



# Coronavirus Disease 2019 (COVID-19)

## Daily Situation Report of the Robert Koch Institute

22/01/2021 - UPDATED STATUS FOR GERMANY

Confirmed cases		7-day incidence (7-di)		Vaccination monitoring	DIVI-Intensive care register
Total <sup>1</sup>	Active cases <sup>2</sup>	Total population	No. of districts with 7-di > 50/100,000 pop	No. of vaccinations reported in the last 48h <sup>4</sup>	Change to previous day for cases currently in ICU
+17,862 (2,106,262)	-1,000 [ca. 275,400]	115 cases/ 100,000 pop	-1 [391/412]	+54,988 1 <sup>st</sup> vaccination +31,528 2 <sup>nd</sup> vaccination	-19 [4,768]
Recovered <sup>3</sup>	Deaths	60-79 years	80+ years	Total no. of vaccinated with one/two vaccine dose/s and share of population <sup>4</sup>	Completed ICU treatment; thereof deceased [%]
+18,000 (ca. 1,780,200)	+859 (50,642)	73 cases/ 100,000 pop	202 cases/ 100,000 pop	N1: 1,386,464 (1.7%) N2: 115,175	+623 34%
				No. of districts with 7-di > 100/100,000 pop	
				-6 [237/412]	

Numbers in () brackets show cumulative values, numbers in [] brackets show current values. Footnotes can be found in the Annex.

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 22/01/2021, 12:00 AM)

- Currently, the number of transmissions in the population in Germany is high. RKI now assesses the level of threat to the health of the general population as **very high**.
- Yesterday, **17,862** new laboratory-confirmed COVID-19 cases as well as **859** new deaths associated with COVID-19 were transmitted to the RKI in Germany. The national 7-day incidence is **115** cases per 100,000 population. In Brandenburg, Saxony, Saxony-Anhalt, and Thuringia it is markedly above the national incidence.
- Of 412 districts, **391** have a high 7-day COVID-19 incidence. **237** districts have an incidence of >100 cases/100,000 population and of these, **20** districts have an incidence of >250-500 cases/100,000 population.
- The 7-day incidence of people 60-79 years is currently **73** and of people ≥80 years **202** cases/100,000 population.
- The high nationwide number of cases is caused by increasingly diffuse transmission, with numerous clusters especially in households, occupational settings and nursing and long-term care homes.
- On **22/01/2021**, **4,768** COVID-19 patients were in intensive care. In the preceding 24 hours, **+623** existing patients had been discharged (**34%** of whom had died) and **+604** patients were newly admitted. The resulting number of cases under treatment was **19** less than the prior day.
- Since 26/12/2020 a total of **1,386,464** people in Germany have been vaccinated once (vaccination rate **1.7%**) and **115,175** people **twice** against COVID-19 (<http://www.rki.de/covid-19-impfquoten>).
- In this situation report, the following additional information is given: **Mortality Monitoring**

## Epidemiological Situation in Germany

In accordance with the international standards of WHO<sup>1</sup> and ECDC<sup>2</sup>, the RKI considers all laboratory confirmations of SARS-CoV-2 and confirms these via nucleic acid based (e.g. PCR) or direct pathogen detection, 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 sharp rise in case numbers at the beginning of December, a decrease during the holidays and an increase in the first week of January the case numbers seem to decrease slightly; depending on the region.

The R-value is currently **around** 1. Due to the very high number of infected persons in Germany, this means a high number of new infections per day.

Outbreaks are being reported from various districts throughout Germany, currently particularly in nursing and long-term care homes, occupational settings, and households. Additionally, in many districts, there is an increasingly diffuse spread of SARS-CoV-2 without traceable transmission chains.

Since patients in older age groups more often have more severe illness due to COVID-19, the number of serious cases and deaths remains on a high level. These can be avoided if all 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.

Several variants of SARS-CoV-2 are currently being detected worldwide, for which both their effect on the spread of SARS-CoV-2 and the effectiveness of vaccinations are being examined in detail. Since mid December there have been reports of the increasing spread of a new virus variant (B.1.1.7) in the United Kingdom. By now there is increasing clinical-diagnostic as well as epidemiological evidence of increased infectiousness of this variant. Currently there is no evidence that infections with variant B.1.1.7 lead to more serious diseases. At least for the mRNA vaccine Comirnaty by BioNTech/Pfizer, an effectiveness against B.1.1.7 could be shown in first studies.

Also in December 2020, an increased occurrence of a SARS-CoV-2 variant in South Africa (B.1.351) was reported, which has displaced other variants. Therefore, an increased infectiousness is conceivable. The effectiveness of vaccines is currently being tested for this variant as well. **Furthermore, a SARS-CoV-2 variant derived from line B.1.1.28 is circulating in the Brazilian state of Amazonas.**

**All three** variants have already been detected in Germany. With increased sequencing and data acquisition in the German Electronic Sequence Data Hub (DESH - [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/DESH/DESH.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/DESH/DESH.html)) the infection process is increasingly monitored by integrated molecular surveillance.

In Brandenburg, some health authorities experienced a backlog in data entry and thus in data transmission to the RKI. In some cases, this leads to large discrepancies between locally reported incidences and case numbers compared to those reported by the RKI.

<sup>1</sup> World Health Organization, [https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance\\_Case\\_Definition-2020.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2020.1)

<sup>2</sup> 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 (Data closure: 12:00 AM daily). Since January 2020, a total of **2,106,262 (+17,862)** 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 (22/01/2021, 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	Cumulative cases			Last 7 days		Cumulative deaths	
	Total number of cases	Number of new cases	Cases/100,000 pop.	Cases in the last 7 days	7-day incidence/100,000 pop.	Number of deaths	Number of deaths/100,000 pop.
<b>Baden-Wuerttemberg</b>	281,393	1,914	2,535	10,684	96	6,514	58.7
<b>Bavaria</b>	385,784	2,677	2,939	15,082	115	9,420	71.8
<b>Berlin</b>	115,506	900	3,148	4,118	112	1,996	54.4
<b>Brandenburg*</b>	61,997	1,172	2,458	4,902	194	1,849	73.3
<b>Bremen</b>	15,248	97	2,238	551	81	248	36.4
<b>Hamburg</b>	43,919	306	2,378	1,523	82	962	52.1
<b>Hesse</b>	163,853	1,532	2,606	7,488	119	4,318	68.7
<b>Mecklenburg-Western Pomerania</b>	17,826	273	1,108	1,732	108	344	21.4
<b>Lower Saxony</b>	133,417	1,322	1,669	7,095	89	2,900	36.3
<b>North Rhine-Westphalia</b>	464,139	3,430	2,586	19,273	107	9,773	54.5
<b>Rhineland-Palatinate</b>	87,855	815	2,146	4,095	100	2,216	54.1
<b>Saarland</b>	23,873	245	2,419	1,100	111	654	66.3
<b>Saxony</b>	171,878	1,094	4,221	6,887	169	5,517	135.5
<b>Saxony-Anhalt</b>	46,137	689	2,102	4,051	185	1,333	60.7
<b>Schleswig-Holstein</b>	32,820	523	1,130	2,667	92	725	25.0
<b>Thuringia</b>	60,617	873	2,841	4,660	218	1,873	87.8
<b>Total</b>	<b>2,106,262</b>	<b>17,862</b>	<b>2,533</b>	<b>95,908</b>	<b>115</b>	<b>50,642</b>	<b>60.9</b>

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.

\*In Brandenburg, some health authorities experienced a backlog in data entry and thus in data transmission to the RKI. In some cases, this leads to large discrepancies between locally reported incidences and case numbers compared to those reported by the RKI.

## 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 1,128,344 cases (54 %) thus their date of reporting is provided in Figure 1.

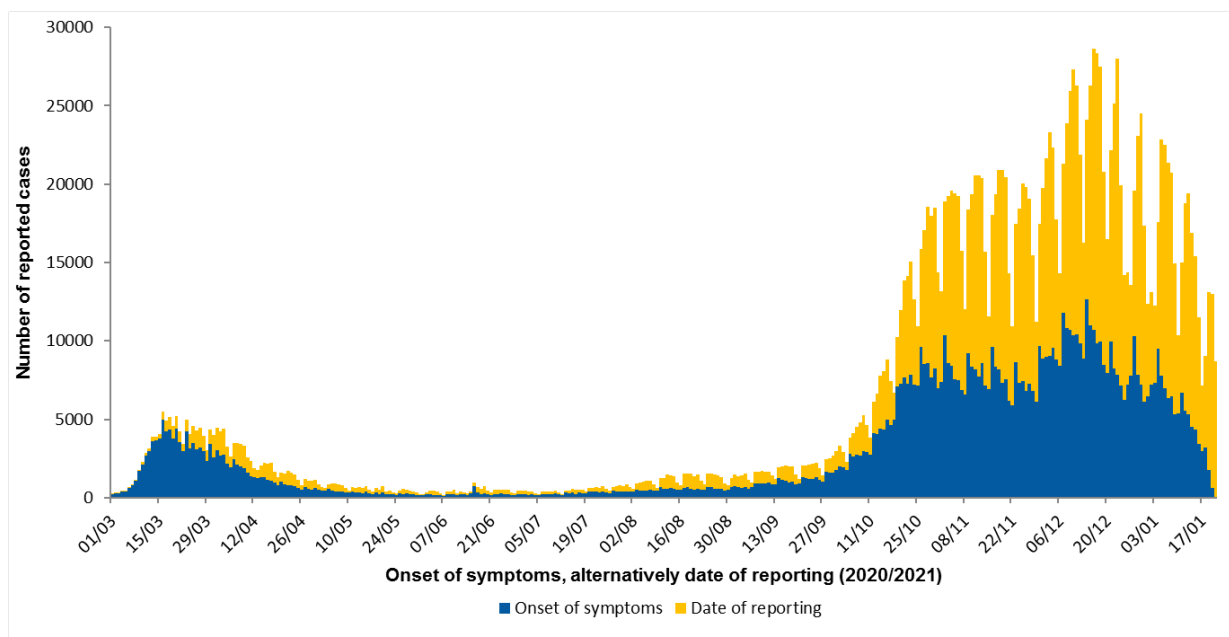


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (22/01/2021, 12:00 AM).

## 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	7-day R-value
0.95	0.97
(95%-prediction interval: 0.79 – 1.08)	(95%-prediction interval: 0.89 – 1.06)

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.

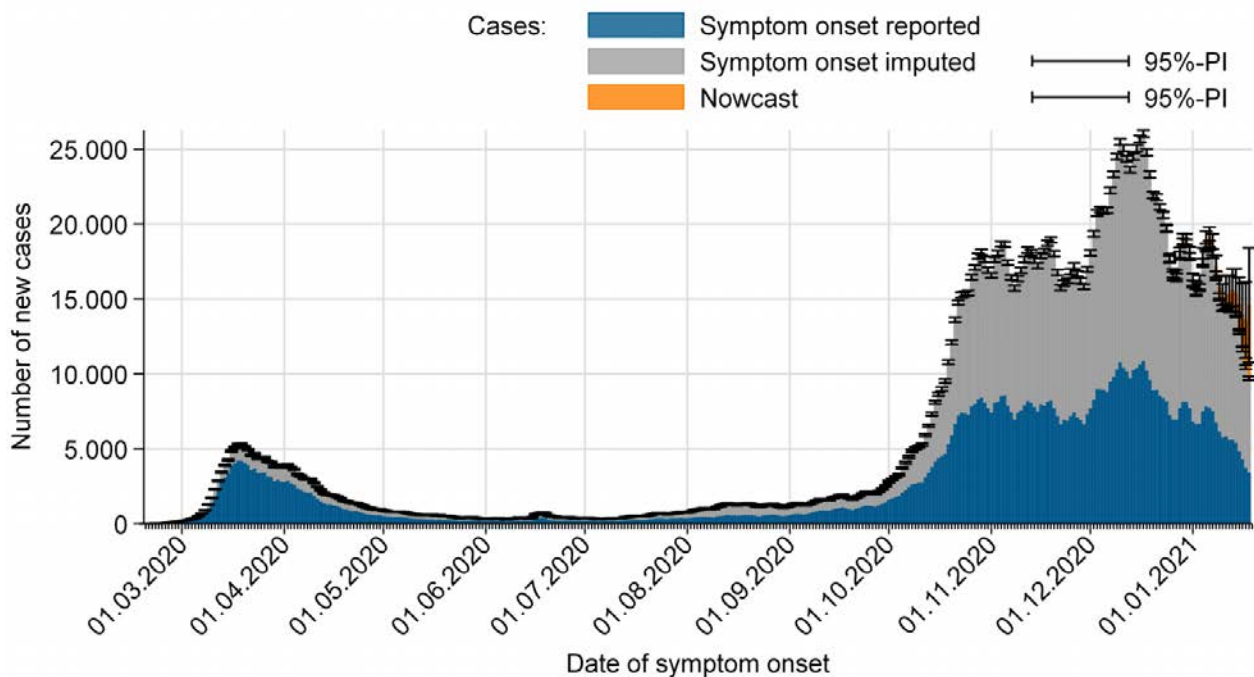


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 22/01/2021, 12 AM, considering cases up to 18/01/2021).

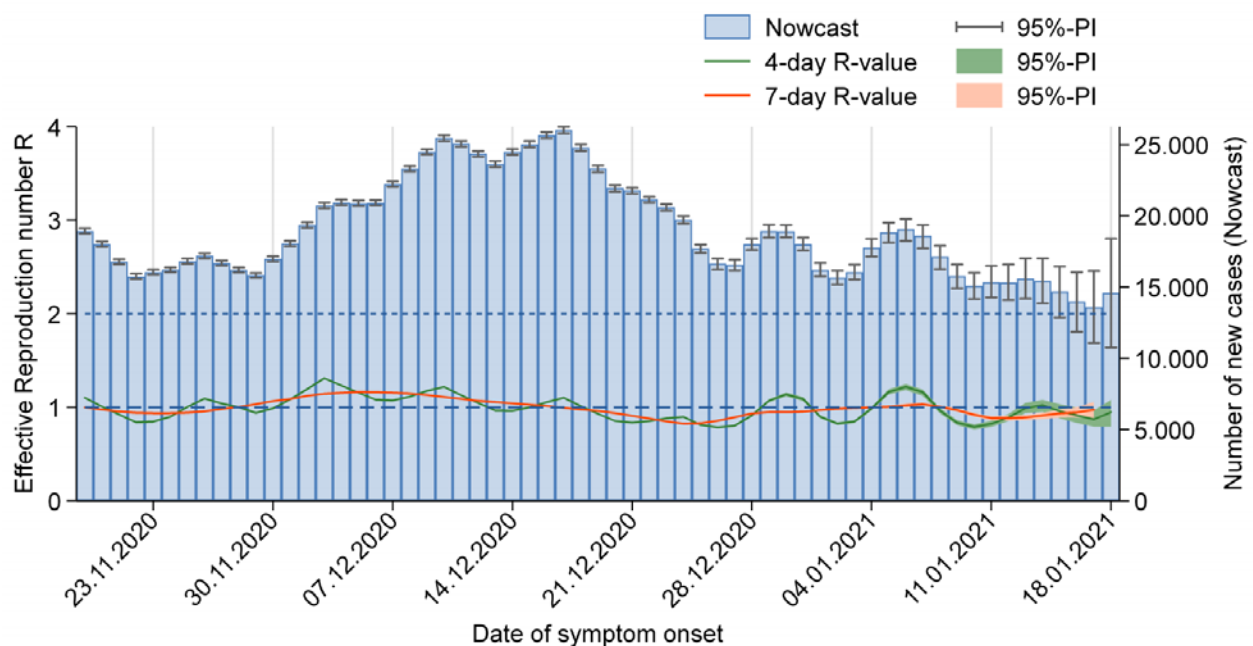


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 22/01/2021, 12 AM, considering cases up to 18/01/2021).

The R-value is currently **around 1**. Due to the very high number of infected persons in Germany, this means a high number of new infections per 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](http://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](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/#/index>).

As of 22/01/2021, a total of 1,281 hospitals reported to the DIVI registry. Overall, 27,034 intensive care beds were registered, of which 22,901 (85%) are occupied, and 4,133 (15%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 2.

Table 2: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (22/01/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	4,768	-19
	- thereof with invasive ventilation	2,692 (56%)	-40
	New admissions to ICU		+604
Total	Discharged from ICU	61,240	+623
	- thereof deaths	17,122 (28%)	+211 (34%)

\*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.

## Mortality Monitoring

A total of 27 European countries or regions provide the European EuroMOMO project (European monitoring of excess mortality for public health action) with official mortality statistics on a weekly basis which allows the detection and measuring of excess deaths related to e.g. seasonal influenza and pandemics (<https://www.euromomo.eu/>). In Germany, two regional systems that allow the transmission of data have been established so far (since 2007 in Berlin and Hesse). The establishment of a nationwide monitoring system is planned from 2021 onwards.

An increase in all-cause mortality was observed in conjunction with the COVID-19 pandemic primarily in April 2020. Excess mortality was observed primarily in persons 65 years of age and older, but also among those 15 to 64-years of age. Excess mortality was highest in Belgium, France, Italy, the Netherlands, Spain, Sweden, Switzerland and the UK. After a return to expected levels for most countries in May (with the exception of a heat-related peak in August), total all-cause mortality in the reporting countries has again increased above expected levels since calendar week 38. Mortality is particularly high in Austria, Belgium, France, Italy, the Netherlands, Portugal, Slovenia, Spain and Switzerland. The excess all-cause mortality is seen primarily in the age group of 45 years and above.

Weekly mortality statistics are also recorded on the website of the Federal Statistical Office, albeit with a certain time lag. Looking at the development by months, in March 2020 there was no noticeable increase in the number of deaths compared to March of the previous year. In April, however, all-cause mortality was considerably higher than the average of previous years; since the beginning of May, mortality decreased to expected levels, with the exception of a heat-related increase in August. In September, however, deaths again increased to 5% above the expected number based on the mean number of deaths observed from 2016 to 2019. In calendar week 52 (21/12 – 27/12/2020), 24,470

Note: The report is a snapshot and is continuously updated.



persons died (+504 compared to week 50). This is 31% more deaths than the average of the 4 previous years. In the previous week, the number of deaths exceeded the average for the previous years by 26%. <https://www.destatis.de/DE/Themen/Querschnitt/Corona/Gesellschaft/bevoelkerung-sterbefaelle.html> (in German), status from 22/01/2021.

## Risk Assessment by the RKI

In view of persistently high case numbers, the RKI currently assesses the threat to the health of the general population to be **very high**. The revised version highlights the increasingly diffuse SARS-CoV-2 transmission as well as the occurrence of outbreaks especially in households, occupational settings and nursing and senior care homes.

Therefore, more rigorous case finding and contact tracing as well as better protection of vulnerable groups is essential. Vulnerable persons can only be reliably protected if the number of new infections can be reduced substantially. On 12/01/2021, the risk assessment was updated with reference to the new SARS-CoV-2 variants. The current version can be found here:

[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Risikobewertung.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikobewertung.html) (in German)

## Measures taken in Germany

- Recommendations on COVID-19-vaccination (08.01.2020. in German) <https://www.rki.de/DE/Content/Infekt/Impfen/ImpfungenAZ/COVID-19/Impfempfehlung-Zusfassung.html>
- Further governmental resolutions regarding additional containment measures (Lockdown. 05/01/2021. in German) <https://www.bundesregierung.de/breg-de/themen/coronavirus/mpk-beschluss-corona-1834364>
- Vaccination started in Germany on the 26<sup>th</sup> of December 2020 <http://www.rki.de/covid-19-impfquoten> (in German)
- Regulation to entry to Germany (13/01/2021. in German) [https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3\\_Downloads/C/Coronavirus/Verordnungen/Corona-Einreiseverordnung\\_BAnz.pdf](https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/Verordnungen/Corona-Einreiseverordnung_BAnz.pdf)
- First Regulation Amending the Coronavirus Test Regulation (15/01/2021). in German) [https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3\\_Downloads/C/Coronavirus/Verordnungen/1\\_AEV\\_TestVO\\_BAnz.pdf](https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/Verordnungen/1_AEV_TestVO_BAnz.pdf)
- Information on the designation of international risk areas (17/01/2021) [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Risikogebiete\\_neu.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html)
- 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>
- National Testing Strategy – who will be tested for SARS-CoV-2 in Germany (30/11/2020. in German) [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Teststrategie/Nat-Teststrat.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Teststrategie/Nat-Teststrat.html)
- Important information and guidance on the novel coronavirus SARS-CoV-2 for returning travellers (08/11/2020) [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Transport/BMG\\_Merkblatt\\_Reisende\\_Tab.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/BMG_Merkblatt_Reisende_Tab.html)
- Selected and regularly updated information on COVID-19 <https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/COVID19.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>
- 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/>

## Annex

<sup>1</sup> The difference to the previous day relates to data entry at RKI; due to delay in data transmission former cases may be included.

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

<sup>3</sup> 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.

<sup>4</sup> Data on COVID-19 vaccinations are only updated on weekdays. On Sundays, no updated figures are reported.