



Coronavirus Disease 2019 (COVID-19)

Daily Situation Report of the Robert Koch Institute

20/01/2021 - UPDATED STATUS FOR GERMANY

Confirmed cases		7-day incidence (7-di)			Vaccination monitoring	DIVI-Intensive care register
Total ¹	Active cases ²	Total population	No. of districts with 7-di > 50/100,000 pop		No. of vaccinations reported in the last 48h ⁴	Change to previous day for cases currently in ICU
+15,974 (2,068,002)	-10,800 [ca. 277,400]	123 cases/ 100,000 pop	-5 [393/412]		+54,341 1 st vaccination +17,983 2 nd vaccination	-111 [4,836]
Recovered ³	Deaths	60-79 years	80+ years	No. of districts with 7-di > 100/100,000 pop	Total no. of vaccinated with one/two vaccine dose/s and share of population ⁴	Completed ICU treatment; thereof deceased [%]
+25,600 (ca. 1,741,800)	+1,148 (48,770)	95 cases/ 100,000 pop	268	-22 [255/412]	N1: 1,254,760 (1.5%) N2: 42,670	*

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

**Due to larger corrections done by several hospitals today's data are not available*

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 20/01/2021, 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, **15,974** new laboratory-confirmed COVID-19 cases as well as **1,148** new deaths associated with COVID-19 were transmitted to the RKI in Germany. The national 7-day incidence is **123** cases per 100,000 population. In Brandenburg, Saxony, Saxony-Anhalt, and Thuringia it is markedly above the national incidence.
- Of 412 districts, **393** have a high 7-day COVID-19 incidence. **255** districts have an incidence of >100 cases/100,000 population and of these, **26** districts have an incidence of >250-500 cases/100,000 population.
- The 7-day incidence of people 60-79 years is currently **95** and of people ≥80 years **268** 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 **20/01/2021**, **4,836** COVID-19 patients were in intensive care (-111 cases fewer than the day before). **Due to ongoing corrections by several hospitals, today's numbers of completed ICU treatments and new admissions to ICU as well as differences to the previous day are not reported.**
- Since 26/12/2020 a total of **1,254,760** people in Germany have been vaccinated once (vaccination rate **1.5%**) and **42,670** people **twice** against COVID-19 (<http://www.rki.de/covid-19-impfquoten>).
- In this situation report, the following additional information is given: **SARS-CoV-2 laboratory tests**

Epidemiological Situation in Germany

In accordance with the international standards of WHO¹ and ECDC², 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 slightly below 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 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.

Both 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) 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.

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 (Data closure: 12:00 AM daily). Since January 2020, a total of **2,068,002 (+15,974)** 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 (20/01/2021, 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.
Baden-Wuerttemberg	277,126	1,684	2,497	11,637	105	6,324	57.0
Bavaria	380,295	2,377	2,898	16,823	128	9,106	69.4
Berlin	113,875	820	3,103	4,713	128	1,918	52.3
Brandenburg*	59,485	839	2,359	5,266	209	1,738	68.9
Bremen	15,027	67	2,206	535	79	239	35.1
Hamburg	43,328	251	2,346	1,586	86	935	50.6
Hesse	160,738	1,329	2,556	7,605	121	4,190	66.6
Mecklenburg-Western Pomerania	17,170	268	1,068	1,803	112	324	20.1
Lower Saxony	130,467	901	1,632	7,221	90	2,768	34.6
North Rhine-Westphalia	456,855	3,279	2,546	20,286	113	9,473	52.8
Rhineland-Palatinate	86,124	565	2,104	4,115	101	2,145	52.4
Saarland	23,420	216	2,373	1,092	111	632	64.0
Saxony	168,943	1,258	4,149	7,862	193	5,307	130.3
Saxony-Anhalt	44,494	882	2,027	4,494	205	1,247	56.8
Schleswig-Holstein	31,842	451	1,097	2,594	89	691	23.8
Thuringia	58,813	787	2,757	5,072	238	1,733	81.2
Total	2,068,002	15,974	2,487	102,704	123	48,770	58.6

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 1,116,286 cases (54 %) thus their date of reporting is provided in Figure 1.

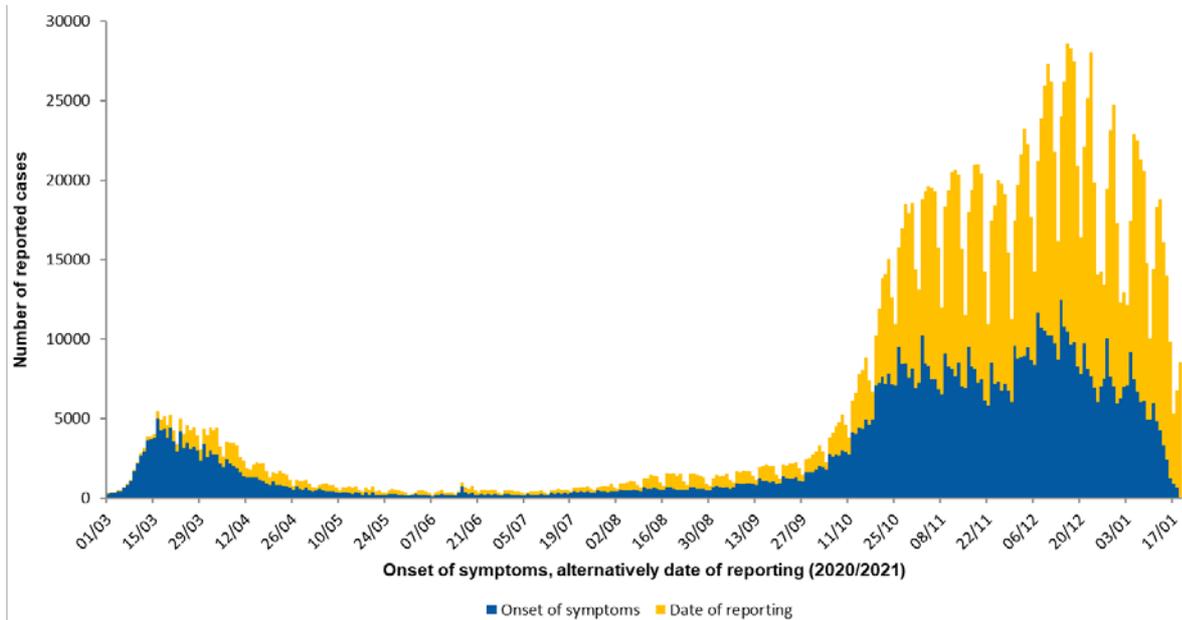


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (20/01/2021, 12:00 AM).

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
0.79	0.87
(95%-prediction interval: 0.69 – 0.90)	(95%-prediction interval: 0.81 – 0.93)

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.

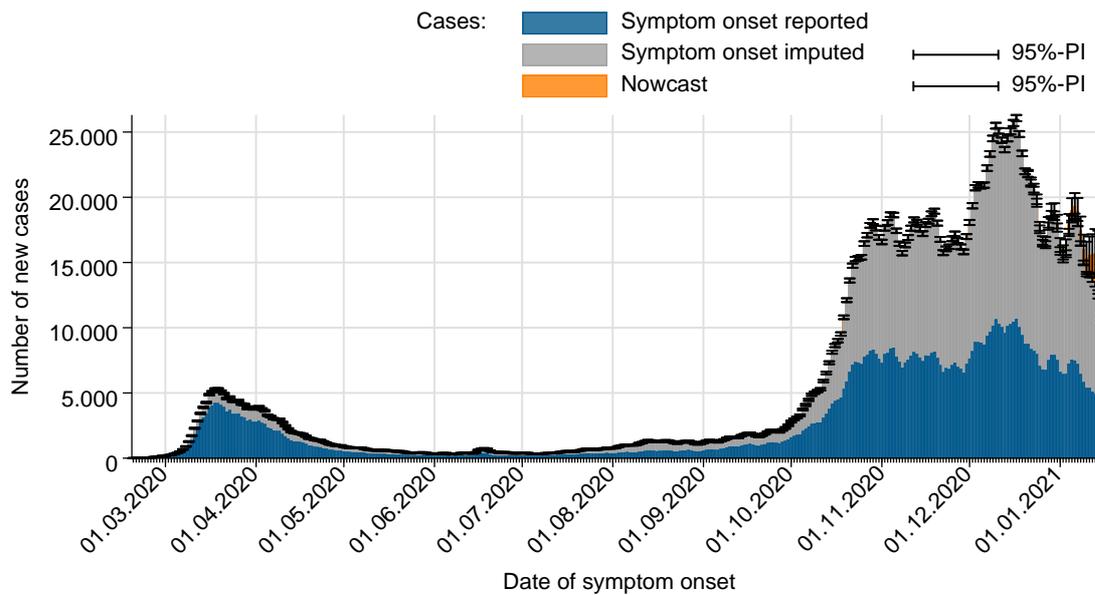


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 20/01/2021, 12 AM, considering cases up to 16/01/2021).

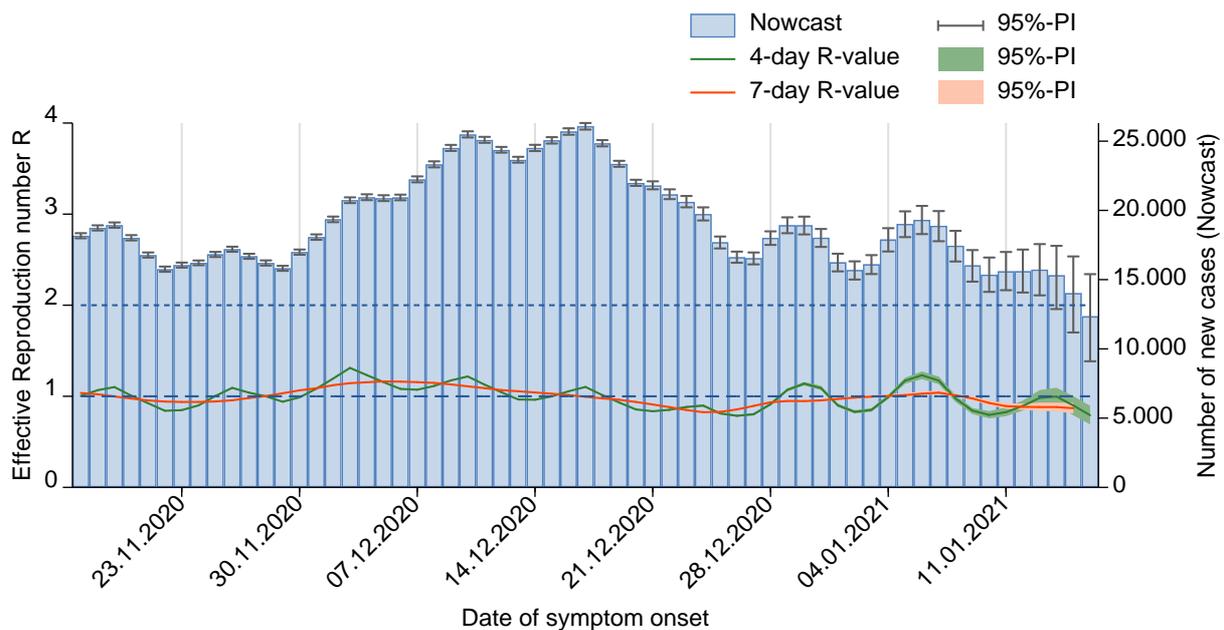


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 20/01/2021, 12 AM, considering cases up to 15/01/2021).

The R-value is currently slightly below 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. 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/#/index>).

As of 20/01/2021, a total of 1,281 hospitals reported to the DIVI registry. Overall, 27,076 intensive care beds were registered, of which 22,753 (84%) are occupied, and 4,323 (16%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 2.

Due to ongoing corrections by several hospitals, today's numbers of completed ICU treatments and new admissions to ICU as well as differences to the previous day are not reported.

Table 2: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (20/01/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	4,836	-111
	- thereof with invasive ventilation	2,777 (57%)	-85
	New admissions to ICU	NR	
Total	Discharged from ICU	59,848	NR
	- thereof deaths	16,695 (28%)	NR

*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.

Surveys on SARS-CoV-2 laboratory tests in Germany

To assess the SARS-CoV-2 PCR test numbers, data from university hospitals, research institutions as well as clinical and outpatient laboratories throughout Germany are merged weekly at the RKI. These data are ascertained on a voluntary basis and are transmitted to RKI via an internet-based RKI test laboratory survey, via the network for respiratory viruses (RespVir), via the laboratory-based SARS-CoV-2 Surveillance established at the RKI (an extension of the Antibiotic Resistance Surveillance (ARS)) and via the enquiry of a professional association of laboratory medicine.

Since the beginning of testing in Germany up to and including week 2/2021, 37,449,922 PCR-laboratory tests have been recorded to date, 2,142,435 of which have tested positive for SARS-CoV-2.

Up to and including week 2/2021, 258 laboratories have registered for the RKI test laboratory survey or in one of the other transmitting networks and transmit data upon reminder largely on a weekly basis. Since laboratories can register and correct the tests of the previous calendar weeks at a later date, it is possible that the ascertained numbers can increase retrospectively. It should be noted that the number of tests is not the same as the number of persons tested, as the data may include multiple tests of individual patients (Table 3) with data for the last 10 weeks – complete data since beginning of testing are available at <http://www.rki.de/covid-19-testzahlen> (in German)).

As testing criteria were adapted to the current situation of limited testing capacities in face of high case numbers and to take into account the common cold season, from week 46 onwards the proportion of positive tests cannot be compared directly to former weeks (Adapted testing criteria:

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

Table 3: Number of SARS-CoV-2-laboratory tests in Germany (as of 19/01/2021 12:00 pm)

Calendar week	Number of tests	Tested positive	Proportion positive (%)	Number of reporting laboratories
Up to & including week 45	24,698,203	859,995		
46/2020	1,396,088	125,200	8.97	199
47/2020	1,367,570	127,742	9.34	199
48/2020	1,353,980	125,451	9.27	203
49/2020	1,329,716	135,062	10.16	203
50/2020	1,445,671	165,953	11.48	201
51/2020	1,613,358	185,724	11.51	207
52/2020	1,077,066	138,761	12.88	204
53/2020	806,908	128,349	15.91	200
1/2021	1,214,379	154,988	12.76	198
2/2021	1,146,983	120,410	10.50	190
Total	37,449,922	2,142,435		

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 (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 26th 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
- 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

- Information on the designation of international risk areas (17/01/2021)
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
 - 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
 - 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

¹ The difference to the previous day relates to data entry at RKI; due to delay in 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.

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