



Coronavirus Disease 2019 (COVID-19)

Daily Situation Report of the Robert Koch Institute

16/01/2021 - 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 in last 24h ⁴	Change to previous day for cases currently in ICU
+18,678 (2,019,636)	+1,000 [ca. 315,800]	139 cases/ 100,000 pop		-2 [403/412]	+79.759	-59 [5,015]
Recovered ³	Deaths	60-79 years	80+ years	No. of districts with 7-di > 100/100,000 pop	Total no. of vaccinated with one vaccine dose ⁴	Completed ICU treatment; thereof deceased [%]
+16,600 (ca. 1,657,900)	+980 (45,974)	107 cases/ 100,000 pop	289 cases/ 100,000 pop	-15 [297/412]	1,048,160	+396 37 %

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

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.

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 16/01/2021, 12:00 AM)

- Currently, the number of transmissions in the population in Germany is high. RKI now judges the level of threat to the health of the general population as **very high**.
- Yesterday, **18,678** new laboratory-confirmed COVID-19 cases as well as **980** new deaths associated with COVID-19 were transmitted to the RKI in Germany. The national 7-day incidence is **139** cases per 100,000 population. In Brandenburg, Saxony, Saxony-Anhalt, and Thuringia it is markedly above the national incidence.
- All 412 districts have a high 7-day COVID-19 incidence. **297** districts have an incidence of >100 cases/100,000 population and of these, **32** districts have an incidence of >250-500 cases/100,000 population, and **one** district has an incidence of >500 cases/100,000 population.
- The 7-day incidence of people 60-79 years is currently **107** and of people ≥80 years **289** 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 **16/01/2021**, **5,015** COVID-19 patients were in intensive care. In the preceding 24 hours, **396** existing patients had been discharged (**37 %** of whom had died) and **337** patients were newly admitted. The resulting number of cases under treatment was **59 less** than the prior day.
- Since 26/12/2020 a total of **1,048,160** people in Germany have been vaccinated against COVID-19 (**12.6** vaccinated per 1,000 population) (<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 stabilize.

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.

On 19/12/2020, a new virus variant (B.1.1.7) was reported in the UK. To date, it is unknown how the new virus variant will affect the COVID-19 pandemic. Cases with the new variant have already been detected in numerous countries around the world. So far, a few cases of this new variant in Germany have been reported to the RKI. Further cases may be expected. WHO has also reported another new virus variant detected in South Africa possibly associated with higher transmissibility and more severe disease. Isolates of this lineage have also been identified sporadically in Germany.

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 **2,019,636 (+18,678)** 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 (16/01/2021, 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	271,976	1,940	2,450	13,665	123	6,050	54.5
Bavaria	372,696	3,024	2,840	19,449	148	8,639	65.8
Berlin	111,730	990	3,045	5,791	158	1,800	49.1
Brandenburg	56,036	634	2,222	5,086	202	1,549	61.4
Bremen	14,796	97	2,172	545	80	230	33.8
Hamburg	42,349	279	2,293	1,836	99	895	48.5
Hesse	157,255	1,128	2,501	8,106	129	3,907	62.1
Mecklenburg-Western Pomerania	16,361	372	1,017	1,862	116	296	18.4
Lower Saxony	127,115	1,932	1,590	7,889	99	2,604	32.6
North Rhine-Westphalia	447,493	3,334	2,493	21,919	122	9,033	50.3
Rhineland-Palatinate	84,229	753	2,057	4,655	114	2,035	49.7
Saarland	22,939	197	2,324	1,174	119	606	61.4
Saxony	165,292	1,823	4,059	10,416	256	4,982	122.3
Saxony-Anhalt	42,249	855	1,925	5,148	235	1,089	49.6
Schleswig-Holstein	30,581	422	1,053	2,535	87	648	22.3
Thuringia	56,539	898	2,650	5,724	268	1,611	75.5
Total	2,019,636	18,678	2,428	115,800	139	45,974	55.3

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 **1.100.044** cases (**54 %**) thus their date of reporting is provided in Figure 1.

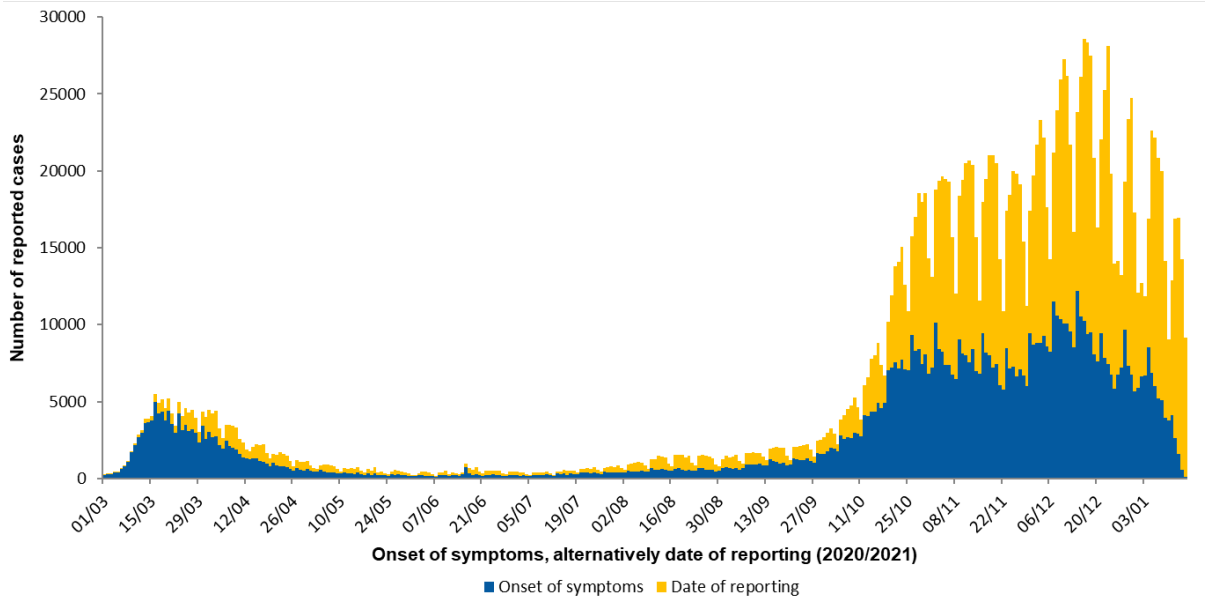


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (16/01/2021, 12:00 AM).

Outbreaks

An increased incidence of >25 cases in 7 days/100.000 population was reported in all 412 districts. There are 32 districts with incidences of >250 to 500 cases/100.000 in the last 7 days and there was one district with an incidence of >500 cases/100.000 in the last 7 days. The dashboard shows all affected districts (<https://corona.rki.de>).

In most districts, the transmission is diffuse with many outbreaks particularly in retirement and nursing homes, occupational settings and private households. In some counties, a specific, larger outbreak is known to be the cause of the high incidence. Many smaller outbreaks continue to contribute to the elevated incidence, for example outbreaks in hospitals.

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
0.99
(95%-prediction interval: 0.84 – 1.12)

7-day R-value
0.95
(95%-prediction interval: 0.87 – 1.03)

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.

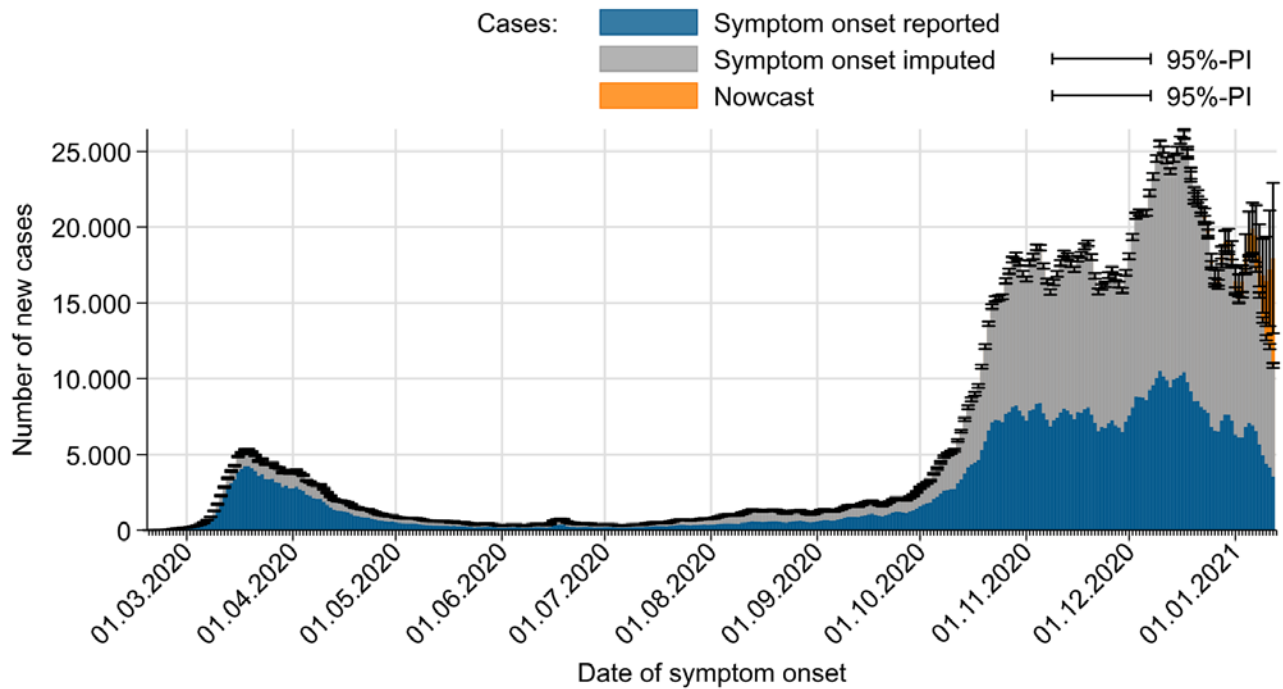


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 16/01/2021,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

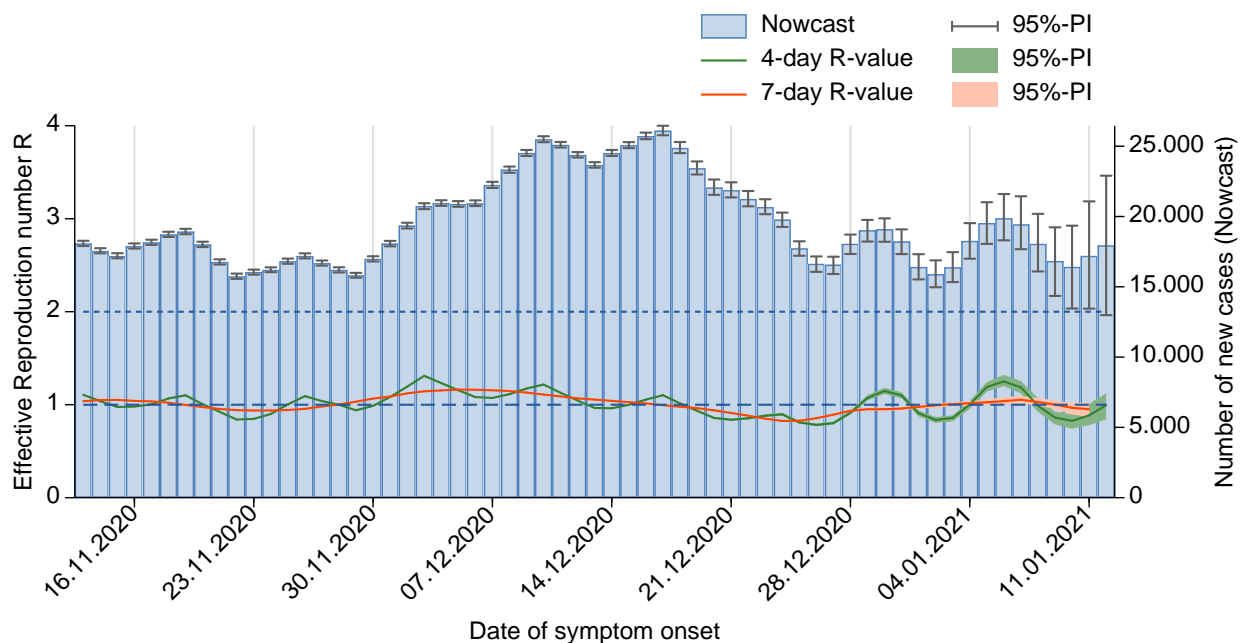


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 16/01/2021, 12 AM, considering cases up to 12/01/2021).

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 16/01/2021, a total of **1.281** hospitals or departments reported to the DIVI registry. Overall, **26.876** intensive care beds were registered, of which **22.341 (83 %)** are occupied, and **4.535 (17 %)** 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 (16/01/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	5,015	-59
	- thereof with invasive ventilation	2,865 (57%)	-71
	New admissions to ICU		+337
Total	Discharged from ICU	60,830	+396
	- thereof deaths	16,478 (27%)	+147 (37%)

*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 now judges 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 protect against entry-related infection risks regarding novel mutations of the coronavirus SARS-CoV-2 (21/12/2020. *in German*)
https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/Verordnungen/CoronaSchV_BAnz_AT_21.12.2020_V4.pdf
- Information on the designation of international risk areas
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/>