceedy	case without suitable PPE		
	entrusted to the	3) classify contacts in	A health care professional or		
	prevention	contact as high or low risk	other person providing direct		
	departments of local	(based on the type of	assistance to a COVID-19 case		
	health (ASL or AUSL),	exposure) and test cases	or lab personnel handling		
	coordinated by the	suspicious	samples of a COVID-19 case,		
	Regions according to	Suspicious	who did not use the		
	guidelines agreed at	4) provide contacts with	recommended PPE or used		
	national level and	information on behaviours	unsuitable PPE		
	expressed in the	to be followed and	A contact in an aircraft sitting		
	LEA(Essential levels of	preventive measures to be	within two seats (in any		
	assistance):	implemented to avoid	direction) of the COVID-19 case,		
	surveillance is divided	transmission of the	travel companions or persons		

	into the health districts defined for each ASL/AUSL.	infection, including quarantine if it is a close contact;  5) Monitor close contacts for 14 days after exposure to quickly identify any.	providing care, and crew members serving in the section of the aircraft where the index case was seated (if severity of symptoms or movement of the case indicate more extensive exposure, passengers seated in the entire section or all passengers on the aircraft may be considered close contacts).		
Netherla ds <sup>(83, 163)</sup>		Unclear.	Members of household, close contacts and "other contacts" traced.  If you were less than 1.5m apart from someone with COVID-19 for longer than 15 mins.  If someone with COVID-19 coughs or sneezes in your face.  If you have been in contact with someone who has COVID-19, but are not a close contact, you do not have to follow any exceptional rules. However, do monitor your health.  A household member could also be a close contact, but the rules for those contacts are different than for other close contacts.  Individuals who test positive will also be asked who might have infected them.	Unclear.	You will get a notification if:  • someone changes their status in the CoronaMelder app to positive (this can only be done with the help of the GGD);  • and you have been near that person in the past few days,  • and you were near that person for at least 15 minutes.
Portugal , 164)	National approach organised by the Directorate General of Health.	Public health employees.	Public health units undertake contact tracing when a confirmed COVID-19 case is identified. All close contacts are evaluated according to their level of exposure. For those with a high risk exposure, the following procedures apply:	For the purpose of tracking contacts, the period extends from 48hours before the symptom onset date of the symptomatic COVID-19 case or the date of the collection of	Stay Away COVID: Usual 14 days, 2m, 15 min parameters.

			isolation at home, active monitoring by the health authorities during the 14 days after the last exposure, and daily self-monitoring COVID-19 symptoms (including fever, cough or difficulty in breathing). Testing for contacts with high risk exposure can be determined by health authorities upon evaluation of the risk, particularly in a context of an outbreak or cluster (https://www.dgs.pt/directrizes-da-dgs/normas-e-circulares-normativas/norma-n-0152020-de-24072020-pdf.aspx). Those with low risk exposure are advised to self-monitor for COVID-19 symptoms on a daily basis.	biological product from the laboratory test in the case of asymptomatic COVID- 19 until the day on which the case has been resolved.	
Spain <sup>(41,</sup> 165)	Decentralised approach - organised by regional health authorities.	Mainly public health workers supplemented recently by army.	Tracing workers (mainly, within primary care and public health services) will track down people who were closer than 2 meters and for more than 15 minutes to suspected or confirmed cases, in the two days before symptoms onset or positive testing.	Up to 48 hours before symptom onset or positive test.	Radar COVID: Works similar to other apps but problems with roll out due to regional nature of Spain's healthcare system and need to include alternative languages for certain regions e.g. Basque.
Sweden <sup>(87,</sup> 91)	National approach organised by the Swedish Public Health Agency.	Regional infection control units carry out the tracing however, in some cases the index case may be responsible for informing their own contacts.	Infection tracking of COVID-19 always means for all index cases, regardless of risk environment, that: identify who may have been infected by the index case, from the time that person became contagious (these people are counted as close contacts), inform close contacts about the importance of physical distancing, to avoid physical	Infection tracing normally includes close contacts that the index case had 24 hours before they developed symptoms.	Appears that they do not have an app for contact tracing. They do have a symptom tracker app but it does not seem to collect information on contacts.

England <sup>(73,</sup>	National approach	Anyone testing positive for	contacts during the incubation period, and to pay attention to early symptoms of COVID-19, inform close contacts with symptoms that they should stay at home and isolate themselves and contact health and medical care for sampling.  'Contact' means a person who	Time period mentioned	NHS COVID-19: If an app user
166)	organised by the NHS (NHS Test and Trace).	coronavirus is contacted by NHS Contact Tracers. Infected individuals will receive a text or email alert or call with instructions of how to share details of people with whom they had close, recent contact and places they have visited.	has been in close contact with someone who has tested positive for coronavirus and who may or may not live with them.	is "close, recent contact". Recent not explicitly defined.	tests positive for coronavirus, they can choose to share their result anonymously. The NHS will then send alerts to other app users who have spent time near them, or been in 'close contact', over the last few days. These alerts will never identify an individual.
Northern Ireland <sup>(75,</sup> 95, 167)	National approach organised by the Public Health Agency (PHA).	Clinical Contact Tracers - Operate the contact tracing process – calling index cases to identify close contacts who are then contacted to advise to isolate.  Contact Tracing Clinical Lead- Oversees response to complex contact tracing issues, and manages any clinical concerns. There will be a clinical lead on duty at all times.	Close contacts - close contact = close proximity with confirmed case and have spent more than 15 minutes (the `15 minute rule') with them without any personal protection.  30 Nov: Health Minister announced intention to contact and test asymptomatic contacts as well as increase focus on identifying sources of infection.	Unclear. However, the government is exploring introducing enhanced/reverse contact tracing which will trace contacts in the 7 days before symptom onset.	StopCOVID NI Proximity: Yes but not directly linked to contact tracing service. Works in parallel. Anonymously notifies people who may have come in contact with a confirmed case and encourages them to notify them that they might have become infected.  If an App user tests positive for COVID-19 the App will notify any App users that have been closer than two metres for more than fifteen minutes in the previous 14 days.
Scotland <sup>(77</sup> , 168)	National approach organised by Health Protection Scotland.	NHS Board health protection teams (HPT) working in partnership with the National Contact Tracing Centre (NCTC).	A contact is defined as a person who, in the infectious period from 48 hours prior to and 10 days after the confirmed case's symptom onset, or date a positive test was taken if asymptomatic, had at least one	48 hours prior to onset of symptoms and 10 days after onset of symptoms (or date of positive test if asymptomatic).	Protect Scotland: complimentary to existing CT. Notifies individuals if they have been in contact with someone who has tested positive. If someone is confirmed positive, the app anonymously notifies all individual app users who have

			of the following types of exposure: Household contact Non household contact (direct or proximity) Airline contact.		been within 2m for at least 15 minutes of the positive individual in the past 14 days.
Wales <sup>(78,</sup> 166)	National approach organised by the NHS (NHS Wales Test, Trace, Protect service).	Contact tracing is delivered by local authorities and health boards who have taken on extra staff to meet the requirement. Unclear what qualifications/training these staff have.	Close contacts. A close contact is anyone that a contact tracer considers may lead to a risk of infection or contamination with coronavirus, meaning those you may or may not live with and with whom you have been in close proximity, on any occasion beginning up to two days before your symptoms started, including:  • someone you have had faceto-face contact with at a distance of less than 1 metre, had skin-to-skin physical contact with, or that you have coughed on, or had other forms of contact within 1 metre for 1 minute or longer  • someone that you have spent more than 15 minutes within two metres of; and  • someone that you have travelled in a car or other small vehicle with, or someone that has been in close proximity to you on public transport.	Up to 48 hours before symptom onset.	NHS COVID-19: Same as in England The app will be used, alongside traditional contact tracing, to notify users if they come into contact with someone who later tests positive for coronavirus.
Switzerlan d <sup>(84)</sup>	National strategy organised by the Federal Office of Public Health with cantonal authorities responsible for tracing.	Unclear beyond the fact that employees of local cantons are conducting the tracing.	Close contacts.	Up to 48 hours before symptom onset.	SwissCovid: Works alongside traditional contact tracing.  When within Bluetooth range, the mobile phone exchanges random IDs (identification code) with other mobile phones that have a compatible app installed. The

Public health measures and s	strategies to	limit the s	spread of	COVID-19
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		random IDs are stored on the
		mobile phone for 14 days before
		being deleted.

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