



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

28/07/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
206,242 (+ 633*)	9,122 (+ 4*)	4.4%	ca. 190.800**

*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 28/07/2020 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 **4.3** cases per 100,000 inhabitants and thus further increased slightly, albeit at a low level. A total of **95** districts transmitted zero cases over the past 7 days. Moreover, in **223** districts the 7-day-incidence is below 5,0/100,000 inhabitants.
- In total, **206,242** laboratory-confirmed COVID-19 cases and **9,122** 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.
- Currently, COVID-19-related outbreaks occur in various settings, including meat-processing plants, facilities for asylum-seekers and refugees, nursing homes and hospitals as well as in context of families or religious events.

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

Epidemiological Situation in Germany

General current assessment

An increase in COVID-19 case numbers [since last week](#) occurred in many of the federal states, but was most marked in Bavaria and Northrhine Westphalia. [Case numbers have increased considerably again today following somewhat lower case numbers due to testing and reporting delays on the two week-end days.](#)

Nationwide, there are many smaller case clusters 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, 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 **206,242 (+633)** laboratory-confirmed cases of COVID-19 have been electronically reported to and validated by the RKI (see Table 1). A total of **95** 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, 125 districts reported no cases during the past 7 days.

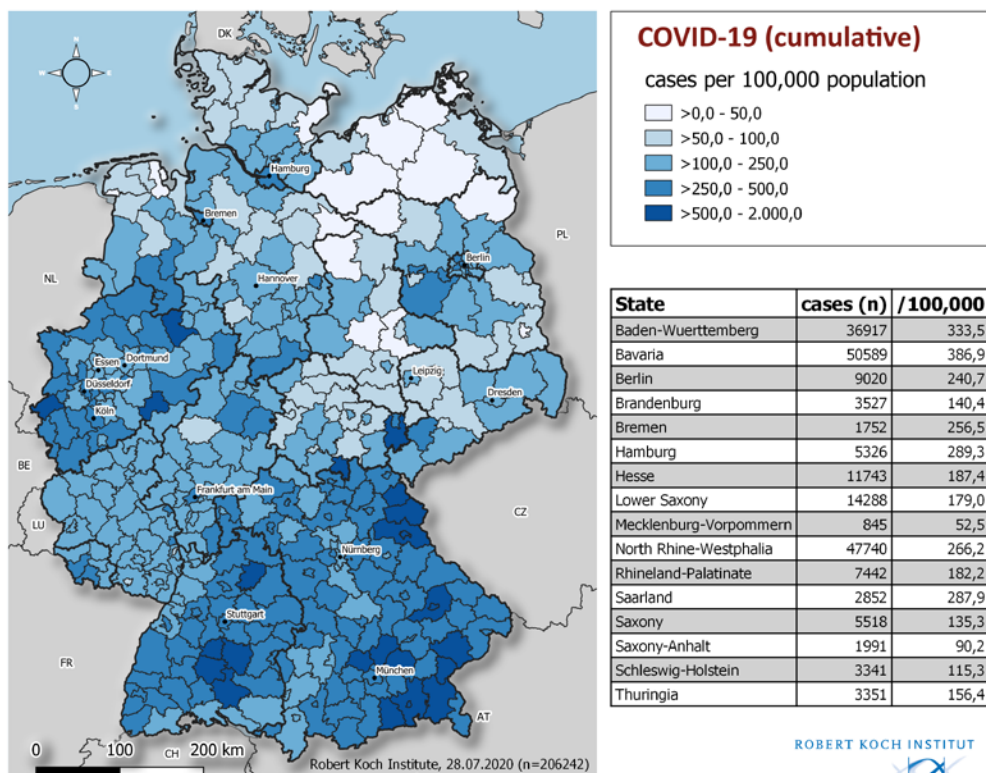


Figure 1: Number and cumulative incidence (per 100,000 population) of the 206,242 electronically reported COVID-19 cases in Germany by county and federal state (27/07/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local 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 (28/07/2020, 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	36,917	98	334	367	3.3	1,841	16.6
Bavaria	50,589	88	387	656	5.0	2,619	20.0
Berlin	9,020	19	241	203	5.4	223	5.9
Brandenburg	3,527	3	140	31	1.2	168	6.7
Bremen	1,752	5	257	31	4.5	55	8.1
Hamburg	5,326	4	289	79	4.3	261	14.2
Hesse	11,743	58	187	299	4.8	518	8.3
Mecklenburg-Western Pomerania	845	2	52	36	2.2	20	1.2
Lower Saxony	14,288	47	179	220	2.8	648	8.1
North Rhine-Westphalia	47,740	269	266	1,430	8.0	1,730	9.6
Rhineland-Palatinate	7,442	8	182	91	2.2	238	5.8
Saarland	2,852	1	288	21	2.1	174	17.6
Saxony	5,518	6	135	19	0.5	225	5.5
Saxony-Anhalt	1,991	2	90	33	1.5	64	2.9
Schleswig-Holstein	3,341	19	115	69	2.4	156	5.4
Thuringia	3,351	4	156	26	1.2	182	8.5
Total	206,242	633	248	3,611	4.3	9,122	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 63,507 cases (31%), thus their date of reporting is provided in Figure 2.

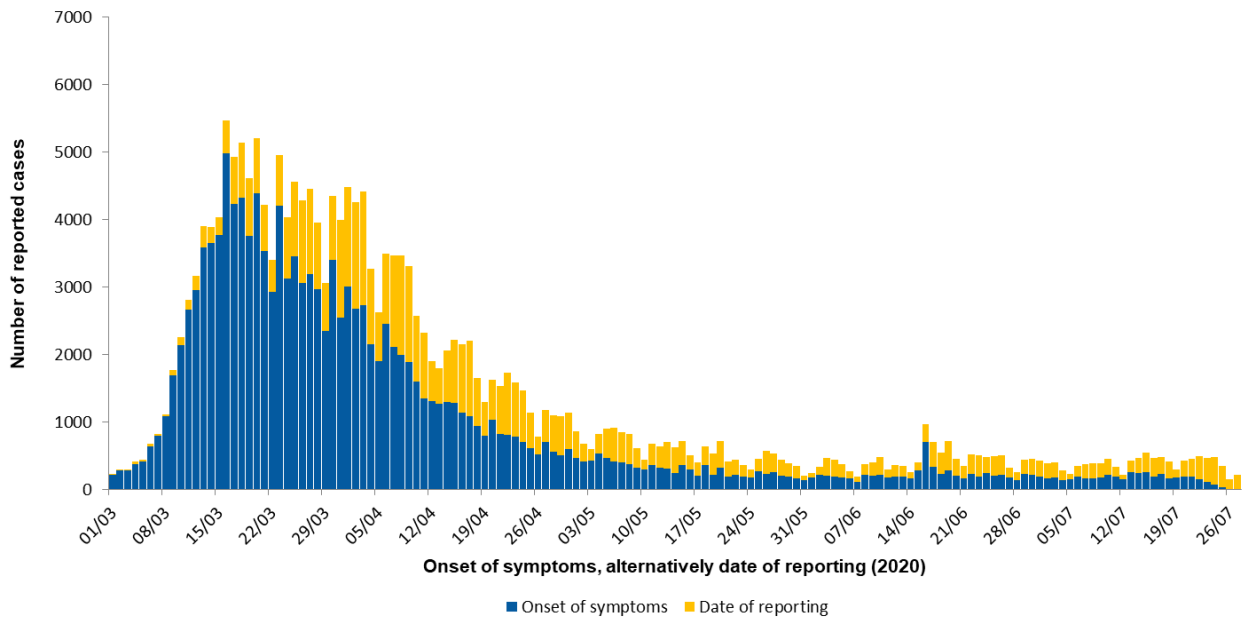


Figure 2: Number of Covid-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or –if unknown- alternatively by date of reporting from 01/03/2020 (28/07/2020, 12:00 AM).

Demographic distribution of cases

Of all reported cases, 51% are female and 49% are male. Among all those notified cases, for which data on age and gender were reported, 5,878 were children under 10 years of age (2.9%), 10,631 children and teenagers aged 10 to 19 years (5.2%), 91,660 persons aged 20 to 49 years (44%), 61,325 persons aged 50 to 69 years (30%), 30,819 persons aged 70 to 89 years (15%) and 5,429 persons aged 90 years and older (2.6%). The age and/or gender is unknown in 500 notified cases. The mean age of cases is 48 years (median age 48 years). The highest incidences are seen in persons aged 90 years and older (Figure 3).

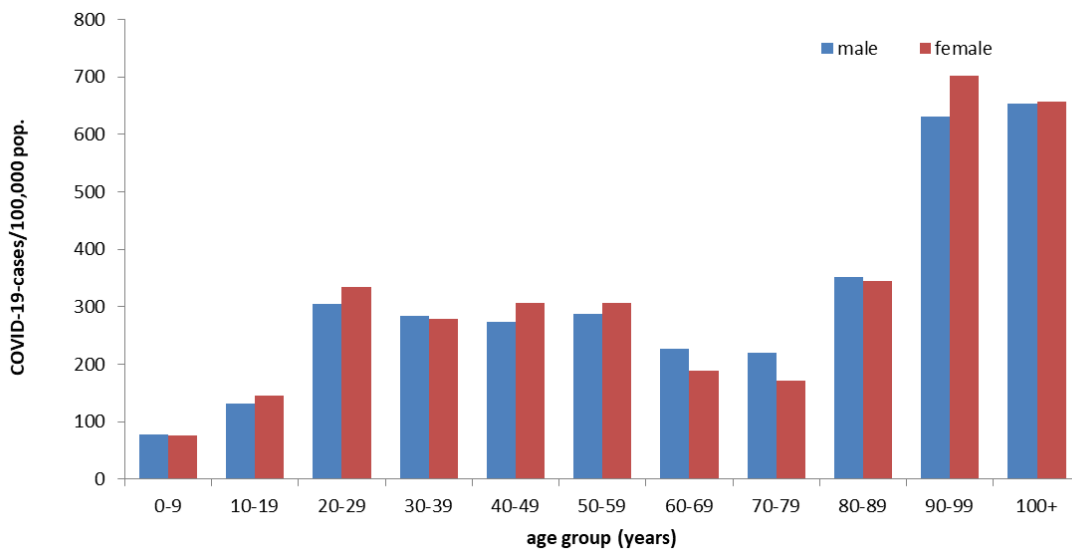


Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and gender (n=205,742) for cases with information available (28/07/2020,12:00 AM).

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

The presentation of reported COVID-19 cases in Germany according to the proportion of cases per age group and reporting week in Figure 4 shows a continuous, distinct decrease in the relative proportion of people over 80 years of age from reporting week 17 to reporting week 24, accompanied by a marked decrease in the number of cases, which also continued in the following weeks. In comparison, the proportion of cases in the younger age groups between 0 and 29 years of age increased in the same period, with a corresponding decrease in the number of cases. After reporting week 24, the proportion across all age groups entered a plateau phase with only slight fluctuations. The absolute number of cases increased in the last two weeks.

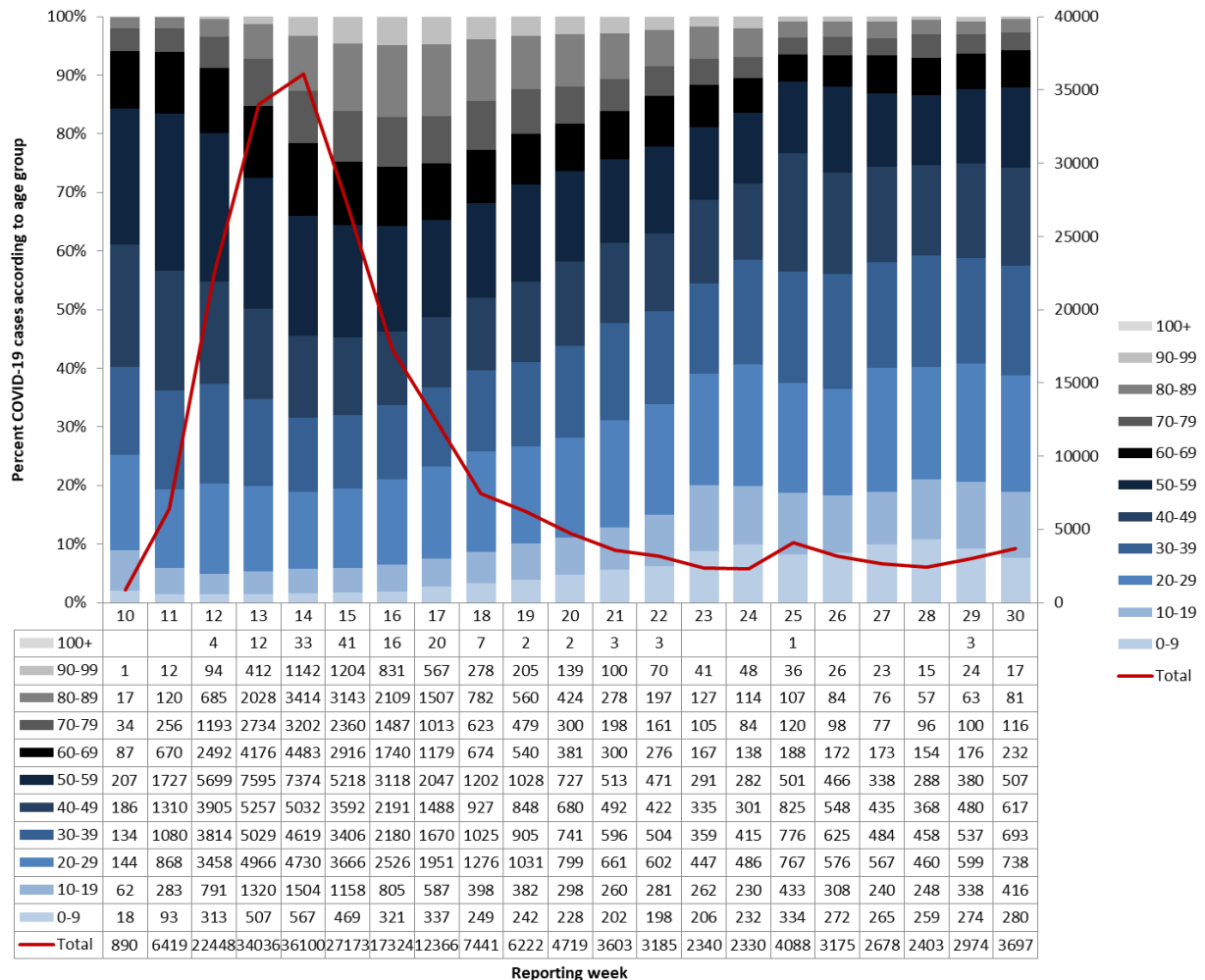


Figure 4: Percent of notified COVID-19 cases by age group and reporting week (n=201.784 cases with respective data in the weeks 10 to 29 (21/07/2020, 12:00 AM). The total number of weekly cases is depicted by the red line.

Clinical aspects

Information on symptoms is available for 175,468 (85%) of the notified cases. Common symptoms are cough (48%), fever (40%) and rhinorrhoea (21%). Pneumonia was reported in 5,226 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 4,713 of 31,579 cases (15%).

Hospitalisation was reported for 30,442 (17%) of 179,662 COVID-19 cases with information on hospitalisation status. Table 2 depicts the proportion of hospitalization and deaths according to notification week.

Approximately 190,800 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.

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

Table 2 depicts the proportion of hospitalization and deaths according to notification week.

Table 2: The COVID-19 cases reported to the RKI according to gender and the proportion of hospitalization and deceased for the reporting weeks 10 - 30 (28/07/2020, 12:00 AM).

Week	Total cases	Mean age (years)	Men	Women	Number information on hospitalisation	Number hospitalized	Percent hospitalized	Number of deaths	Percent deaths
10	890	43	54%	46%	798	162	20%	12	1,3%
11	6.418	45	56%	44%	5.603	519	9%	84	1,3%
12	22.447	46	55%	45%	19.325	2.189	11%	473	2,1%
13	34.017	48	49%	51%	29.372	5.065	17%	1.443	4,2%
14	36.061	51	45%	55%	31.428	6.018	19%	2.235	6,2%
15	27.123	52	44%	56%	23.970	4.664	19%	1.854	6,8%
16	17.310	52	45%	55%	15.415	3.329	22%	1.204	6,9%
17	12.350	51	45%	55%	10.894	2.202	20%	708	5,7%
18	7.435	49	48%	52%	6.567	1.342	20%	373	5,0%
19	6.217	47	48%	52%	5.541	1.048	19%	245	3,9%
20	4.716	46	49%	51%	4.144	721	17%	153	3,2%
21	3.586	44	50%	50%	3.068	502	16%	103	2,9%
22	3.179	42	51%	49%	2.716	407	15%	58	1,8%
23	2.341	39	51%	49%	2.044	303	15%	42	1,8%
24	2.325	38	54%	46%	2.046	278	14%	31	1,3%
25	4.087	37	59%	41%	3.687	302	8%	33	0,8%
26	3.187	37	55%	45%	2.801	284	10%	18	0,6%
27	2.676	37	52%	48%	2.425	250	10%	18	0,7%
28	2.387	36	56%	44%	2.092	241	12%	17	0,7%
29	2.966	36	52%	48%	2.486	294	12%	10*	0,3%
30	3.675	37	53%	47%	2.904	249	9%	6*	0,2%

* Data not yet meaningful, as outcome of the diseases in these weeks is still unclear

In total, **9,122** COVID-19-related deaths have been reported in Germany (4.4% of all confirmed cases). Of these, **5,044** (55%) are men and **4,073** (45%) are women (see Table 3), the gender was unknown in five cases. The median age was 82 years. Of all deaths, **7,800** (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.

Table 3: Number of notified COVID-19 deaths by age group and gender electronically reported to RKI (Data available for 9,117 of notified deaths; 28/07/2020, 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	6	17	56	240	648	1,382	2,116	571	6
Female	1		3	6	22	86	233	670	1,917	1,091	44
Total	1	2	9	23	78	326	881	2,052	4,033	1,662	50

Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Act, 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.

Table 4: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases electronically reported to RKI (205,041* cases, no data available for 51,159 cases; 28/07/2020, 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	3,573	2,564	652	2,800
	Occupation in facility	14,299	654	22	14,100
§ 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*	3,962	81	1	3,600
	Occupation in facility	2,894	153	7	2,800
§ 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	18,488	4,170	3,614	14,700
	Occupation in facility	10,171	427	40	10,000
§ 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	5,001	213	5	4,800
Neither cared for, accommodated in nor working in a facility		95,494	16,529	3,492	89,400

*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 facilities according to §23 and §36 IfSG (Table 4). 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 low number of cases among persons who attend or work in facilities providing child care or education (Section 33 IfSG) reflects the low incidence in children observed thus far. The increase in the number of cases among persons working in the food sector (§42) is largely due to outbreaks in meat processing plants.

Countries of Exposure

[Borders have begun to open since reporting week 25, initially within Europe. Since then, among the countries reported as the probable place of exposure, the proportion of countries other than Germany](#)

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

has increased. This proportion peaked at 46% (2,969 cases) in reporting week 11, after which it rapidly decreased in association with the implemented travel restrictions to 0.4% (19 cases) in week 20. From week 21 onwards, this proportion has again increased to 11% (419 cases) in week 30.

Table 5 lists the top 15 countries most frequently reported as the probable place of infection in weeks 27 to 30 from a total of 7,977 numbers mentioned.

Table 5: Countries of exposures reported for COVID-19 cases notified in weeks 27 to 30, 2020 (28/07/2020, 0:00 Uhr).

Country of exposure	Numbers mentioned
Germany	6.809
Kosovo	303
Serbia	242
Turkey	70
Bosnia-Herzegowina	67
Romania	36
Croatia	29
Bulgaria	27
Macedonia	24
Netherlands	24
Albania	23
Poland	20
Kazakhstan	18
Philippines	17
Spain	17
Iran	16
Other	235
Total	7.977

Despite the increase in the number of cases reported having a place of exposure abroad, the majority of recent cases acquired their infection in Germany. Through consistent prevention and early identification, transmission and subsequent cases can be prevented. To this end, it remains essential that people follow the hygiene and distancing recommendations, avoid crowds and that all persons who develop COVID-19 compatible symptoms obtain testing immediately.

Outbreaks

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

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 over 450 employees, 174 SARS-CoV-2-infections were identified. Quarantine was ordered for the entire operation. The local population (3300 inhabitants) has been offered voluntary testing.

A high 7-day incidence with more than 35 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 surrounding towns. [Another outbreak is related to an event including persons from Hof as well as Weimar in Thuringia. Together with another family-related outbreak, this explains the currently increased incidence of >25 cases in 7-days/100.000 inhabitants there.](#) Due to ongoing screening, 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 5 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.

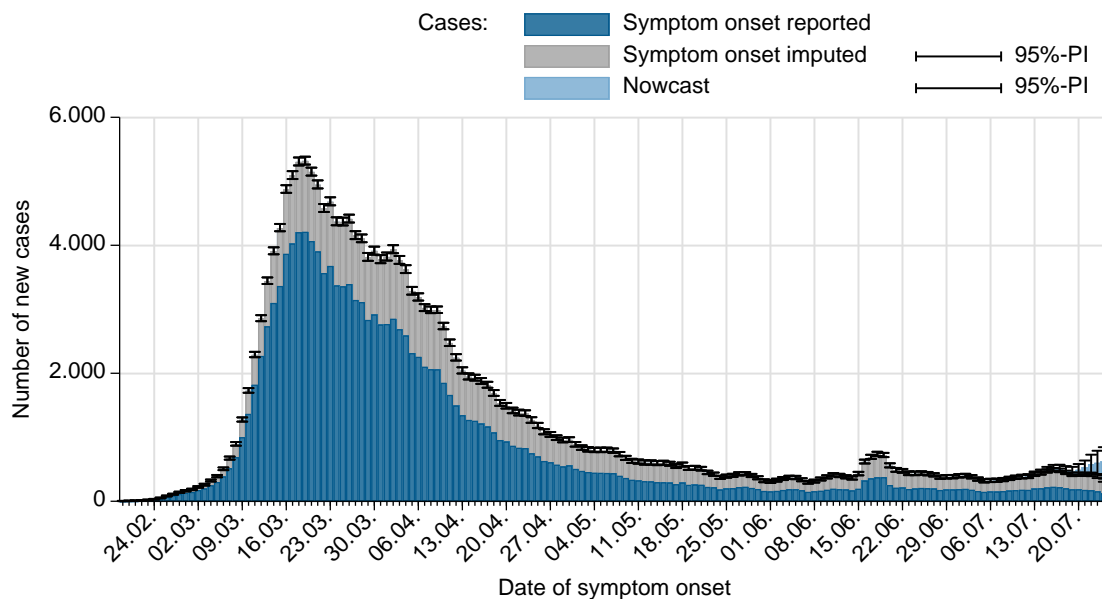


Figure 5: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (light blue) (as of 28/07/2020, 12 AM, taking into account cases up to 24/07/2020).

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 the rapid 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 **1.25** (95%-prediction interval: **1.01 – 1.49**) and is based on electronically notified cases as of 28/07/2020, 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 **1.12** (95% prediction interval: **0.99 – 1.26**) and is based on electronically notified cases as of 28/07/2020, 12:00 AM.

The reported 7-day R value has been at 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

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

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 28/07/2020, a total of **1,273** hospitals or departments reported to the DIVI registry. Overall, **33,007** intensive care beds were registered, of which **21,439 (65%)** are occupied, and **11,568 beds (35%)** are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 6.

Table 6: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (28/07/2020, 12:15 AM).

	Number of patients	Percentage	Change to previous day*
Currently in ICU	258		-3
- of these: mechanically ventilated	126	49%	-7
Discharged from ICU	15.370		47
- of these: deaths	3.790	25%	16

*The interpretation of these numbers must take into account the slightly changing number of reporting hospitals (with large differences in their number of beds) from day to day. This can explain the observed decrease in the cumulative number of discharged

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 newly reported cases declined from mid-March **until early July**. **Since then, case numbers have been steadily increasing**. Currently, a number of districts are transmitting very few or no cases to the RKI. **However, reports of outbreaks in various settings are again increasing**. 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

The risk of infection depends heavily on the regional spread, living conditions and also on individual behaviour, including compliance with 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.

Burden on health system

The burden on the health care system depends on the geographical distribution of cases, health care capacity and initiation of containment measures (isolation, quarantine, physical distancing etc.). The burden is currently low in many regions, but may be high in some locations.

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-bundeskanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248> (in German)