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

22/07/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
202,799	9,095	4.5%	ca. 188,600**
(+ 454*)	(+ 5*)		

*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 22/07/2020 12:00 AM)

- The cumulative nationwide incidence over the past 7 days was 3.4 cases per 100,000 inhabitants and thus increased slightly at a low level. A total of 107 districts transmitted zero cases. Moreover, in 225 districts the 7-day-incidence is below 5,0/100,000 inhabitants.
- In total, 202,799 laboratory-confirmed COVID-19 cases and 9,095 deaths due to COVID-19 have been electronically reported to the RKI in Germany.
- An accumulation of COVID-19 cases occurred in a meat processing plant in Lower Saxony
- Currently, COVID-19 outbreaks continue to occur in various other settings, including facilities for asylum-seekers and refugees, nursing homes and hospitals as well as in the context of family or religious events.
- In calendar week 29, more than 530,000 tests have been performed, of which 0.6% had a positive result.

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

Epidemiological Situation in Germany

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 202,799 (+454) laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated by RKI (see Table 1). A total of 107 districts reported no cases in the past 7 days. Information on laboratory-confirmed cases is also available on the RKI website at https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Fallzahlen.html and https://corona.rki.de.

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 (22/07/2020, 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	36,556	64	330	331	3.0	1,838	16.6
Bavaria	49,954	82	382	488	3.7	2,617	20.0
Berlin	8,837	35	236	132	3.5	222	5.9
Brandenburg	3,497	12	139	30	1.2	167	6.6
Bremen	1,725	4	253	34	5.0	55	8.1
Hamburg	5,244	3	285	14	0.8	261	14.2
Hesse	11,458	28	183	207	3.3	515	8.2
Mecklenburg-Western Pomerania	811	2	50	7	0.4	20	1.2
Lower Saxony	14,101	42	177	222	2.8	647	8.1
North Rhine-Westphalia	46,367	154	259	1,092	6.1	1,717	9.6
Rhineland-Palatinate	7,346	8	180	107	2.6	238	5.8
Saarland	2,835	3	286	12	1.2	174	17.6
Saxony	5,503	2	135	22	0.5	225	5.5
Saxony-Anhalt	1,961	5	89	32	1.4	62	2.8
Schleswig-Holstein	3,278	7	113	50	1.7	155	5.4
Thuringia	3,326	3	155	22	1.0	182	8.5
Total	**202,799**	**454**	**244**	**2,802**	**3.4**	**9,095**	**10.9**

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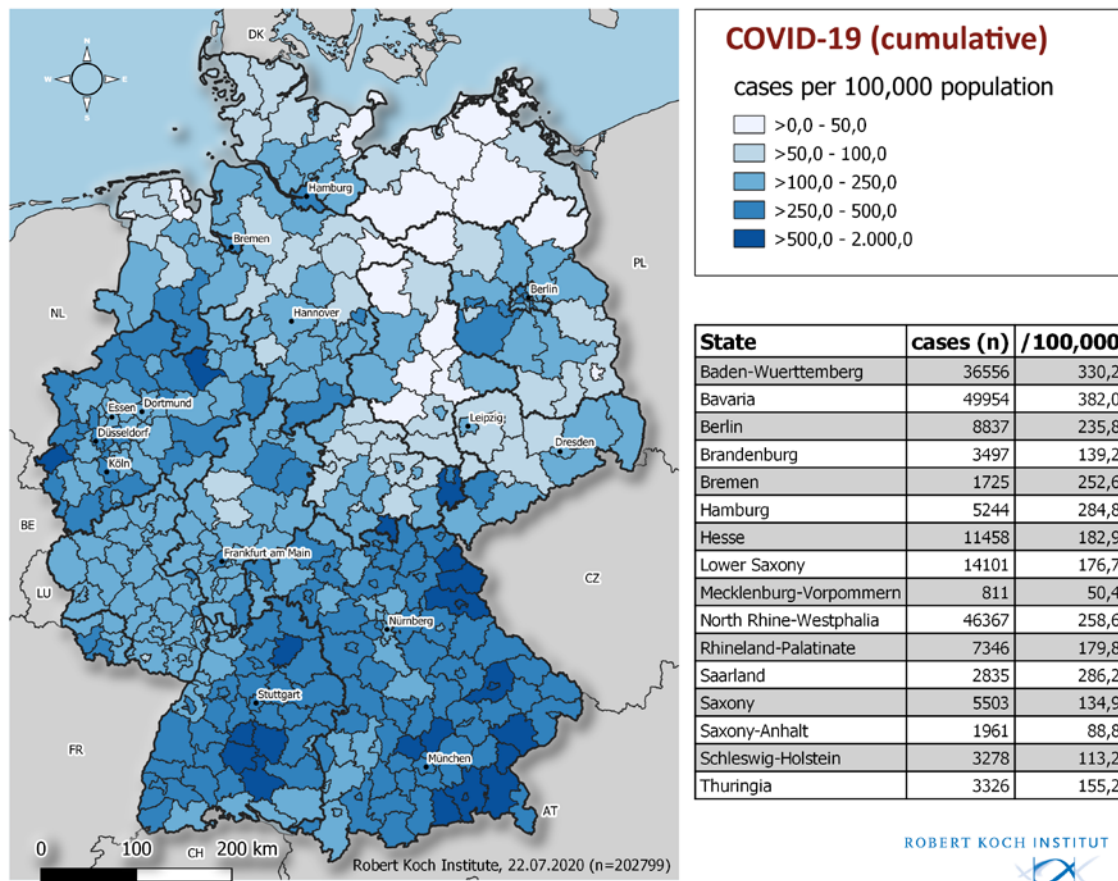
Note: The report is a snapshot and is continuously updated.

State	cases (n)	/100,000
Baden-Wuerttemberg	36556	330,2
Bavaria	49954	382,0
Berlin	8837	235,8
Brandenburg	3497	139,2
Bremen	1725	252,6
Hamburg	5244	284,8
Hesse	11458	182,9
Lower Saxony	14101	176,7
Mecklenburg-Vorpommern	811	50,4
North Rhine-Westphalia	46367	258,6
Rhineland-Palatinate	7346	179,8
Saarland	2835	286,2
Saxony	5503	134,9
Saxony-Anhalt	1961	88,8
Schleswig-Holstein	3278	113,2
Thuringia	3326	155,2

Figure 1: Number and cumulative incidence (per 100,000 population) of the 202,799 electronically reported COVID-19 cases in Germany by county and federal state (21/07/20220, 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).

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 61,832 cases (30%), thus their date of reporting is provided in Figure 2.
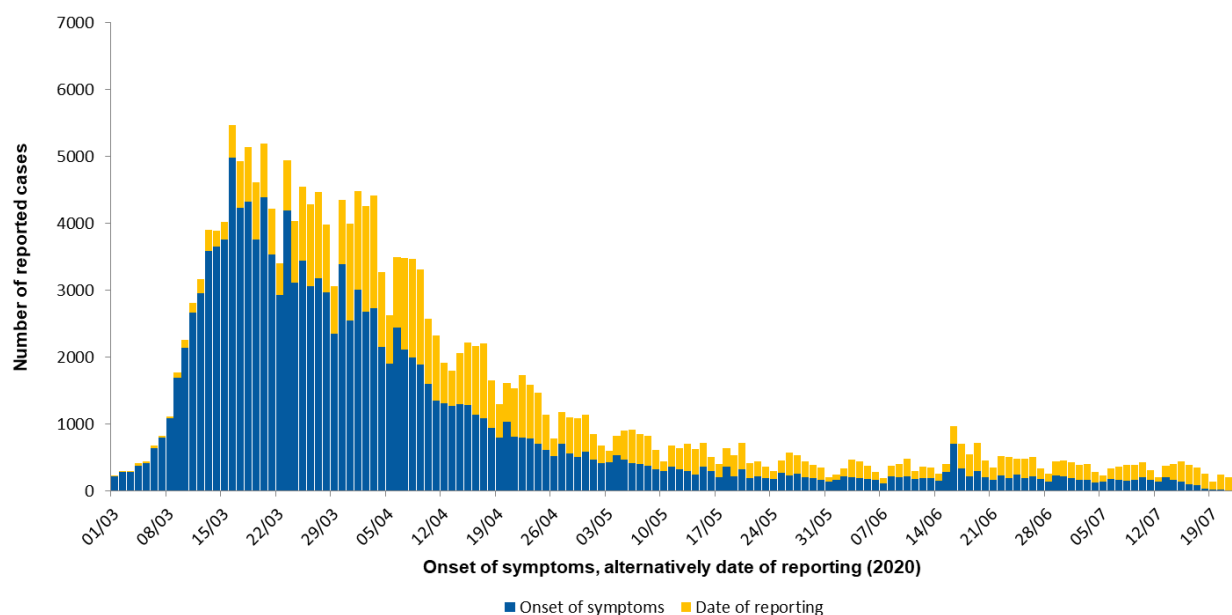

Figure 2: Number of Covid-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or –if unknown- alternatively by date of reporting from 01/03/2020 (22/07/2020, 12:00 AM).

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

Demographic distribution of cases

Of all reported cases, 52% are female and 48% are male. Among all those notified cases, for which data on age and gender were reported, 5,615 were children under 10 years of age (2.8%), 10,231 children and teenagers aged 10 to 19 years (5,1%), 89.782 persons aged 20 to 49 years (44%), 60,669 persons aged 50 to 69 years (30%), 30,627 persons aged 70 to 89 years (15%) and 5,410 persons aged 90 years and older (2.7%). The age and/or gender is unknown in 465 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).
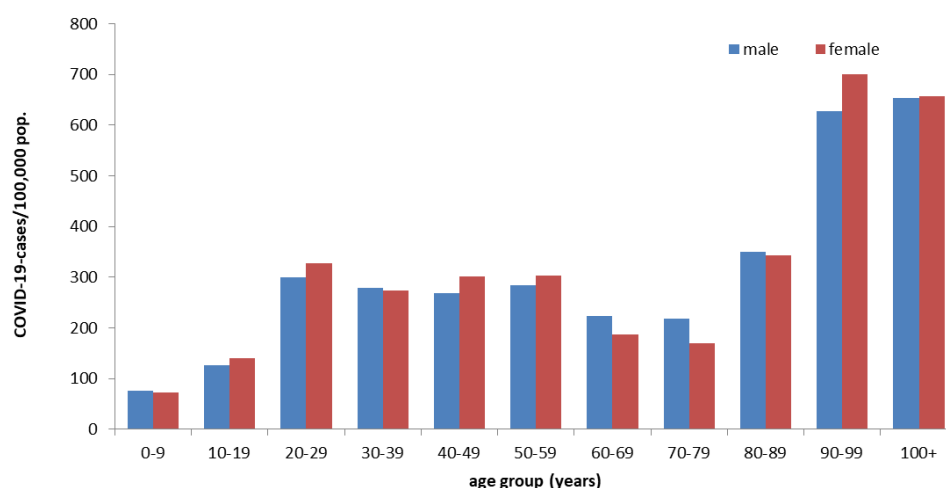

Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and gender (n=202,328) for cases with information available (22/07/2020,12:00 AM).

Clinical aspects

Information on symptoms is available for 172,848 (85%) of the notified cases. Common symptoms are cough (48%), fever (40%) and rhinorrhoea (21%). Pneumonia was reported in 5,182 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 4,318 of 29,135 cases (15%).

Hospitalisation was reported for 30,162 (17%) of 176,812 COVID-19 cases with information on hospitalisation status.

Approximately 188,600 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.

In total, 9,095 COVID-19-related deaths have been reported in Germany (4.5% of all confirmed cases). Of these, 5,028 (55%) are men and 4,062 (45%) are women (see Table 2), the gender was unknown in five cases. The median age was 82 years. Of all deaths, 7,782 (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 2: Number of notified COVID-19 deaths by age group and gender electronically reported to RKI (Data available for 9,090 of notified deaths; 22/07/2020, 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	54	238	645	1,380	2,112	568	6
Female	1		3	6	22	85	232	670	1,912	1,087	44
Total	1	2	9	23	76	323	877	2,050	4,024	1,655	50

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

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 3: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases electronically reported to RKI (201,622* cases, no data available for 50,167 cases; 22/07/2020, 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	3,531	2,548	650	2,800
	Occupation in facility	14,186	649	21	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*	3,788	79	1	3,500
	Occupation in facility	2,856	151	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	18,390	4,146	3,604	14,500
	Occupation in facility	10,112	424	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	4,913	211	5	4,700
Neither cared for, accommodated in nor working in a facility		93,679	16,360	3,479	88,000

*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 low number of cases among persons who attend or work in facilities providing child care or education (Section 33 IfSG) reflects the low number of case 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.

Outbreaks

A high 7-day incidence with more than 25 cases per 100,000 inhabitants was observed in the district of Vechta (Lower Saxony). An accumulation of COVID-19 cases was detected as a result of screening of >1,000 employees of a meat processing company. Neighbouring districts are also affected.

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 4 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.
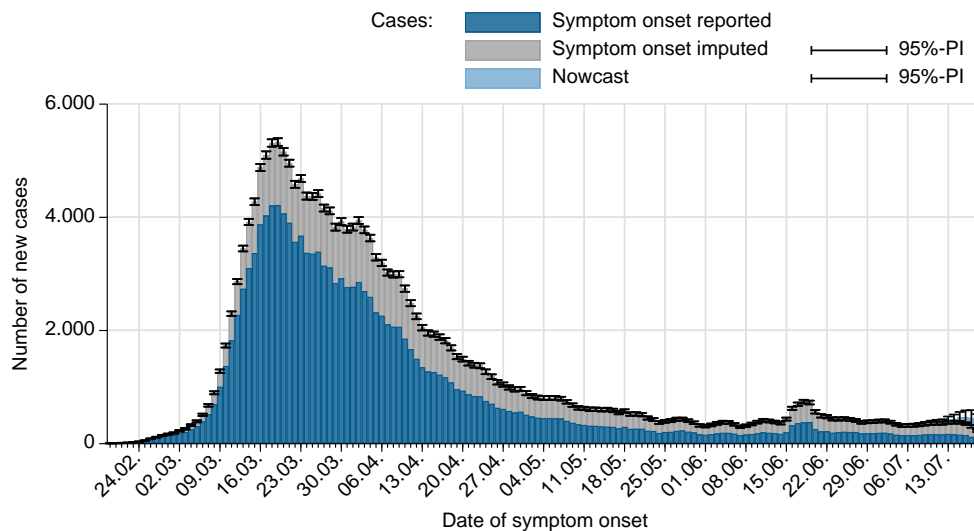

Figure 4: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (light blue) (as of 22/07/2020, 12 AM, taking into account cases up to 18/07/2020).

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 – as is currently the case in Germany - the total number of new cases is small.

The current estimate of the 4-day R-value is 0.89 (95%-prediction interval: 0.73 – 1.08) and is based on electronically notified cases as of 22/07/2020, 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 1.01 (95% prediction interval: 0.93 – 1.12) and is based on electronically notified cases as of 22/07/2020, 12:00 AM.

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 22/07/2020, a total of 1,276 hospitals or departments reported to the DIVI registry. Overall, 32,781 intensive care beds were registered, of which 21,522 (66%) are occupied, and 11,259 beds (34%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 4.

Table 4: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (22/07/2020, 12:15 AM).

	Number of patients	Percentage	Change to previous day*
Currently in ICU	250		-4
- of these: mechanically ventilated	127	51%	+5
Discharged from ICU	15,278		-11
- of these: deaths	3,791	25%	+3

*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

Surveys on SARS-CoV-2 laboratory tests in Germany

In order to assess the SARS-CoV-2 test numbers, data from university hospitals, research institutions as well as clinical and outpatient laboratories throughout Germany are merged weekly at the RKI. These are transmitted via an internet-based RKI test laboratory survey, via the network for respiratory viruses (RespVir), via the laboratory-based SARS-CoV-2 Surveillance established at the RKI (an extension of the Antibiotic Resistance Surveillance (ARS)) and via the enquiry of a professional association of laboratory medicine.

Since the beginning of testing in Germany up to and including week 29/2020, 7,418,812 laboratory tests have been recorded to date, 238,694 of which have tested positive for SARS-CoV-2 (see Table 5).

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

Table 5: Number of SARS-CoV-2-laboratory tests in Germany (as of 21/07/2020)

weeks* 2020	Number tests	Tested positiv	Proportion positive (%)	Number of reporting laboratories
Up until week 11	124,716	3,892	3,1	90
week 11	127,457	7,582	5,9	114
week 12	348,619	23,820	6,8	152
week 13	361,515	31,414	8,7	151
week 14	408,348	36,885	9,0	154
week 15	380,197	30,791	8,1	164
week 16	331,902	22,082	6,7	168
week 17	363,890	18,083	5,0	178
week 18	326,788	12,608	3,9	175
week 19	403,875	10,755	2,7	182
week 20	432,666	7,233	1,7	183
week 21	353,467	5,218	1,5	179
week 22	405,269	4,310	1,1	178
week 23	340,986	3,208	0,9	176
week 24	325,575	2,716	0,8	171
week 25	384,311	5,136	1,3	173
week 26	462,942	3,603	0,8	177
week 27	500,122	3,012	0,6	148
week 28	504,596	2,938	0,6	175
week 29	531,571	3,408	0,6	168
Summe	7,418,812	238,694		

Up to and including week 29, 229 laboratories have registered for the RKI test laboratory survey or in one of the other transmitting networks and communicate mainly on a weekly basis.

Since laboratories can register the tests of the previous calendar weeks at a later date, it is possible that the numbers determined will increase subsequently. It should be noted that the number of tests is not the same as the number of persons tested, as the data may include multiple tests of patients.

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 has been declining since mid-March. Currently, many districts are transmitting very few or no cases to the RKI. 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.

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

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 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)*

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