



Coronavirus Disease 2019 (COVID-19)

Daily Situation Report of the Robert Koch Institute

05/01/2021 - 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	Change to previous day for cases currently in ICU
+11,897 (1,787,410)	-12,500 [327,200]	135 cases/ 100.000 pop	-2 [391/412]	+44,563	-66 [5,678]
Recovered ³	Deaths	60-79 years	80+ years	Total no. of vaccinated with one vaccine dose	Completed ICU treatment; thereof deceased [%]
+23,500 (ca.1,424,700)	+944 (35,518)	111 cases/ 100.000 pop	275 cases/ 100.000 pop	316,962	+868 37%
		No. of districts with 7-di > 100/100,000 pop			
		-3 [292/412]			

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.

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 05/01/2021, 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, **11,897** new laboratory-confirmed COVID-19 cases as well as **944** new deaths associated with COVID-19 were transmitted to the RKI in Germany. The national 7-day incidence is **135** cases per 100,000 population. In Saxony and Thuringia, it is markedly above the national incidence.
- All 412 districts have a high 7-day COVID-19 incidence. **289** districts have an incidence of >100 cases/100,000 population and of these, 42 districts have an incidence of >250-500 cases/100,000 population and 2 districts of >500 cases/100,000 population.
- The 7-day incidence of people 60-79 years is currently **111** and of people ≥80 years **275** cases/100,000 population.
- The high nationwide number of cases is caused by increasingly diffuse transmission, with numerous clusters especially in households and nursing and long-term care homes.
- On 05/01/2021 (12:15 PM) **5,678** COVID-19 patients were in intensive care. In the preceding 24 hours, **868** existing patients were discharged (37% of whom had died) and **802** patients were newly admitted. The resulting number of cases under treatment was **66** less than the prior day.
- Since 26/12/2020 a total of **316,962** people in Germany have been vaccinated against COVID-19 (<http://www.rki.de/covid-19-impfquoten>).
- Testing and notification activities **may have** been lower during the festive season, resulting in a putatively incomplete picture of the epidemiological situation in Germany **of the previous two weeks**.

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

Since the beginning of December, there has been a renewed sharp rise in the number of cases. During the holidays, the number of cases decreased. Whether the number of infections is actually declining will only become clear in the course of the next few days.

The R-value is currently **below** 1. Nevertheless, the daily number of new cases remains high due to the large number of current cases. Furthermore, during the festive season the detection, notification and transmission of COVID-19-cases is delayed, thus the R-value may be underestimated.

Outbreaks are being reported from various districts throughout Germany, **currently particularly in nursing and long-term care homes 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 12/19/2020, a new virus variant (B.1.1.7) was reported in the UK. The ECDC has published a Risk Assessment on 29/12/2020. 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. It is expected that infections with the new variant will be detected in further countries. So far, a few cases of this new variant have been transmitted 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.

Due to the holidays, it should be noted when interpreting the case numbers that, on the one hand, fewer people usually visited a doctor, as a result of which fewer samples were taken and fewer laboratory tests were performed. This may lead to fewer notified cases at the local level and hence to fewer transmitted COVID-19 cases to the RKI. Furthermore, not all local and state health authorities transmit data to the RKI on all days.

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 **1,787,410 (+11,897)** 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 (05/01/2021, 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 per 100,000 pop.	Number of deaths	Number of deaths/100,000 pop.
Baden-Wuerttemberg	246,440	1,510	2,220	13,836	125	5,052	45.5
Bavaria	337,095	2,528	2,568	21,018	160	7,163	54.6
Berlin	99,525	771	2,712	4,260	116	1,327	36.2
Brandenburg	43,163	276	1,712	3,616	143	1,015	40.2
Bremen	13,803	56	2,026	547	80	208	30.5
Hamburg	37,879	344	2,051	1,882	102	671	36.3
Hesse	141,012	641	2,243	8,244	131	3,095	49.2
Mecklenburg-Western Pomerania	12,738	176	792	1,552	97	189	11.8
Lower Saxony	111,453	676	1,394	7,057	88	2,101	26.3
North Rhine-Westphalia	404,488	1,969	2,254	20,990	117	7,010	39.1
Rhineland-Palatinate	74,962	527	1,831	4,699	115	1,531	37.4
Saarland	20,272	73	2,054	859	87	455	46.1
Saxony	141,002	1,302	3,463	12,165	299	3,412	83.8
Saxony-Anhalt	32,480	397	1,480	3,878	177	704	32.1
Schleswig-Holstein	25,986	235	895	2,240	77	475	16.4
Thuringia	45,112	416	2,115	5,159	242	1,110	52.0
Total	1,787,410	11,897	2,149	112,002	135	35,518	42.7

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.

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

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 **995,739** cases (56%) thus their date of reporting is provided in Figure 1.

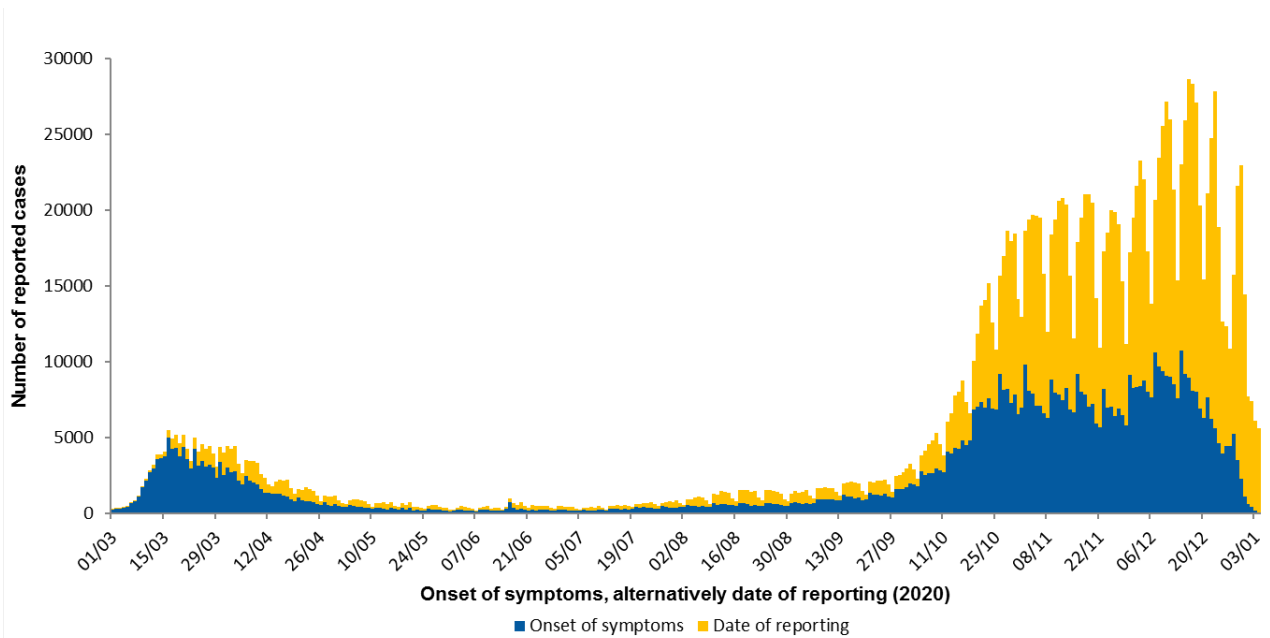


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (05/01/2021, 12:00 AM).

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

Demographic distribution of cases

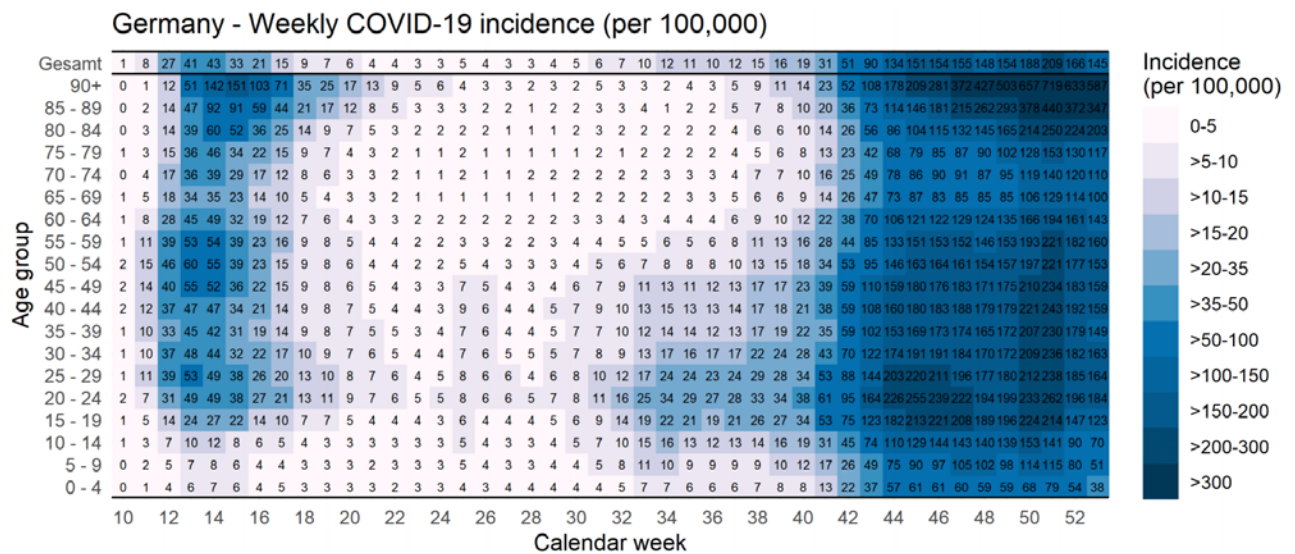


Figure 2: 7-day-incidence of notified COVID-19 cases by age group and reporting week (n=1,656,449 cases with respective data in the weeks 10 to 53 (05/01/2021, 12:00 AM)).

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

The age-specific 7-day incidence is shown using a heatmap (Figure 2). Age-specific case numbers and age-specific 7-day incidences can be accessed at: www.rki.de/covid-19-altersverteilung.

The first wave of the pandemic in Germany started in week 11 with a high 7-day incidence in 20-59-year-olds followed by a rising incidence in the over-80 years old until week 15, which fell again until week 24. Since reporting week 32, the nationwide 7-day incidence has increased steadily starting in younger age-groups, and since reporting week 41 also in older age groups. **Until week 51** an increase of the 7-day incidence **could** be seen in all age groups, especially in the age groups 80 years and older. **Whether the decrease in the 7-day incidence since week 52 across all age groups is actually a trend or is caused solely by the limited detection, notification and transmission of COVID-19 cases during the holidays season will become clearer in the coming few weeks.**

Clinical aspects

Information on symptoms is available for 1,094,084 (61%) of the notified COVID-19 cases. Table 2 shows the number and percentage of COVID-19 relevant or most common symptoms.

Clinical feature	N with information	N with clinical feature	% with clinical feature
cough	1,094,084	432,887	40%
fever	1,094,084	300,929	28%
rhinorrhoea	1,094,084	295,181	27%
sore throat	1,094,084	230,790	21%
pneumonia	1,094,084	14,675	1%
ageusia and anosmia*	949,281	200,769	21%

Table 2: Cases with COVID-19 relevant or most common symptoms (05/01/2021, 12:00 AM). *Ageusia and anosmia have been reported since week 17.

**During the festive season COVID-19 cases are detected, notified and transmitted with delays.

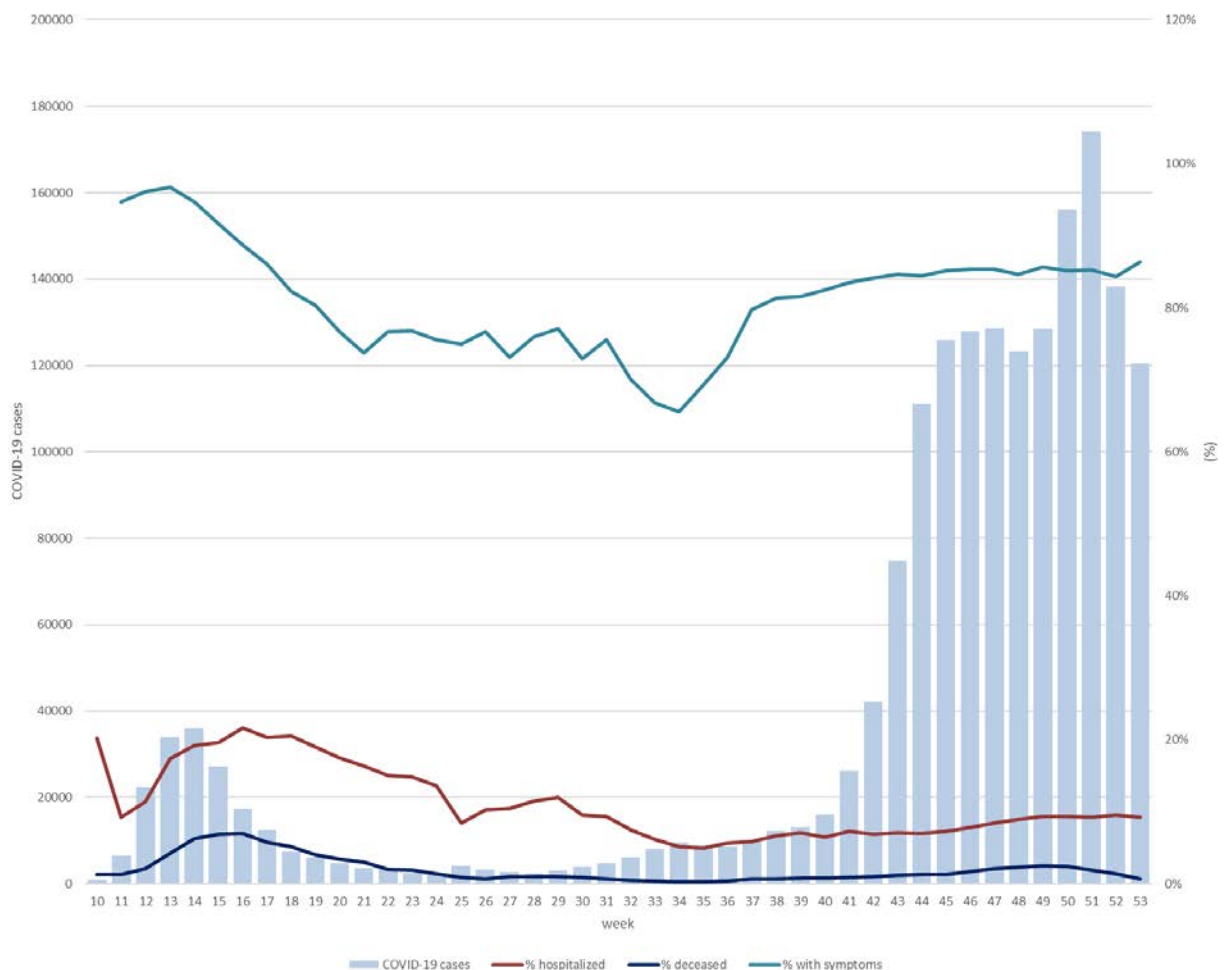


Figure 3: Depiction of the COVID-19 cases and proportion of deceased as well as proportion of hospitalized and COVID-19 cases with relevant symptoms, in relation to the respective number with corresponding data between week 10 – 53. See the underlying data table at www.rki.de/covid-19-tabelle-klinische-aspekte

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

Figure 3 displays the percentages of deceased, hospitalized and cases with COVID-19 relevant symptoms. The percentage of deaths among cases was less than 1% between week 30 and 41. An increasing trend is visible from week 36 onwards. In the weeks 47 to 49 it is between 2.1 and 2.5%. As deaths occur on average only 2-3 weeks after infection, further reports of deaths among currently reported cases are expected for weeks 50-53. The proportion of hospitalized COVID-19 cases increased from 5% in week 35 to 10% in week 52. The percentage of cases with COVID-19 relevant symptoms is since week 38 over 80%. These percentages may equally change due to delayed reporting and data corrections. During the summer (weeks 26-36) these proportions were lower at 65% and 77%. During that time period returning travelers were increasingly tested, among whom asymptomatic infections were detected more frequently. The data on which the figure is based and that were published here on previous Tuesdays can be found at:

www.rki.de/covid-19-tabelle-klinische-aspekte

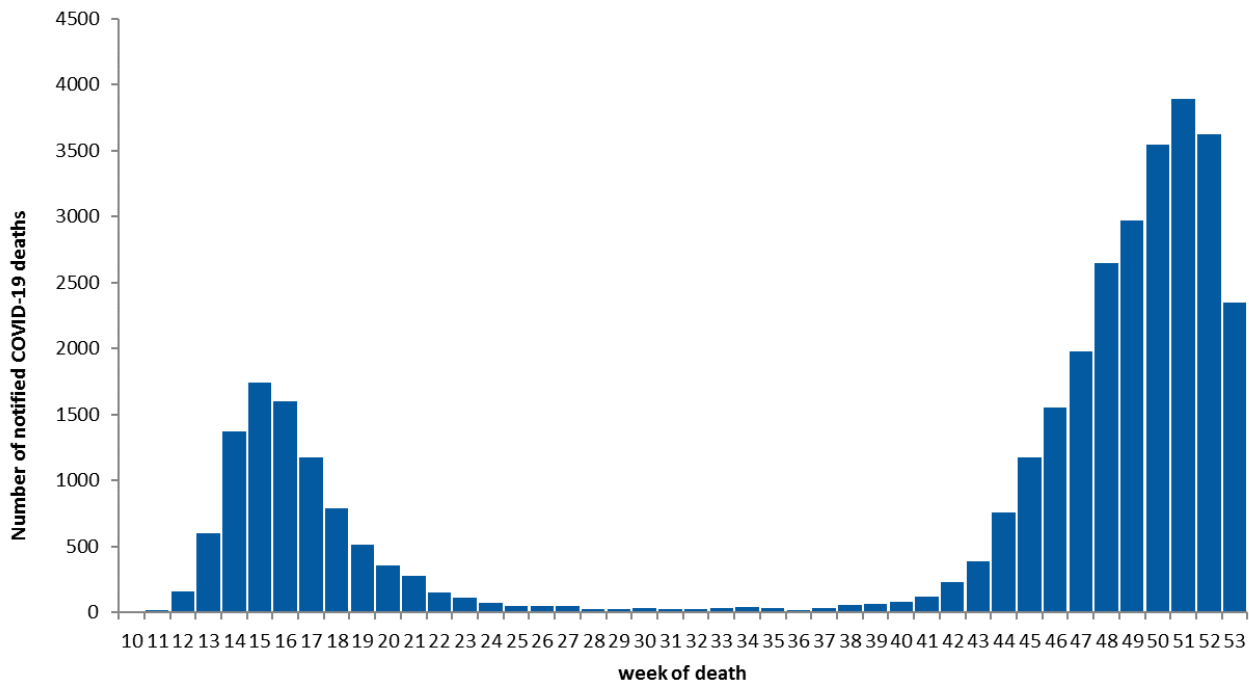


Figure 4: Number of notified COVID-19 deaths according to week of death for the reporting weeks 10 - 52 (05/01/2021, 12:00 AM).

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

The figures on the first page show the number of deaths reported daily according to date of entry at RKI. This may also include cases with a date of death several days in the past. Figure 4 shows the reported COVID-19 deaths by calendar week according to the date of death. For recent weeks, further reports of deaths among reported cases can be expected.

A significant increase in the number of deaths was observed since week 37. Of all deaths, 31,402 (88%) were among people aged 70 years or older, with a median age of 84 years (Table 3), while this age group accounts for only 15% of all cases. Thus far, 17 deaths among COVID-19 cases under 20 years of age have been reported to the RKI. Child deaths are still being validated.

Table 3: Number of notified COVID-19 deaths by age group and gender electronically reported to RKI (Data available for 35,452 notified deaths; 05/01/2021, 12:00 AM)

Gender	Age group (in years)									
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+
Male	4	4	20	45	156	688	1,934	4,553	8,411	2,730
Female	9		13	26	77	271	803	2,458	8,060	5,190
Total	13**	4**	33	71	233	959	2,737	7,011	16,471	7,920

*Cases are currently being validated.

**During the festive season COVID-19 cases are detected, notified and transmitted with delays.

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

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.

Table 4: 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=232,984 cases; 05/01/2021, 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	14,588	10,452 / 72%	9,250	2,030	10,300
	Occupation in facility	46,870	3,621 / 8%	1,458	44	42,600
§ 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*	45,334	n.a.	491	3	43,600
	Occupation in facility	22,615	1,762 / 8%	494	18	21,500
§ 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	69,149	53,371 / 77%	10,892	9,897	47,900
	Occupation in facility	34,428	4,032 / 12%	929	106	30,700

*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.

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

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 4). 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.

Possible countries of exposure

In weeks 50 to 53, of the 588,899 reported COVID-19 cases, information regarding the country of exposure was missing in 310,328 (53%) cases. In reporting week 11, the proportion of all cases was 46% for cases that had a possible foreign country as place of exposure. It then fell steadily to 0,4% in reporting week 19 as a result of travel restrictions.

As of reporting week 25, borders reopened, initially in Europe, after which the proportion of cases reporting a probable country of infection abroad markedly increased. It peaked in week 34 at 49% and declined again since then. The absolute number of cases with exposure abroad was stable after the end of the summer vacation period (week 38) to week 45 with an average of 1,700 cases per week. Since then, it has decreased to currently 284 cases in week 53. In weeks 50-53, a total of 1,324 persons (less than 0.3% of all cases) reported a possible site of infection abroad.

Travelers from a COVID-19 risk area within 14 days of entry into Germany must maintain a 10-day quarantine unless they have a negative test result from a test taken five days after arrival (for further details see <https://www.bundesgesundheitsministerium.de/coronavirus-infos-reisende>).

Outbreaks

An increased incidence of >25 cases in 7 days/100,000 population was reported for every district (412/412). There are 42 districts with incidences of >250 to 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 many outbreaks particularly in retirement and nursing homes 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 5), 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 6.

4-day R-value	7-day R-value
0.66	0.81
(95%-prediction interval: 0.56 – 0.78)	(95%-prediction interval: 0.75 – 0.87)

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. During the festive season COVID-19 cases are detected, notified and transmitted with delays, thus the R-value may be under-estimated.

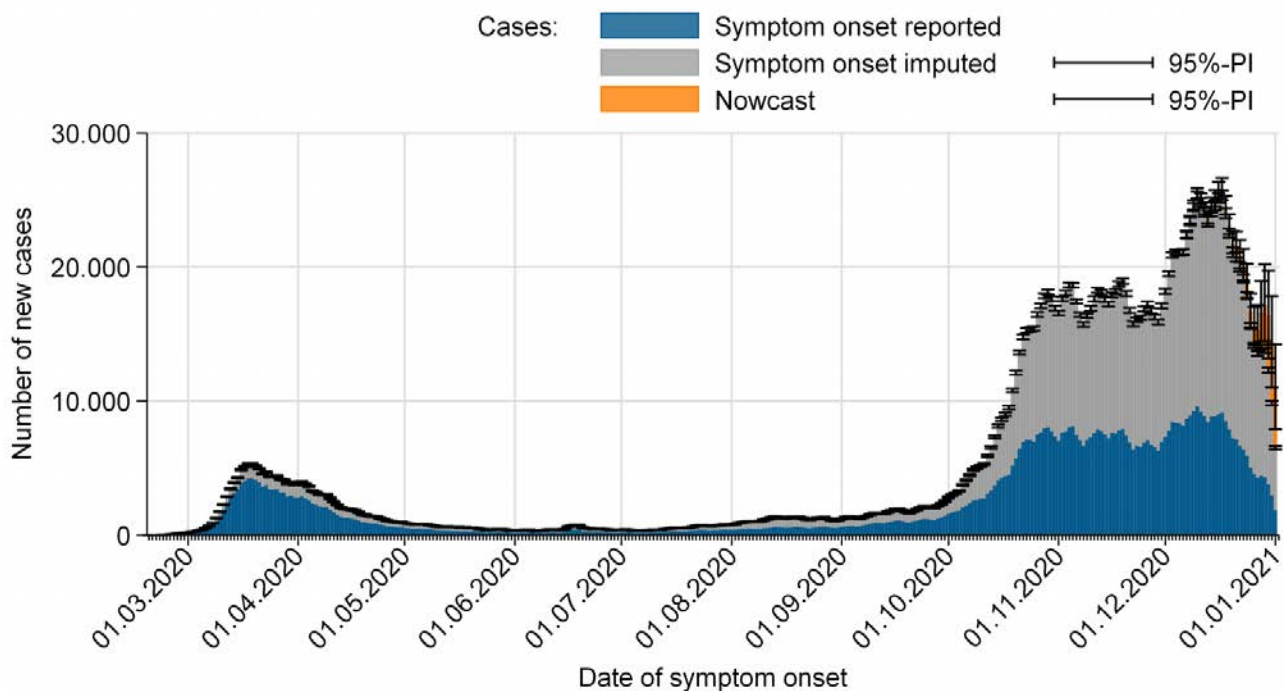


Figure 5: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 05/01/2021, 12 AM, considering cases up to 01/01/2021).

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

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

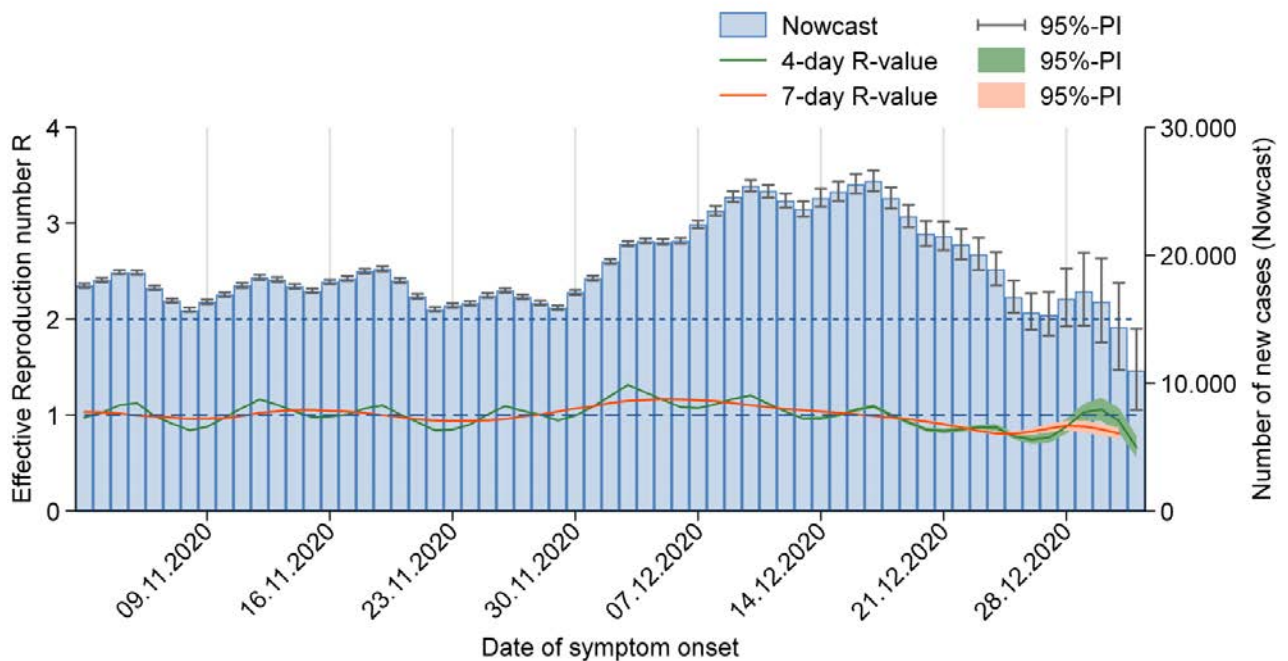


Figure 6: The estimated R-values (in green and orange) over the last 60 days, against the background of estimated number of COVID-19 cases according to illness onset (as of 05/01/2021, 12 AM, considering cases up to 01/01/2021).

*During the festive season COVID-19 cases are detected, notified and transmitted with delays.

The R-value is currently **below** 1. Nevertheless, the daily number of new cases remains high due to the large number of current cases. Furthermore, during the festive season the detection, notification and transmission of COVID-19-cases is delayed, thus the R-value may be underestimated.

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 04/01/2021, a total of 1,286 hospitals or departments reported to the DIVI registry. Overall, 26,875 intensive care beds were registered, of which 22,369 (83%) are occupied, and 4,506 (18%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 5.

Table 5: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (05/01/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	5,678	-66
	- thereof with invasive ventilation	3,181 (56%)	-30
	New admissions to ICU		+802
Total	Discharged from ICU	53,143	+868
	- thereof deaths	14,128 (27%)	+318 (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 substantially reduced. 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

- Vaccination started in Germany on the 26th of December 2020
- 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
- Recommendations on COVID-19-vaccination (17.12.2020. *in German*)
<https://www.rki.de/DE/Content/Infekt/Impfen/ImpfungenAZ/COVID-19/Impfempfehlung-Zusfassung.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>
- Further governmental resolutions regarding additional containment measures (Lockdown. 13/12/2020. *in German*) <https://www.bundesregierung.de/breg-de/themen/coronavirus/merkel-beschluss-weihnachten-1827396>
- 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/>
- 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-bundekanzlerin-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.