



Coronavirus Disease 2019 (COVID-19)

Daily Situation Report of the Robert Koch Institute

23/01/2021 - 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
+16,417 (2,122,679)	+300 [ca. 275,800]	113 cases/ 100,000 pop	+1 [392/412]		+79,301 1st vaccination +27,435 2nd vaccination	-108 [4,660]
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 [%]
+15,200 (ca. 1,795,400)	+879 (51,521)	88 cases/ 100,000 pop	240	-13 [224/412]	N1: 1,469,353 (1.8%) N2: 163,424	+586 32%

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 23/01/2021, 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, **16,417** new laboratory-confirmed COVID-19 cases as well as **879** new deaths associated with COVID-19 were transmitted to the RKI in Germany. The national 7-day incidence is **113** cases per 100,000 population. In Brandenburg, Saxony, Saxony-Anhalt, and Thuringia it is markedly above the national incidence.
- Of 412 districts, **392** have a high 7-day COVID-19 incidence. **224** districts have an incidence of >100 cases/100,000 population and of these, **14** districts have an incidence of >250-500 cases/100,000 population.
- The 7-day incidence of people 60-79 years is currently **88** and of people ≥80 years **240** 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 **23/01/2021**, **4,660** COVID-19 patients were in intensive care. In the preceding 24 hours, **+586** existing patients had been discharged (**32%** of whom had died) and **+478** patients were newly admitted. The resulting number of cases under treatment was **108** less than the prior day.
- Since 26/12/2020 a total of **1,469,353** people in Germany have been vaccinated once (vaccination rate **1.8%**) and **163,424** people **twice** against COVID-19 (<http://www.rki.de/covid-19-impfquoten>).

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 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) 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 **2,122,679 (+16,417)** 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 (23/01/2021, 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	282,920	1,527	2.549	10,161	92	6,585	59.3
Bavaria	387,863	2,079	2.955	14,277	109	9,583	73.0
Berlin	116,119	613	3.164	3,851	105	2,021	55.1
Brandenburg*	62,813	816	2.491	4,564	181	1,896	75.2
Bremen	15,326	78	2.250	540	79	250	36.7
Hamburg	44,249	330	2.395	1,464	79	976	52.8
Hesse	164,944	1,091	2.623	7,259	115	4,362	69.4
Mecklenburg-Western Pomerania	18,108	282	1.126	1,703	106	355	22.1
Lower Saxony	134,927	1,510	1.688	7,111	89	2,945	36.8
North Rhine-Westphalia	467,471	3,332	2.605	19,028	106	9,895	55.1
Rhineland-Palatinate	88,612	757	2.164	4,141	101	2,263	55.3
Saarland	24,068	195	2.439	1,069	108	681	69.0
Saxony	173,272	1,394	4.255	6,879	169	5,670	139.2
Saxony-Anhalt	47,452	1,315	2.162	4,480	204	1,397	63.7
Schleswig-Holstein	33,245	425	1.145	2,675	92	741	25.5
Thuringia	61,290	673	2.873	4,470	210	1,901	89.1
Total	2,122,679	16,417	2.552	93,672	113	51,521	61.9

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 1,133,139 cases (53 %) thus their date of reporting is provided in Figure 1.

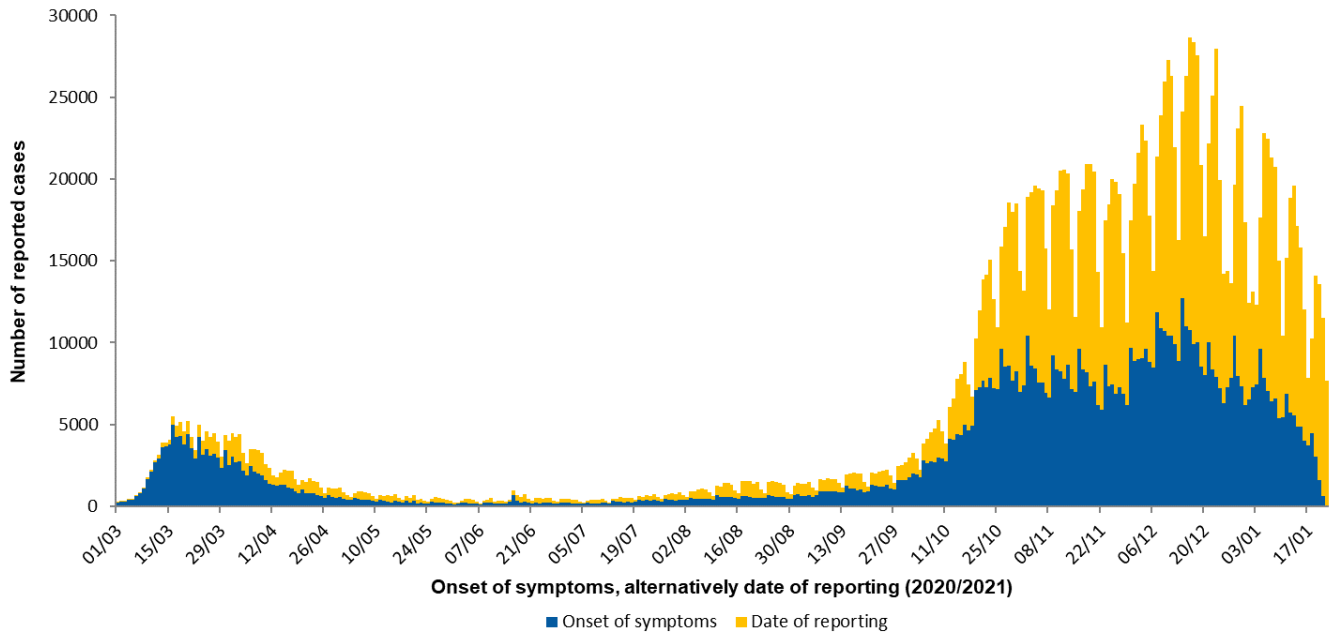


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (23/01/2021, 12:00 AM).

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
1.07	1.01
(95%-prediction interval: 0.9 – 1.25)	(95%-prediction interval: 0.93 – 1.11)

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.

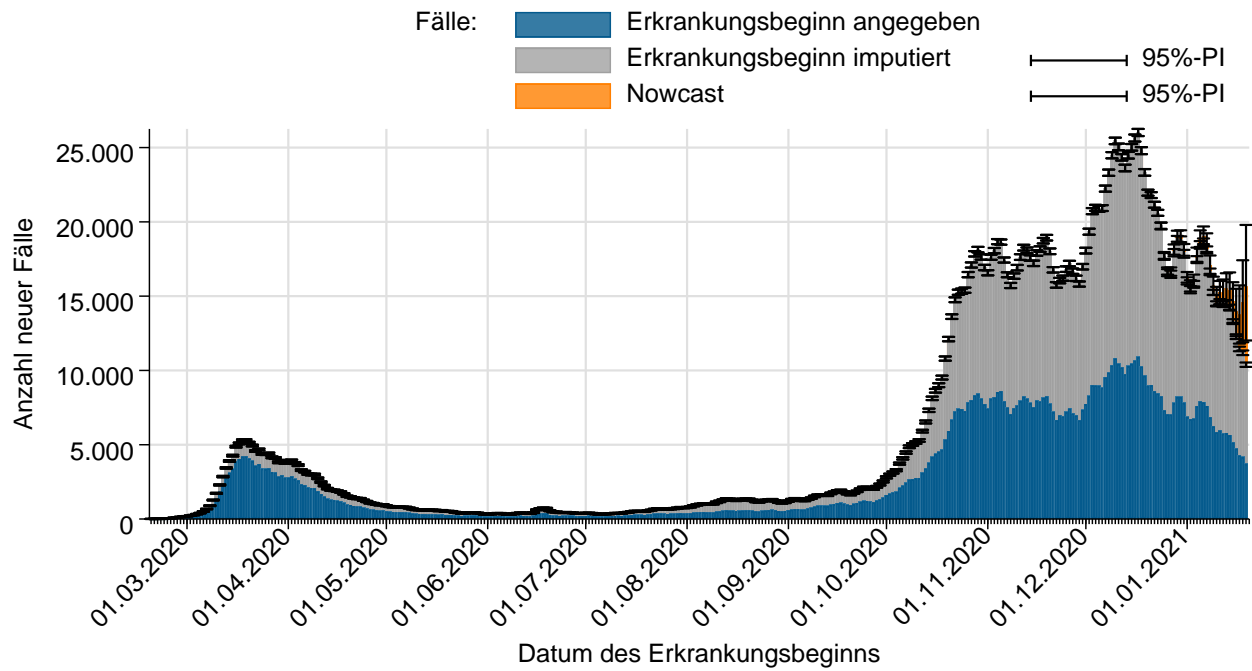


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 23/01/2021, 12 AM, considering cases up to 19/01/2021).

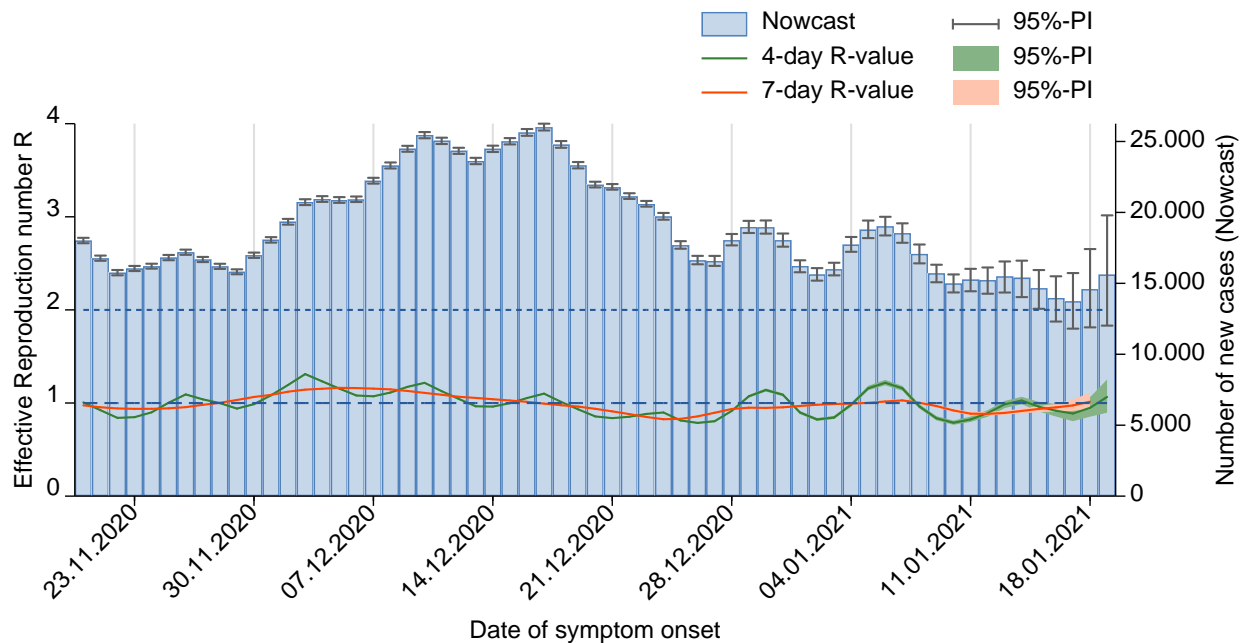


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 23/01/2021, 12 AM, considering cases up to 19/01/2021).

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. 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 23/01/2021, a total of **1,281** hospitals reported to the DIVI registry. Overall, **26,893** intensive care beds were registered, of which **22,506 (84%)** are occupied, and **4,387 (16%)** 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 (23/01/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	4,660	-108
	- thereof with invasive ventilation	2,614 (56%)	-78
	New admissions to ICU		+604
Total	Discharged from ICU	61,826	+586
	- thereof deaths	17,311 (28%)	+189 (32%)

*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 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

- [Information on the designation of international risk areas \(22/01/2021\)](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html)
- [German electronic Sequencing-Data-Hub \(DESH, Deutscher elektronischer Sequenzdaten-Hub\)](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/DESH/DESH.html) (21.02.2021, in German)

- 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
- 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.