ROBERT KOCH INSTITUT

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

22/08/2020 - UPDATED STATUS FOR GERMANY

ABBREVIATED WEEKEND EDITION

Confirmed cases	Deaths	Deaths (%)	Recovered
232,082	**9,267**	**4.0%**	**ca. 206,600****
(+ 2,034*)	(+ 7*)		

**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 22/08/2020 12:00 AM)

- In the past few weeks the COVID-19 incidence has risen markedly in many federal states and the number of districts reporting zero COVID-19 cases over a period of 7 days has decreased markedly. This trend is very concerning.
- The cumulative nationwide incidence over the past 7 days was 10.2 cases per 100,000 inhabitants and thus further increased. A total of only 17 districts transmitted zero cases over the past 7 days. In a further 119 districts the 7-day-incidence is below 5.0/100,000 inhabitants.
- In Hesse, Bavaria and North Rhine Westphalia the 7-day incidence is considerably higher, in Rhineland – Palatinate, Berlin and Baden-Wuerttemberg slightly higher than the national mean 7-day-incidence.
- In total, 232,082 laboratory-confirmed COVID-19 cases and 9,267 deaths associated with COVID-19 have been electronically reported to the RKI in Germany.
- Moreover, further COVID-19-related outbreaks are being reported in various settings, including nursing homes and hospitals, facilities for asylum-seekers and refugees, meat-processing plants and other occupational settings, educational settings and especially among travellers and in the context of religious or family events.

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

Epidemiological Situation in Germany

General current assessment

The increase in the number of reported COVID-19 cases over the past weeks can be observed in many of the federal states. It is noticeable that the average age of infection has decreased over the past few weeks, that the incidence particularly in younger age groups has increased and is much higher than in older age groups.

Nationwide, there are reports of many small outbreaks in a number of administrative districts in various settings, such as larger events with family and friends. In addition, a large percentage of COVID-19 cases are being identified among travellers entering Germany, especially among younger age groups.

The number of new cases reported daily has been increasing since calender week 30. This development is very concerning and increasing in dynamic. A further worsening of the situation must be avoided. On the one hand, the increase in younger age groups needs to be stopped, on the other hand, transmission into older and vulnerable groups needs to be prevented. As soon as the number of infections rises among elderly people, hospitalisations and number of deaths will likely rise as well. This can only be prevented if the entire population continues to be committed to decreasing transmission, e.g. by consistently observing rules of physical distancing and hygiene - also outdoors -, by airing indoor areas and, where indicated, by wearing a community or face mask correctly. Large gatherings – especially indoors – should be avoided, and events with family and friends should be limited to close family members and friends.

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 232,082 (+2,034) laboratory-confirmed cases of COVID-19 have been electronically reported to and validated by the RKI (see Figure 1 and Table 1). A total of 17 districts reported no cases in the past 7 days. In the past few weeks, the number of districts not transmitting any COVID-19 cases over a period of 7 days decreased continuously, from a maximum of 125 districts on 12/07/2020.

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 (22/08/2020, 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	39,829	336	360	1,261	11.4	1,862	16.8
Bavaria	54,817	401	419	1,864	14.3	2,633	20.1
Berlin	10,655	112	284	420	11.2	226	6.0
Brandenburg	3,784	26	151	85	3.4	169	6.7
Bremen	1,893	8	277	58	8.5	56	8.2
Hamburg	6,019	30	327	122	6.6	265	14.4
Hesse	14,409	149	230	972	15.5	528	8.4
Mecklenburg-Western Pomerania	989	5	61	19	1.2	20	1.2
Lower Saxony	16,019	134	201	595	7.5	659	8.3
North Rhine-Westphalia	56,599	663	316	2,293	12.8	1,797	10.0
Rhineland-Palatinate	8,602	88	211	464	11.4	242	5.9
Saarland	3,055	15	308	61	6.2	174	17.6
Saxony	5,806	18	142	69	1.7	225	5.5
Saxony-Anhalt	2,170	15	98	53	2.4	65	2.9
Schleswig-Holstein	3,890	18	134	114	3.9	160	5.5
Thuringia	3,546	16	165	48	2.2	186	8.7
Total	**232,082**	**2,034**	**279**	**8,498**	**10.2**	**9,267**	**11.1**

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.

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 in 78,119 cases (34%), thus their date of reporting is provided.

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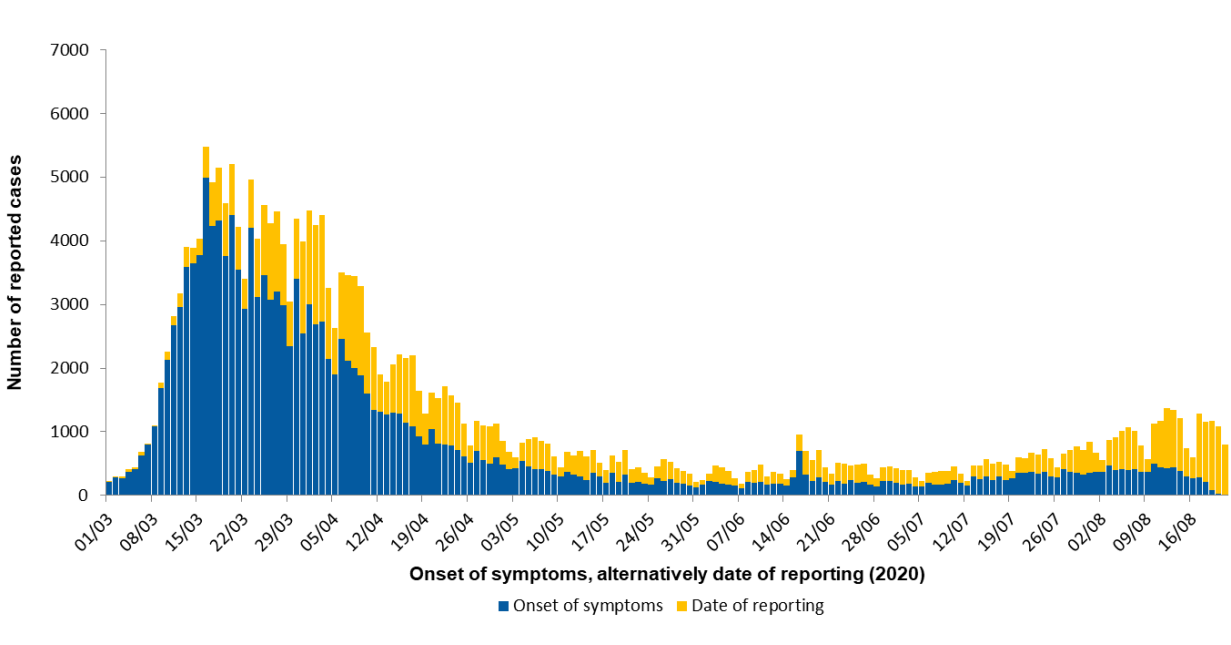

Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or –if unknown- alternatively by date of reporting since 01/03/2020 (22/08/2020, 12:00 AM).

Clinical aspects

Approximately 206,600 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.

A total of 9,267 COVID-19-related deaths have been reported in Germany (4.0% of all confirmed cases). Of these, 5,132 (55%) are men and 4,112 (45%) are women (see Table 2), the gender is unknown in four cases. The median age of COVID-19 cases reported to have died was 82 years.

Table 2: Number of notified COVID-19 deaths by age group and gender electronically reported to RKI (Data available for 9,263 of notified deaths; 22/08/2020, 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	90-99	100+
Male		2	7	17	58	243	659	1,403	2,152	585	6
Female	1		3	6	22	89	235	680	1,946	1,103	46
Total	**1**	**2**	**10**	**23**	**80**	**332**	**894**	**2,083**	**4,098**	**1,688**	**52**

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 25% of cases, the proportion 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.

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Table 3: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases electronically reported to RKI (230.690* cases, no data available for 58.470 cases; 22/08/2020, 12:00 AM)

Facility according to		Total	Hospitalised	Deaths	Recovered (estimate)
§ 23 IfSG (e.g. hospitals, outpatient clinics and practices, dialysis clinics or outpatient nursing services)	Cared for / accommodated in facility	3,827	2,730	673	3,000
	Occupation in facility	14,866	673	23	14,600
§ 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*	5,602	100	1	4,700
	Occupation in facility	3,269	161	7	3,100
§ 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, repatriates and refugees as well as other mass accommodation and prisons)	Cared for / accommodated in facility	19,020	4,243	3,660	15,100
	Occupation in facility	10,495	452	39	10,300
§ 42 IfSG (e.g. meat processing plants or kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Occupation in facility	5,432	232	5	5,200
Neither cared for, accommodated in nor working in a facility		109,711	17,407	3,572	98,800

*for care according to § 33 IfSG only cases under 18 years of age are taken into account, as other information may be assumed to be incorrect.
IfSG: Protection Against Infection Law

The number of COVID-19 cases was highest among persons cared for or employed in medical and other care facilites according to §23 and §36 IfSG (Table 3). The number of deaths was particularly high among persons cared for in these facilities.

Among the cases reported as working in medical facilities, 73% were female and 27% male. Their median age was 41 years. The high number of cases among people cared for or working in various care facilities (Section 36 IfSG) is consistent with numerous reported outbreaks, especially in nursing homes. The increase in the number of cases among persons working in the food sector (§42 IfSG) is largely due to outbreaks in meat processing plants.

Outbreaks

Over fifteen districts reported an increased incidence of ≥25 cases in 7 days/100.000 inhabitants, including the city of Offenbach in Hesse with an incidence of >50 cases/ 100.000 inhabitants in the past 7 days. The federal states mainly affected are Hesse and Bavaria. The increased incidence in the affected districts is mainly due to people returning home from vacations abroad but also in the context of family events and other private events.

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 2 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.

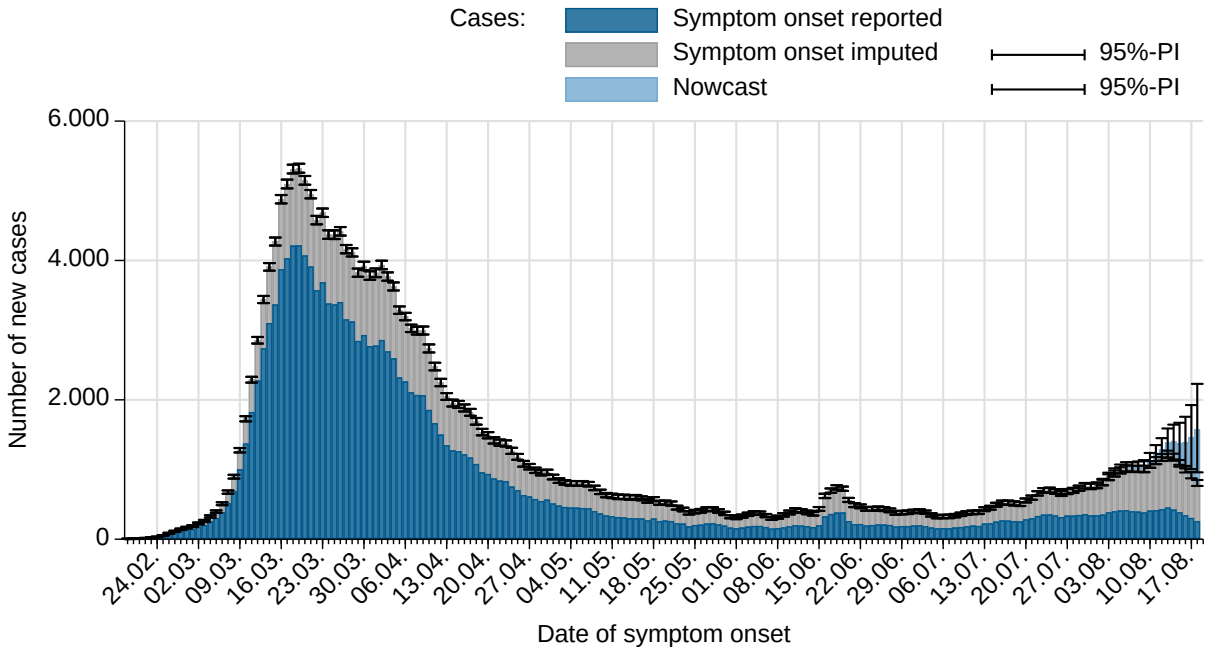

Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (light blue) (as of 22/08/2020, 12 AM, taking into account cases up to 18/08/2020).

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 1.13 (95%-prediction interval: 0.89 – 1.4) and is based on electronically notified cases as of 22/08/2020, 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 1.16 (95% prediction interval: 1.03 – 1.31) and is based on electronically notified cases as of 22/08/2020, 12:00 AM.

The reported R values has been around 1 or slightly above since mid-July 2020. According to current observations, this seems to be associated to a great extent with an increasing number of cases among travel returnees, a larger number of smaller outbreaks and the overall case numbers in Germany, which have increased steadily in recent weeks since the relaxation of disease control 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

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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)

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 with a clear acceleration in recent weeks. At the same time, the number of districts that have not reported any cases in the last 7 days is decreasing. There are larger and smaller outbreaks nationwide, especially in connection with celebrations in the circle of family and friends and at group events. Travel returnees, especially in the younger age groups, also contribute to the increase in the number of cases. 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). Here, contacts in risk situations (such as long face-to-face contact) play a special role. Aerosol emission increases sharply when speaking loudly, singing or laughing. In indoor rooms, this significantly increases the risk of transmission, even if a distance of more than 1.5 m is maintained.

If the minimum distance of 1.5 m without covering the mouth and nose is not maintained, e.g. when groups of people sit at a table or in large gatherings, there is also an increased risk of transmission outdoors.

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. The individual risk cannot be derived from epidemiological/statistical data. Thus, even without known previous illnesses and in young people, the course of the disease can be severe or even life-threatening. Long-term consequences, even after slight progressions, cannot yet be assessed.

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 in Germany

- Information on the designation of international risk areas https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html
- The ministry of health has published a record of all measures implemented in Germany since 27/01/2020 https://www.bundesgesundheitsministerium.de/coronavirus/chronik-coronavirus.html (*in German*)
- Information from the Ministry of Health for travelers 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/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 indivduals must be maintained in public spaces: https://www.bundesregierung.de/breg-de/themen/coronavirus/besprechung-der-bundeskanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248 *(in German)*

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