



Coronavirus Disease 2019 (COVID-19)

Daily Situation Report of the Robert Koch Institute

28/11/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases		7-day incidence (7-di)		DIVI -Intensive care register
Total ¹	Active cases ²	Total population	No. of districts with 7-di > 50/100,000 pop	Cases currently in ICU
+21,695 (1,028,089)	+6,400 [ca. 301,100]	136 cases/ 100,000 pop	-1 [383/412]	+34 [3,888]
Recovered ³	Deaths	People ≥ 60 years	No. of districts with 7-di > 100/100,000 pop	Ended treatment; thereof deceased [%]
+14,900 (ca. 711,000)	+379 (15,965)	113 cases/ 100,000 pop	+2 [267/412]	+468 26%

Numbers in () brackets show cumulative values, numbers in [] brackets show current values.

¹ The difference to previous day relates to data entry at RKI; due to delay of data transmission former cases may be included.

² Active cases were calculated from the number of transmitted cases minus deaths and the estimated number of recovered cases.

³ The algorithm for estimation of recovered cases considers information about disease onset and hospitalization but not for late effects because such data were not recorded regularly.

COVID-19 cases are notified to the local public health department in the respective districts, in accordance with the German Protection against Infection Act (IfSG). The data are further transmitted through the respective federal state health authority to the Robert Koch Institute (RKI). This situation report presents the uniformly recorded nationwide data on laboratory-confirmed COVID-19 cases transmitted to RKI.

– Changes since the last report are marked **blue** in the text –

Summary (as of 28/11/2020, 12:00 AM)

- Currently, an increase of transmissions in the population in Germany can be observed. Therefore, the entire population is strongly encouraged to commit itself to infection prevention and control.
- The 7-day incidence in Bavaria, Berlin, Hesse, North Rhine-Westphalia, Saxony and Thuringia is higher than the national total 7-day incidence of 136 cases per 100,000 population.
- Since the beginning of September, the proportion of cases in older age groups has been increasing again. The 7-day incidence of people ≥ 60 years is currently **113** cases/100,000 population.
- Almost all districts have a high 7-day incidence. Only **8** districts have an incidence of ≤ 25 cases/100,000 population. In comparison, **267** districts have an incidence of >100 cases/100,000 population and of these, **25** districts have an incidence of >250-500 cases/100,000 population and one district of >500-1000 cases/100,000 population.
- The high nationwide number of cases is caused by increasingly diffuse transmission, with numerous clusters in households, but also in community institutions, nursing and long-term care homes, as well as in occupational settings or related to religious events. For a large proportion of cases the transmission setting remains unclear.
- Between mid-October and mid-November, the number of COVID-19 cases treated in intensive care increased dramatically, from 655 patients on 15/10/2020 to 3,395 on 15/11/2020. Since then, the increase has slowed down slightly, with **3,888** cases on 28/11/2020.
- On 28/11/2020, **21,695** new laboratory-confirmed COVID-19 cases and **379** new deaths associated with COVID-19 have been transmitted to the RKI in Germany.

Epidemiological Situation in Germany

In accordance with the international standards of WHO¹ and ECDC², RKI considers all laboratory confirmations of SARS-CoV-2, irrespective of the presence and severity of clinical symptoms, as COVID-19 cases. Thus, in the following report the term "COVID-19 cases" covers acute SARS-CoV-2 infections as well as cases of COVID-19 disease.

General current assessment

After a temporary stabilisation of case numbers at a higher level in late August and early September, there is currently an increase of transmission within the population in all federal states. The increase has leveled off since the second week of November. The proportion of COVID-19 cases in older age groups is currently increasing. In November, the reported R-values have been fluctuating around 1. This means that, on average, each person infected with SARS-CoV-2 infects another person. As the number of infected persons is currently very high in Germany, this results in a high number of new infections every day.

There are outbreaks in various districts throughout Germany, which are associated with different situations, including households, in schools and occupational settings. Increasingly, outbreaks in old people's and nursing homes are reported. Additionally, in many districts, there is an increasingly diffuse spread of SARS-CoV-2 without traceable transmission chains.

While the 7-day-incidence among younger age groups is decreasing, the incidence among older people is further increasing (cf. situation report 24/11/2020). As they more often have a severe course due to COVID-19, the number of serious cases and deaths is also increasing. These can be avoided if we prevent the spread of the SARS-CoV-2 virus with the help of infection control measures.

It is therefore still necessary for the entire population to be committed to infection prevention and control, e.g. by consistently observing rules of distance and hygiene - also outdoors -, by ventilating indoor spaces and, where indicated, by wearing a community mask correctly. Crowds of people - especially indoors - should be avoided.

¹ World Health Organization, https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2020.1

² European Centre for Disease Prevention and Control, <https://www.ecdc.europa.eu/en/covid-19/surveillance/case-definition>

Geographical distribution of cases

Epidemiological analyses are based on validated cases notified electronically to the RKI in line with the Protection Against Infection Law. Since January 2020, a total of **1,028,089 (+21,695)** laboratory-confirmed cases of COVID-19 have been reported to and validated by the RKI (Table 1).

Table 1: Number and cumulative incidence (per 100,000 population) of laboratory-confirmed COVID-19 cases and deaths for each federal state electronically reported to RKI, Germany (28/11/2020, 12:00 AM). The number of new cases includes positive cases notified to the local health department at the same day, but also at previous days.

Federal State	Total number of cases	Number of new cases*	Cases/100,000 pop.	Cases in the last 7 days	7-day incidence per 100,000 pop.	Number of deaths	Number of deaths/100,000 pop.
Baden-Wuerttemberg	145,615	2,737	1,312	14,251	128	2,671	24.1
Bavaria	201,950	3,962	1,539	22,410	171	3,759	28.6
Berlin	63,064	1,400	1,719	6,985	190	539	14.7
Brandenburg	18,197	551	722	2,413	96	329	13.0
Bremen*	9,868	228	1,449	826	121	116	17.0
Hamburg	24,305	254	1,316	1,393	75	368	19.9
Hesse	84,845	1,594	1,349	9,562	152	1,232	19.6
Mecklenburg-Western Pomerania	5,820	125	362	744	46	61	3.8
Lower Saxony	69,948	1,731	875	6,841	86	1,140	14.3
North Rhine-Westphalia	255,115	4,231	1,421	26,092	145	3,380	18.8
Rhineland-Palatinate	42,670	988	1,042	5,109	125	508	12.4
Saarland	12,237	196	1,240	903	91	250	25.3
Saxony	52,411	2,556	1,287	9,152	225	858	21.1
Saxony-Anhalt	11,667	378	532	1,898	86	160	7.3
Schleswig-Holstein	14,013	223	483	1,339	46	249	8.6
Thuringia	16,364	541	767	3,068	144	345	16.2
Total	1,028,089	21,695	1,236	112,986	136	15,965	19.2

Quality checks and data cleaning by the health authorities and regional offices can lead to corrections to cases previously transmitted (e. g. detection of duplicate reports). This can occasionally lead to negative values for the number of new cases.

*On 26th November, no data were transmitted from Bremen; thus, the difference depicted today comprises cases from two days.

Distribution of cases over time

The first COVID-19 cases in Germany were notified in January 2020, Figure 1 shows COVID-19 cases transmitted to RKI according to date of illness onset from 01/03/2020 onwards. Of these cases, the onset of symptoms is unknown for 549,015 cases (53%) thus their date of reporting is provided in Figure 1.

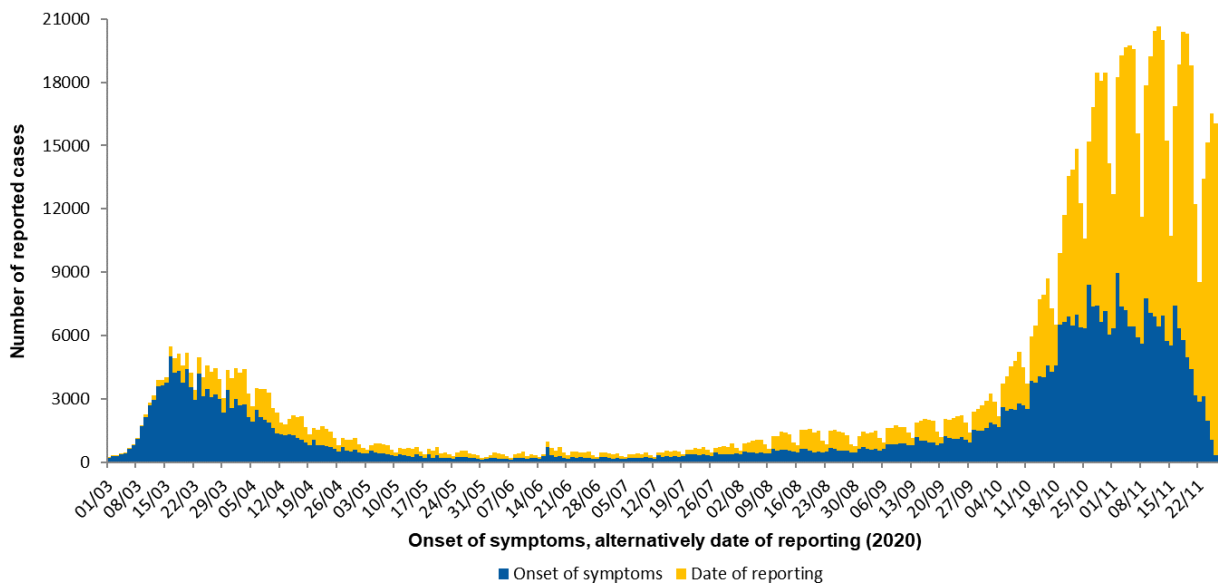


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (28/11/2020, 12:00 AM).

Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Act (Infektionsschutzgesetz, IfSG), the RKI receives information on occupation, accommodation or care in a facility relevant for infection control for reported COVID-19 cases.

Since information on occupation, accommodation or care in these facilities is missing in many cases, the numbers of cases working, accommodated or cared for in these facilities reported here should be considered minimum values. Among the COVID-19 cases reported from the above-mentioned facilities, the proportion of cases that actually acquired their infection in these facilities is unknown.

The number of COVID-19 cases was highest among persons cared for or employed in care facilities according to § 36 IfSG, among persons employed in medical facilities according to § 23 IfSG and among persons cared for in educational facilities according to § 33 IfSG (Table 2). The number of deaths was particularly high among persons cared for in facilities according to §§ 23 and 36.

The high number of cases among people cared for or working in various care facilities (§ 36 IfSG) is consistent with numerous reported outbreaks, especially in nursing homes.

Table 2: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases according to the Protection Against Infection Act (IfSG), reported to RKI (n=136,949 cases; 28/11/2020, 12:00 AM).

Facility according to		Total	≥60 years, number / prop.	Hospitalised	Deaths	Recovered (estimate)
§ 23 IfSG (e.g. hospitals, outpatient clinics and practices, dialysis clinics or outpatient nursing services)	Cared for / accommodated in facility	8,540	5,723 / 67%	5,490	1,121	5,900
	Occupation in facility	28,438	2,204 / 8%	1,001	27	25,200
§ 33 IfSG (e.g. day care facilities, kindergartens, facilities for after school care, schools or other educational facilities, children's homes, holiday camps)	Cared for / accommodated in facility*	29,830	—	329	3	24,800
	Occupation in facility	13,872	1,043 / 8%	350	12	11,800
§ 36 IfSG (e.g. facilities for the care of older, disabled or other persons in need of care, homeless shelters, community facilities for asylum-seekers, prisons)	Cared for / accommodated in facility	36,540	25,650 / 70%	6,614	5,134	24,900
	Occupation in facility	19,729	2,251 / 11%	661	54	16,900

*for care according to § 33 IfSG only cases under 18 years of age are considered, as other information may be assumed to be incorrect. Due to changes in the variables, no notifications according to §42 are listed here.

Outbreaks

An increased incidence of >25 cases in 7 days/100,000 population was reported for almost every district (403 of 412). There are 25 districts in the incidence group of >250 to 500 cases/100,000 and one district in the incidence group of >500 cases/100,000 in the last 7 days. The dashboard (<https://corona.rki.de>) shows all affected districts.

In most districts the transmission is diffuse, with several cases clustering in households. Many small outbreaks in retirement and nursing homes, in hospitals and facilities for asylum seekers and refugees, and community facilities, kindergartens and schools, various occupational settings and in the context of religious gatherings continue to contribute to the increase of incidence.

Estimation of the reproduction number (R)

The reproduction number, R, is defined as the mean number of people infected by one infected person. The estimation of the R-value is based on the so-called nowcasting (Figure 2), a statistical procedure that shows the development of the number of cases after the onset of the disease and also forecasts it for the last few days. This forecast is subject to uncertainty, which is also reflected in the prediction intervals given for the R-value. After other case reports have been received at the RKI, the R-value is adjusted for the past days and, if necessary, corrected upwards or downwards. In recent weeks, values reported at the beginning of a week were typically corrected slightly upwards. They had thus slightly underestimated the real COVID-19 events in Germany, values estimated towards the end of a week were more stable. The currently estimated course of the R-value is shown in Figure 3.

4-day R-value
0.94
(95%-prediction interval: 0.75 – 1.12)

7-day R-value
0.96
(95%- prediction interval: 0.86 – 1.05)

Delays in reporting of case numbers at weekend days can lead to cyclical fluctuations of the 4-day R-value. The 7-day R-value is less affected because all week days are used to determine the value.

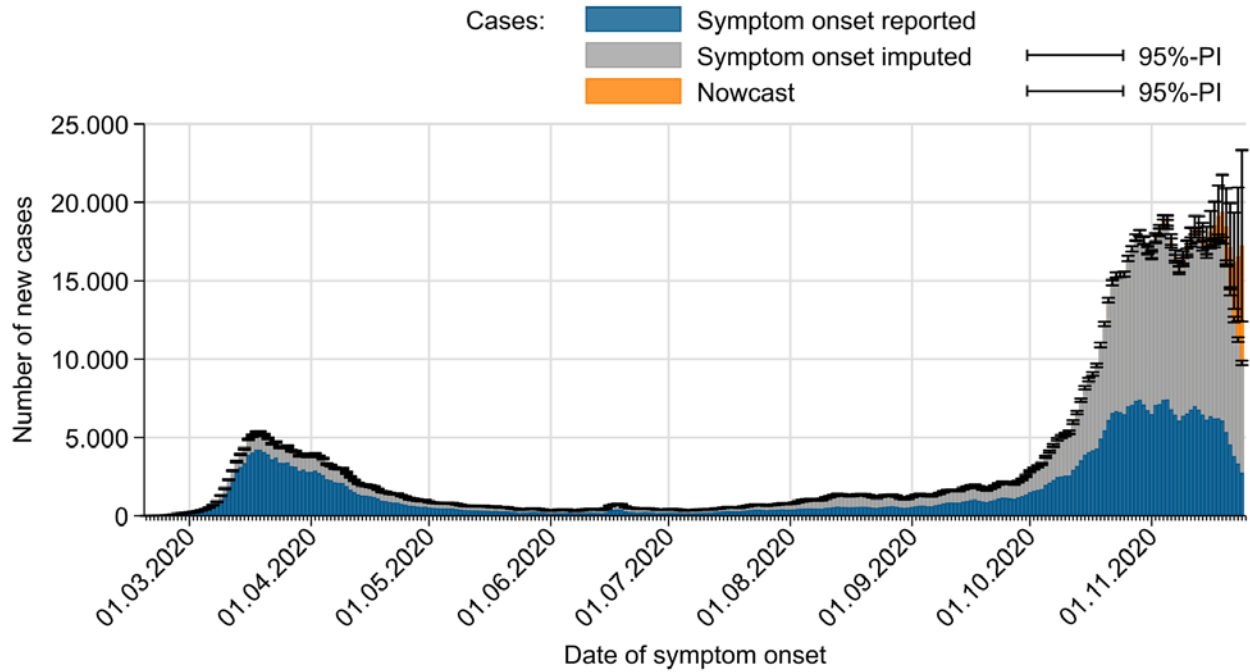


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 28/11/2020, 12 AM, considering cases up to 24/11/2020).

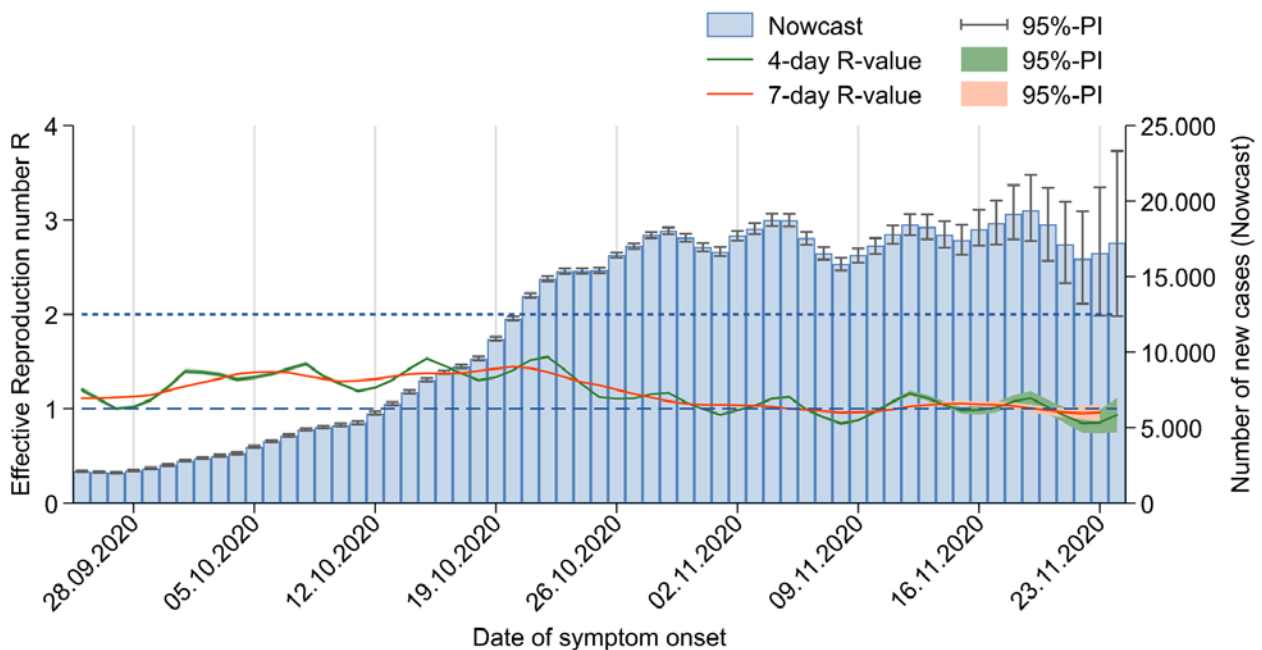


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 28/11/2020, 12 AM, considering cases up to 24/11/2020).

The reported R-values have been fluctuating around 1 in November. This means that, on average, each person infected with SARS-CoV-2 infects another person. As the number of infected persons is currently very high in Germany, this results in a high number of new infections every day.

Sample calculations as well as an excel sheet presenting both R-values with daily updates can be found under www.rki.de/covid-19-nowcasting. A detailed description of the methodology is available at https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/17/Art_02.html (Epid. Bull, 17 | 2020 from 23/04/2020).

DIVI intensive care register

The German Interdisciplinary Association for Intensive and Emergency Medicine (DIVI) has in collaboration with RKI established a registry to document the number of available intensive care beds as well as the number of COVID-19 cases treated in participating hospitals on a daily basis. Since 16/04/2020, all hospitals with intensive care beds are required to report (<https://www.intensivregister.de/#/intensivregister>).

As of 28/11/2020, a total of 1,288 hospitals or departments reported to the DIVI registry. Overall, 27,449 intensive care beds were registered, of which 21,923 (80%) are occupied, and 5,526 (20%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 3.

Table 3: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (28/11/2020, 12:15 PM).

	Number of patients	Percentage	Change to previous day*
Currently in ICU	3,888		+34
- of these: with invasive mechanical ventilation	2,306	59%	+5
Discharged from ICU	31,294		+468
- of these: deaths	7,160	23%	+121

*The interpretation of these numbers must consider the number of reporting hospitals and therefore the number of reported patients may change from day to day. On certain days, this can explain an occasionally important decrease or increase in the cumulative number of discharged patients or deaths compared with the day before.

Risk Assessment by the RKI

In view of the recent increase in case numbers with severe disease, which have to be treated in ICUs and the increasingly tense situation in the health system the risk assessment of the RKI was adapted to the situation on 11/11/2020, The current version can be found here:

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikobewertung.html (in German)

Measures taken in Germany

- Third law on protection of the population in the event of an epidemic of national concern (18/11/2020, in German) <https://www.bundesgesundheitsministerium.de/service/gesetze-und-verordnungen/guv-19-lp/drittes-bevoelkerungsschutzgesetz.html>
- Management of contact persons (18/11/2020, in German) https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Kontaktperson/Management.html
- Updated Testing Criteria for autumn and winter season (11/11/2020, in German) https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Teststrategie/Testkriterien_Herbst_Winter.html
- Recommendations on distribution of COVID-19-vaccines by The Standing Committee on Immunisation (STIKO). The German Ethics Council and German National Academy of Sciences Leopoldina (09/11/2020, in German) <https://www.ethikrat.org/fileadmin/Publikationen/Ad-hoc->

[Empfehlungen/deutsch/gemeinsames-positions-papier-stiko-der-leopoldina-impfstoffpriorisierung.pdf](#)

- National Testing Strategy – who will be tested for SARS-CoV-2 in Germany (14/10/2020, *in German*)
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Teststrategie/Nat-Teststrat.html
- SARS-CoV-2 test criteria for schools during the COVID 19 pandemic (12/10/2020, *in German*)
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Teststrategie/Testkriterien-Schulen.pdf
- Preventive measures in schools during the COVID 19 pandemic (12/10/2020) (*in German*)
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Praevention-Schulen.pdf
- Selected and regularly updated information on COVID-19
<https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/COVID19.html>
- Information on the designation of international risk areas
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html
- The ministry of health has published a record of all measures implemented in Germany since 27/01/2020 (*in German*)
<https://www.bundesgesundheitsministerium.de/coronavirus/chronik-coronavirus.html>
- Information from the Ministry of Health for travellers entering Germany: Frequently asked questions and answers (*in German*)
<https://www.bundesgesundheitsministerium.de/coronavirus-infos-reisende/faq-tests-einreisende.html>
- Corona-Warn-App
<https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/CWA/CWA.html>
- Orders concerning travel after the determination of an epidemic situation of national significance by the German Bundestag (29/09/2020)
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/BMG_Merkblatt_Reisende_Tab.html
- Information on additional regulations at the regional level regarding control measures such as physical distancing or quarantine regulations for persons entering from other countries can be accessed here: (*in German*)
<https://www.bundesregierung.de/breg-de/themen/coronavirus/corona-bundeslaender-1745198>
- Data on current disease activity can be found on the RKI dashboard:
<https://corona.rki.de/>
- A distance of 1.5 metres to other individuals must be maintained in public spaces: (*in German*)
<https://www.bundesregierung.de/breg-de/themen/coronavirus/besprechung-der-bundeskanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248>
- (Non-medical) face masks must be worn on public transport and in shops in all federal states.