



Coronavirus Disease 2019 (COVID-19) Daily Situation Report of the Robert Koch Institute

31/07/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
208,698 (+ 870*)	9,141 (+ 7*)	4.4%	ca. 192.300**

*Change from previous day; **Estimate

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 31/07/2020 12:00 AM)

- In the past few weeks, the number of districts that have not reported any COVID-19 cases over a period of 7 days has decreased clearly. In parallel, the COVID-19 incidence has risen in many federal states. This trend is concerning.
- The cumulative nationwide incidence over the past 7 days was **5.0** cases per 100,000 inhabitants and thus further increased slightly, albeit at a low level. A total of **76** districts transmitted zero cases over the past 7 days. Moreover, in **209** districts the 7-day-incidence is below 5.0/100,000 inhabitants.
- In total, **208,698** laboratory-confirmed COVID-19 cases and **9,141** deaths due to COVID-19 have been electronically reported to the RKI in Germany.
- In the Bavarian district of Dingolfing-Landau a COVID-19 related outbreak occurred with >150 cases among harvest workers of an agricultural company. The entire company with over 450 employees is under quarantine.
- Moreover, COVID-19-related outbreaks occur in various settings, including nursing homes and hospitals, facilities for asylum-seekers and refugees, as well as in context of religious or family events.
- **Due to technical problems today the sections for the demographic distribution of cases and deaths and for the occupation, accommodation or care in facilities are not reported.**

Epidemiological Situation in Germany

General current assessment

An increase in COVID-19 case numbers since last week occurred in many of the federal states.

Nationwide, there are many smaller case outbreaks in different administrative districts in various settings, such as larger family events, leisure activities, occupational settings, but also in community and health facilities. In addition, COVID-19 cases are increasingly being identified among people returning from travel abroad.

The number of new cases reported daily has been increasing since last week. This development is very concerning and will continue to be monitored very closely by the RKI. A further worsening of the situation must be avoided. This will only succeed if the entire population continues to be committed to decreasing transmission, e.g. by consistently observing rules of distance and hygiene - also in outdoor settings -, by airing indoor areas and, where necessary, wearing a community or face mask correctly.

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 **208,698 (+870)** laboratory-confirmed cases of COVID-19 have been electronically reported to and validated by the RKI (see Table 1). A total of **76** districts reported no cases in the past 7 days. In the past few weeks, the number of districts that have not submitted any COVID-19 cases over a period of 7 days has decreased continuously; on 12th July still, the number of districts reporting zero cases was 125.

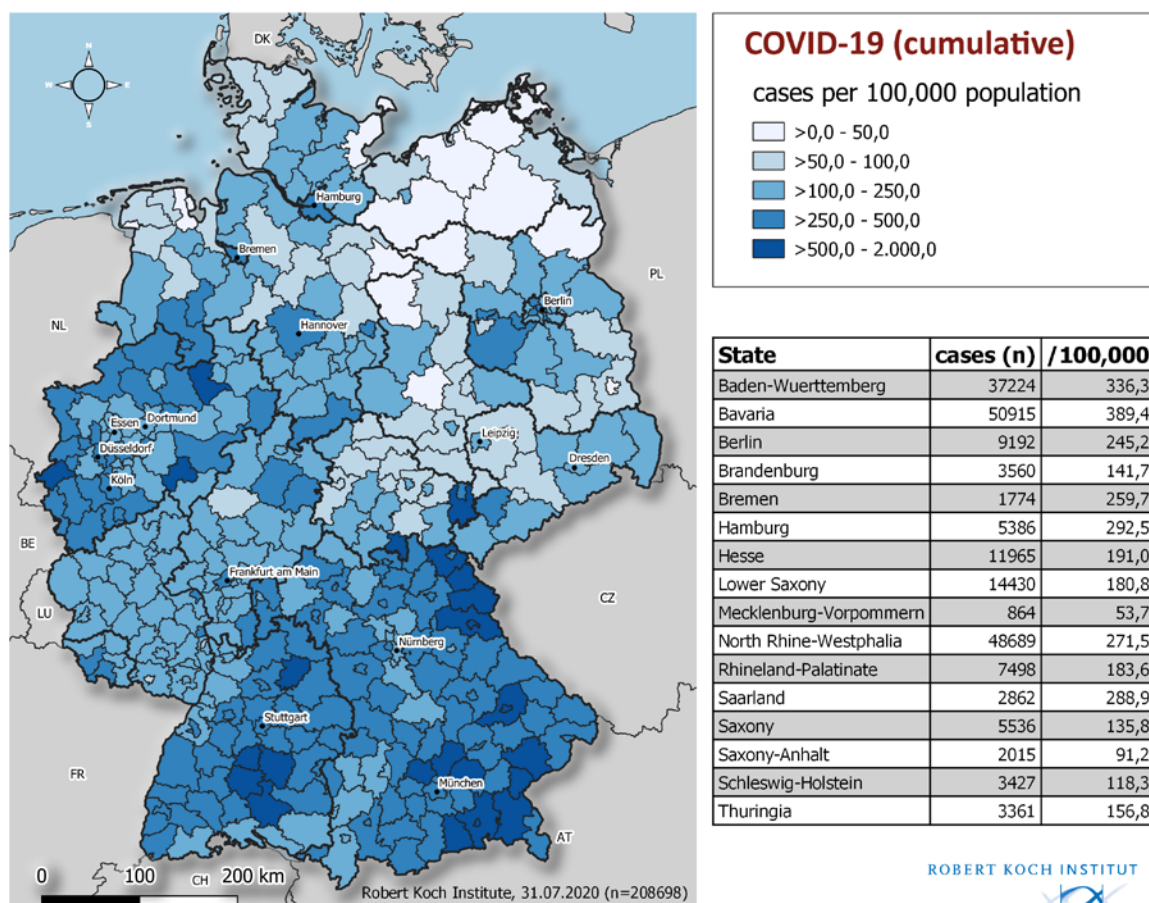


Figure 1: Number and cumulative incidence (per 100,000 population) of the 208,698 electronically reported COVID-19 cases in Germany by county and federal state (31/07/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local health authority).

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

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 (31/07/2020, 12:00 AM). The number of new cases covers positive cases, which have been sent to the local health department at the same day, but also at previous days.

Federal State	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	37,224	109	336	430	3.9	1,847	16.7
Bavaria	50,915	109	389	714	5.5	2,622	20.1
Berlin	9,192	42	245	268	7.2	223	5.9
Brandenburg	3,560	9	142	23	0.9	168	6.7
Bremen	1,774	11	260	41	6.0	56	8.2
Hamburg	5,386	30	293	93	5.1	261	14.2
Hesse	11,965	70	191	367	5.9	520	8.3
Mecklenburg-Western Pomerania	864	3	54	38	2.4	20	1.2
Lower Saxony	14,430	50	181	217	2.7	651	8.2
North Rhine-Westphalia	48,689	388	272	1,626	9.1	1,733	9.7
Rhineland-Palatinate	7,498	10	184	96	2.4	239	5.9
Saarland	2,862	0	289	20	2.0	174	17.6
Saxony	5,536	4	136	25	0.6	225	5.5
Saxony-Anhalt	2,015	6	91	36	1.6	64	2.9
Schleswig-Holstein	3,427	26	118	125	4.3	156	5.4
Thuringia	3,361	3	157	22	1.0	182	8.5
Total	208,698	870	251	4,141	5.0	9,141	11.0

As part of quality checks and data cleaning by the health authorities and regional offices, corrections to cases previously transmitted (e.g. detection of duplicate reports) can occasionally lead to negative values for the number of new cases.

Distribution of cases over time

The first COVID-19 cases in Germany were notified in January 2020. Figure 2 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 in 64,564 cases (31%), thus their date of reporting is provided in Figure 2.

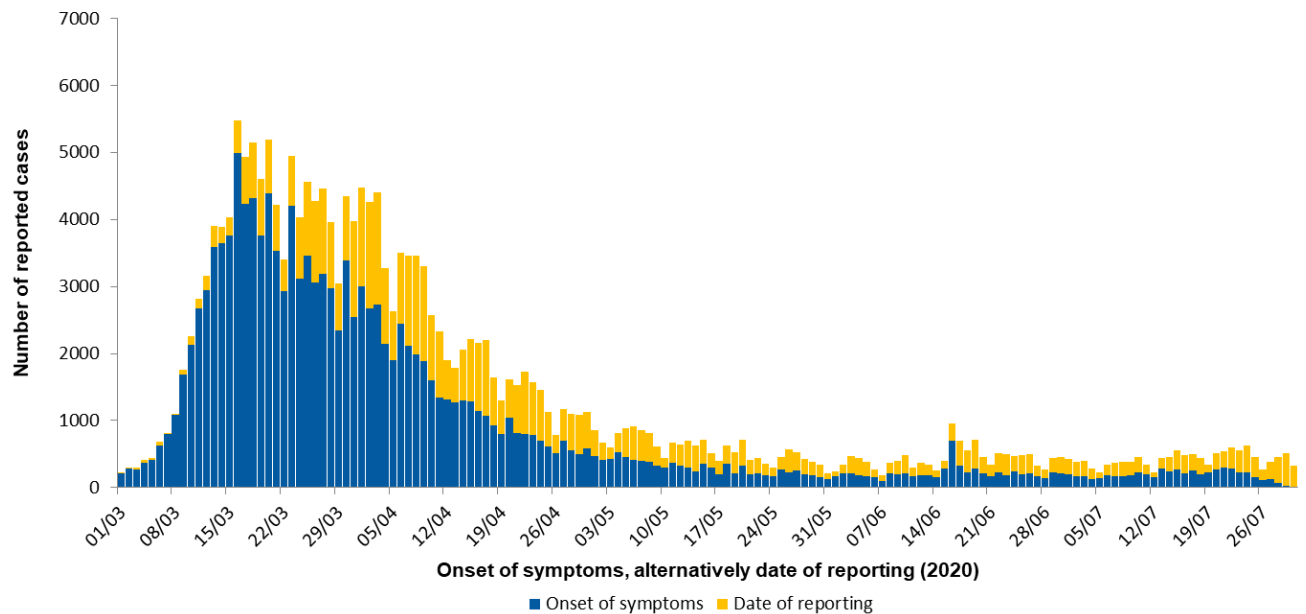


Figure 2: Number of Covid-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or –if unknown- alternatively by date of reporting from 01/03/2020 (31/07/2020, 12:00 AM).

Clinical aspects

Information on symptoms is available for 177,528 (85%) of the notified cases. Common symptoms are cough (47%), fever (40%) and rhinorrhoea (21%). Pneumonia was reported in 5,254 cases (3.0%). Since calendar week 17, cases are reported to the RKI as a distinct COVID-19 surveillance category. Since then, ageusia and anosmia can also be entered as symptoms. At least one of these two symptoms was reported in 5,026 of 33,511 cases (15%).

Hospitalisation was reported for 30,626 (17%) of 181,816 COVID-19 cases with information on hospitalisation status.

Approximately 192,300 people have recovered from their COVID-19 infection. Since the exact date of recovery is unknown in most cases, an algorithm was developed to estimate this number.

In total, 9,141 COVID-19-related deaths have been reported in Germany (4.4% of all confirmed cases). Of these, 5,054 (55%) are men and 4,082 (45%) are women, the gender was unknown in five cases.

The median age was 82 years. Of all deaths, 7,813 (86%) were in people aged 70 years or older, but only 18% of all cases were in this age group. So far, three deaths among COVID-19 cases under 20 years of age have been reported to the RKI. Pre-existing medical conditions were reported for all three.

Outbreaks

Three districts reported an increased incidence of >25 cases in 7 days/100.000 inhabitants: the districts of Dingolfing-Landau and Hof in Bavaria and the district Dithmarschen in Schleswig-Holstein.

A high 7-day incidence with more than 100 cases per 100,000 inhabitants was observed in the district of Dingolfing-Landau. The increase is due to an outbreak among harvest workers of an agricultural

company. Among more than 450 employees, >150 SARS-CoV-2-infections were identified. Quarantine was ordered for the entire company. The local population (3,300 inhabitants) has been offered voluntary testing.

A high 7-day incidence with more than 25 cases per 100,000 inhabitants was observed in the district of Hof (Bavaria). Several events are responsible for this increase. An outbreak in a large family has extended to several families in neighbouring communities. Another outbreak is related to a family event including individuals from Hof district as well as Weimar district in Thuringia. Together with another family-related outbreak, this explains the currently increased 7-day incidence of >25 cases per 100.000 inhabitants in Weimar district. Due to ongoing screening activities, further cases can be expected.

Further COVID-19 outbreaks continue to be reported in nursing homes and hospitals, refugee facilities, family events, child-day care facilities as well as religious communities.

Estimation of the reproduction number (R)

The presented case numbers do not fully reflect the temporal progression of incident COVID-19-cases, since the time intervals between actual onset of illness and diagnosis, reporting, as well as data transmission to the RKI vary greatly. Therefore, a nowcasting approach is applied to model the true temporal progression of COVID-19 cases according to illness onset. Figure 3 shows the result of this analysis.

The reproduction number, R, is defined as the mean number of people infected by one infected person. R can only be estimated based on statistical analyses such as nowcasting and not directly extracted from the notification system.

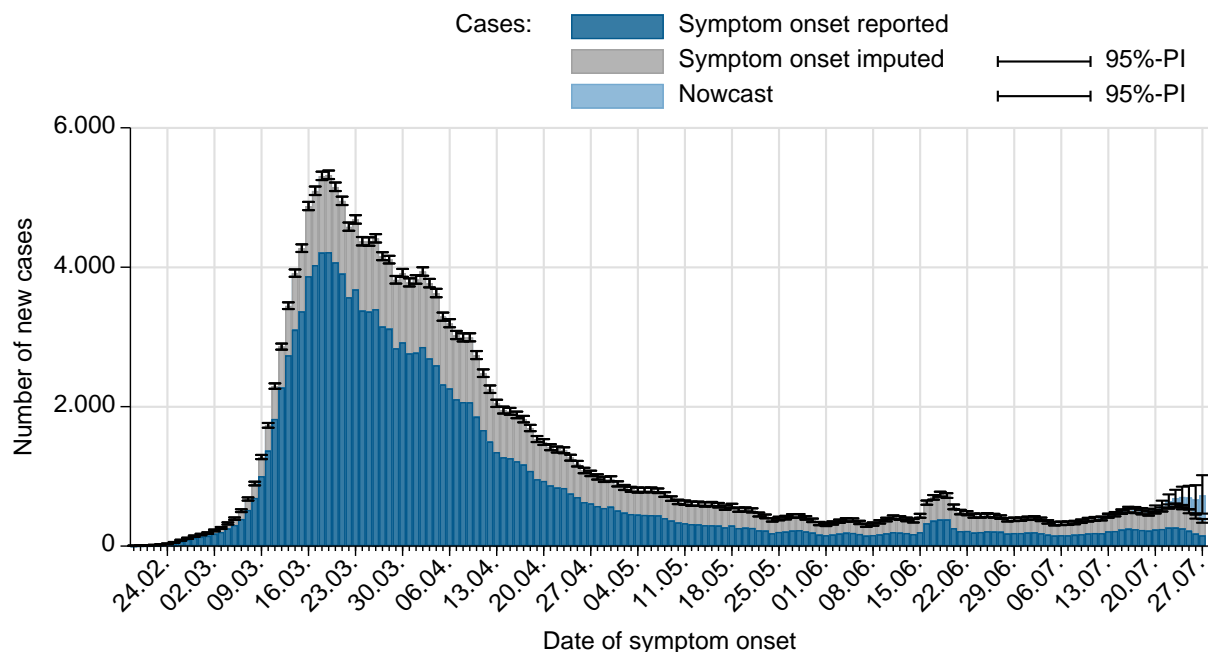


Figure 3: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (light blue) (as of 31/07/2020, 12 AM, taking into account cases up to 27/07/2020).

A sensitive 4-day-R-value can be estimated by using a 4-day moving average of the number of new cases estimated by nowcasting. This 4-day value reflects the infection situation about one to two weeks ago. This value reacts sensitively to short-term changes in case numbers, such as those caused by individual outbreaks. Furthermore, outbreak dynamics may be influenced widespread testing performed among

affected persons, leading to therapid detection of many additional COVID-19 cases. This can lead to relatively large fluctuations in the estimated R-value, especially if the total number of new cases is small.

The current estimate of the 4-day R-value is **1.06** (95%-prediction interval: **0.82 – 1.30**) and is based on electronically notified cases as of 31/07/2020, 12:00 AM.

Similarly, the 7-day R-value is estimated by using a moving 7-day average of the nowcasting curve. This compensates for fluctuations more effectively, as this value represents a slightly later course of infection of about one to a little over two weeks ago. The 7-day R-value is estimated at **1.19** (95% prediction interval: **1.05 – 1.31**) and is based on electronically notified cases as of 31/07/2020, 12:00 AM.

The reported 7-day R value has been around 1 or slightly above since mid-July 2020. This is due to a larger number of small outbreaks, but also case numbers in Germany overall, which have increased steadily in recent weeks since the relaxation of the measures.

See also the RKI's statement on high case numbers of 24/07/2020

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Gestiegene_Fallzahlen.html

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 methodological explanation of the more stable 7day R-value is also available there. More general information and sample calculations for both R-values can also be found in our FAQs (<http://www.rki.de/covid-19-faq>).

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

A registry of the German Interdisciplinary Association for Intensive and Emergency Medicine (DIVI), the RKI and the German Hospital Federation (DKG) was established to document intensive care capacity as well as the number of COVID-19 cases treated in participating hospitals

(<https://www.intensivregister.de/#/intensivregister>). The DIVI intensive care register documents the number of available intensive care beds in the reporting hospitals on a daily basis. Since 16/04/2020, all hospitals with intensive care beds are required to report.

As of 31/07/2020, a total of **1,277** hospitals reported to the DIVI registry. Overall, **33,335** intensive care beds were registered, of which **21,693** (65%) are occupied, and **11,642** beds (35%) 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 (31/07/2020, 12:15 PM).

	Number of patients	Percentage	Change to previous day*
Currently in ICU	265		-1
- of these: mechanically ventilated	125	47%	-7
Discharged from ICU	15,414		19
- of these: deaths	3,792	25%	6

*The interpretation of these numbers must take into account the 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 24 European countries 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.

All-cause mortality for the countries in the EuroMOMO network has now returned to normal levels, following a period of a substantial excess mortality coinciding with the COVID-19 pandemic. Excess mortality was observed primarily in the age group of over-65-years-old, but also in the age group of 15-64-years-old.

Weekly mortality statistics are also recorded on the website of the Federal Statistical Office, albeit with a certain time lag. A special evaluation on excess mortality is normally updated weekly every two weeks.

<https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Sterbefaelle-Lebenserwartung/Tabellen/sonderauswertung-sterbefaelle.html> (in German).

Looking at the development by months, in March 2020 there is no noticeable increase in the number of deaths compared to March of the previous year. In April, however, the mortality figures were significantly above the average of previous years; since the beginning of May, the mortality figures have been back to around the average.

Risk Assessment by the RKI

General assessment

At the global and the national level, the situation is very dynamic and must be taken seriously. The number of cases continues to increase worldwide. The number of newly reported cases declined from mid-March until early July. Since then, case numbers have been steadily increasing. Some districts are transmitting very few or no cases to the RKI. However, individual outbreaks are increasingly occurring again, which can reach considerable proportions. Vaccines and anti-viral therapeutics are currently not available. The RKI currently assesses the risk to the health of the German population overall as high and as very high for risk groups. This assessment may change at short notice based on new insights.

Infection risk

SARS-CoV-2 can be transmitted easily from person to person. The risk of infection depends heavily on the regional spread, living conditions and also on individual behaviour (physical distancing, hygiene measures and community masks).

Disease severity

In most cases, the disease is mild. The probability of progression towards serious disease increases with increasing age and underlying illnesses. Individual long-term consequences cannot be estimated yet.

Burden on health system

The burden on the health care system depends largely on the geographical distribution of cases, health care capacity and initiation of containment measures (isolation, quarantine, physical distancing etc.). In large parts of Germany it is currently low, but it can rapidly increase locally and affect the public health system in particular as well as medical care facilities.

Measures taken by Germany

- Corona-Warn-App
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/WarnApp/Warn_App.html
- Regulations for persons entering Germany in connection with the novel coronavirus SARS-CoV-2 (15.06.2020) https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/BMG_Merkblatt_Reisende_Tab.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: <https://www.bundesregierung.de/breg-de/themen/coronavirus/corona-bundeslaender-1745198> (in German)
- (Non-medical) face masks must be worn on public transport and in shops in all federal states.
- Data on current disease activity can be found in the daily situation reports and on the RKI dashboard:
<https://corona.rki.de/>
- A distance of 1.5 metres to other individuals must be maintained in public spaces:
<https://www.bundesregierung.de/breg-de/themen/coronavirus/besprechung-der-bundeszkanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248> (in German)