



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

05/06/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
183,271 (+ 507*)	8,613 (+ 32*)	4.7%	ca. 168,500**

*Change from previous day; **Estimate

– Changes since the last report are marked *blue* in the text –

Summary (as of 05/06/2020, 12:00 AM)

- In total, **183,271** COVID-19 cases and **8,613** deaths due to COVID-19 have been electronically reported to the Robert Koch Institute in Germany.
- The cumulative incidence (cases per 100,000) of COVID-19 is currently highest in Bavaria (361), Baden-Wuerttemberg (315), Hamburg (277) and Saarland (276).
- Most cases (67%) are between 15 and 59 years old. Women (52%) and men (48%) are almost equally affected. Slightly more men (55%) than women (45%) died.
- People aged 70 years or older account for 86% of deaths but only 19% of all cases.
- COVID-19 outbreaks continue to be reported in nursing homes and hospitals.
- Outbreaks of COVID-19 have been reported in several federal states (including in institutions for asylum seekers and refugees, in meat processing plants and logistics companies, and in connection with religious events and family gatherings).

Epidemiological Situation in Germany

Geographical distribution of cases

Epidemiological analyses are based on validated cases notified electronically to the Robert Koch Institute (RKI) in line with the Protection Against Infection Law (Data closure: 12:00 AM daily). Since January 2020, a total of **183,271 (+507)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated by the RKI, including **8,613** deaths (see Table 1 and Figure 1). A total of **119** districts reported no cases in the past 7 days. Information on 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 notified laboratory-confirmed COVID-19 cases and deaths for each federal state, Germany (05/06/2020, 12:00 AM).

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	34,870	40	315	131	1,2	1,778	16.1
Bavaria	47,268	59	361	369	2,8	2,481	19.0
Berlin	6,946	45	185	187	5,0	200	5.3
Brandenburg	3,288	8	131	22	0,9	156	6.2
Bremen	1,498	36	219	123	18,0	44	6.4
Hamburg	5,107	11	277	25	1,4	253	13.7
Hesse	10,163	34	162	172	2,7	482	7.7
Mecklenburg-Western Pomerania	764	1	47	4	0,2	20	1.2
Lower Saxony	12,277	95	154	354	4,4	604	7.6
North Rhine-Westphalia	38,439	142	214	576	3,2	1,617	9.0
Rhineland-Palatinate	6,732	13	165	57	1,4	230	5.6
Saarland	2,738	1	276	19	1,9	166	16.8
Saxony	5,315	3	130	21	0,5	212	5.2
Saxony-Anhalt	1,712	1	78	8	0,4	55	2.5
Schleswig-Holstein	3,103	0	107	27	0,9	146	5.0
Thuringia	3,051	18	142	63	2,9	169	7.9
Total	183,271	507	220	2,158	2,6	8,613	10.4

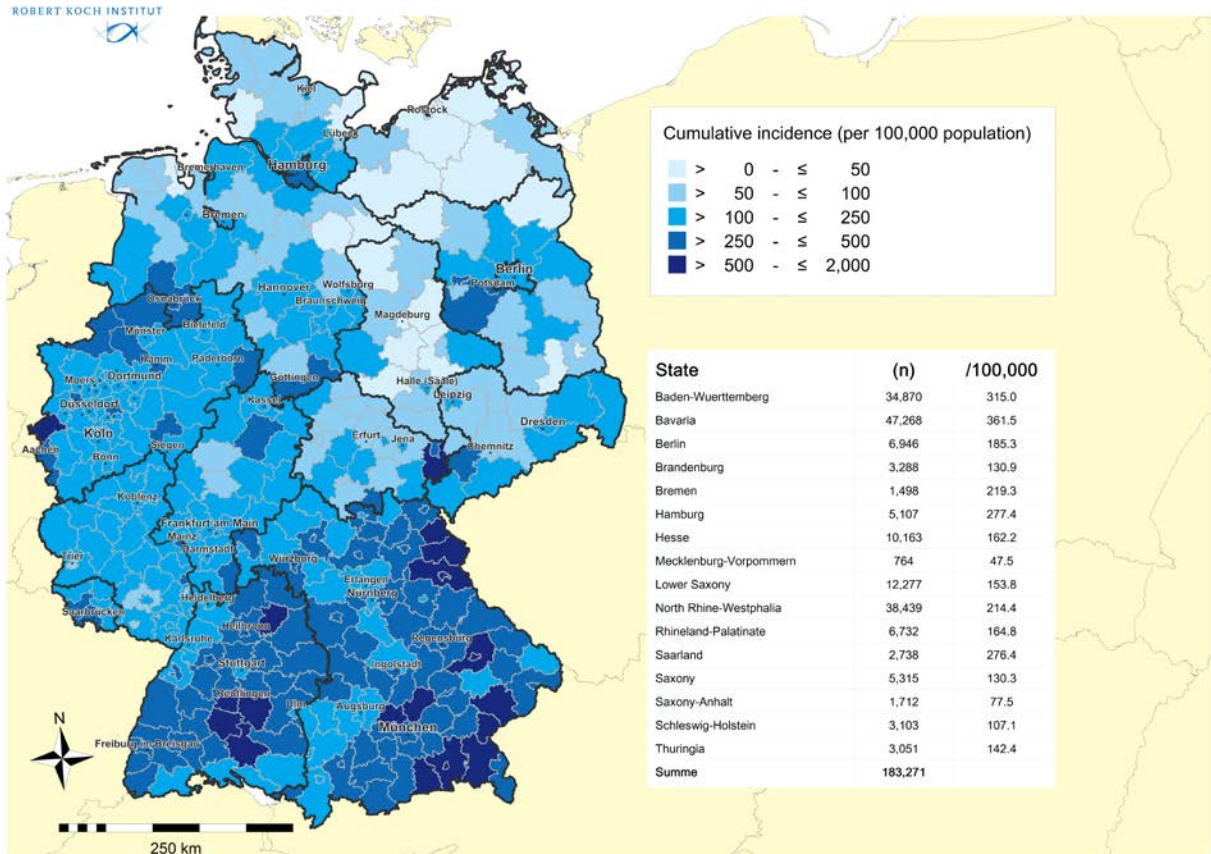


Figure 1: Number and cumulative incidence (per 100,000 population) of the 183,271 electronically reported COVID-19 cases in Germany by county and federal state (05/06/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local health authority).

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. With regard to all cases reported from 01.03.2020 onwards, the onset of symptoms is unknown in 55,542 cases (30%). When the onset of symptoms is unknown, the date of reporting is provided in Figure 2.

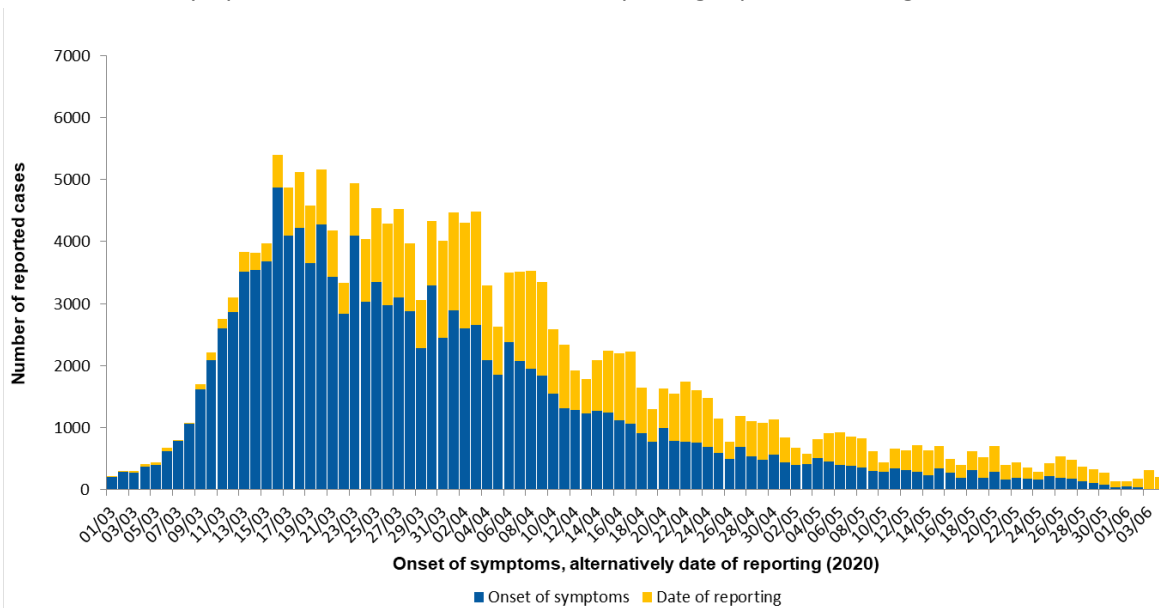


Figure 2: Number of electronically reported COVID-19 cases in Germany by date of symptom onset and by date of reporting from 01/03/2020 (05/06/2020, 12:00 AM).

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 notified cases, 3,850 were children under 10 years of age (2.1%), 8,256 children and teenagers aged 10 to 19 years (4.5%), 79,379 persons aged 20 to 49 years (43%), 57,040 persons aged 50 to 69 years (31%), 29,413 persons aged 70 to 89 years (16%) and 5,222 persons aged 90 years and older (2.9%). The age is unknown in 111 notified cases. The mean age of cases is 49 years (median age 50 years). The highest incidences are seen in persons aged 90 years and older (Figure 3).

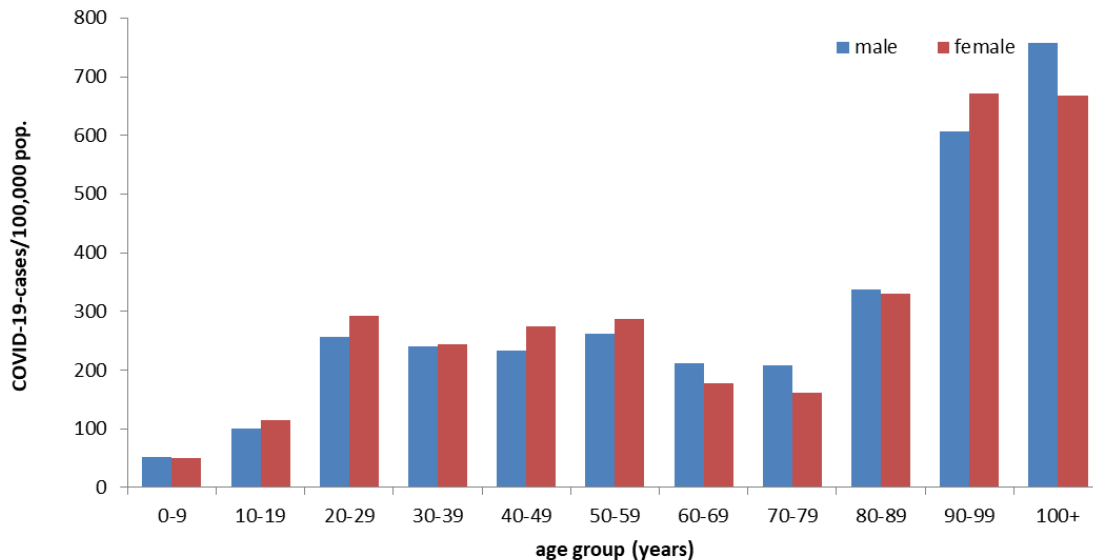


Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and gender (n=182,843) for cases with information available (05/06/2020, 12:00 AM).

Clinical aspects

Information on symptoms is available for 155,768 (85%) of the notified cases. Common symptoms are cough (49%), fever (41%) and rhinorrhoea (21%). Pneumonia was reported in 4,693 cases (3.0%). Since calendar week 17, cases are reported to the RKI as a distinct COVID-19 surveillance category. Since then, loss of smell and taste can also be entered as symptoms. At least one of these two symptoms was reported in 2,266 of 15,030 cases (15%).

Hospitalisation was reported for 27,798 (18%) of 156,764 COVID-19 cases with information on hospitalisation status.

Approximately 168,500 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 the number of recovered cases.

In total, 8,613 COVID-19-related deaths have been reported in Germany (4.7% of all confirmed cases). Of these, 4,770 (55%) are men and 3,838 (45%) are women (see Table 2; gender was unknown in five cases). The median age was 82 years. Of all deaths, 7,403 (86%) were in people aged 70 years or older, but only 19% 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 (Data available for 8,608 of notified deaths; 05/06/2020, 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	0	2	6	15	49	221	600	1307	2020	545	5
Female	1	0	3	6	18	76	211	627	1829	1022	45
Total	1	2	9	21	67	297	811	1934	3849	1567	50

Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Law (IfSG), the RKI receives information on occupation, accommodation or care in a facility relevant for infection control for reported COVID-19 cases (Table 3).

Since information on care/attendance, accommodation and occupation in these facilities is missing in 28% of cases, the proportion of cases cared for, accommodated or working in these facilities shown here should be considered minimum values. Among the COVID-19 cases reported as being cared for/attending, accommodated in or working in all of the above mentioned facilities, the proportion of cases that actually acquired their infection in these settings is unknown.

Table 3: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases (182,290* cases, no data available for 50,190 cases; 05/06/2020, 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	3,057	2,162	575	2,300
	Occupation in facility	13,067	600	20	12,800
§ 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*	2,350	60	1	2,200
	Occupation in facility	2,529	124	7	2,500
§ 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, repatriates and refugees as well as other mass accommodation and prisons)	Cared for / accommodated in facility	16,755	3,799	3,297	12,500
	Occupation in facility	9,426	400	50	9,100
§ 42 IfSG (e.g. kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Occupation in facility	2,495	163	51**	2,300
Neither cared for, accommodated in nor working in a facility		82,421	14,884	3,262	77,300

*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

** incorrect high case number due to technical data transmission problems

Thus far, 13,067 cases with a SARS-CoV-2 infection have been notified among staff working in medical facilities as defined by Section 23 IfSG. Among the cases reported as working in medical facilities, 73% were female and 27% male. The median age was 41 years, 20 persons died.

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 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.

Outbreaks

A high 7-day incidence rate was observed in **three** cities or districts, primarily due to localised outbreaks: The city of Bremerhaven (Bremen), **and the districts of Göttingen (Lower Saxony) and Coburg (Bavaria)**.

In the city of Bremerhaven and surrounding districts, an outbreak extending to other districts occurred within a religious community. Another outbreak occurred following a large family gathering.

A large Covid-19 outbreak occurred in the district of Göttingen related to family gatherings, for which a large number of contact persons has been identified. Due to a high number of affected children, numerous schools and day care institutions were temporarily closed. In the district of Coburg an increased number of SARS-CoV-2 infections occurred in nursing homes, some in conjunction with dialysis treatment.

In addition an outbreak occurred in a nursing home for the elderly in the district of Sonneberg, in which both residents and employees were infected with SARS-Cov-2.

Outbreaks continue to occur in meat-processing plants in several federal states, some of which have led to production closures. Outbreaks in religious communities have been reported from Berlin and Hesse. In addition, several large outbreaks have occurred among workers at logistics companies, for instance in North Rhine-Westphalia and Lower Saxony.

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 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.

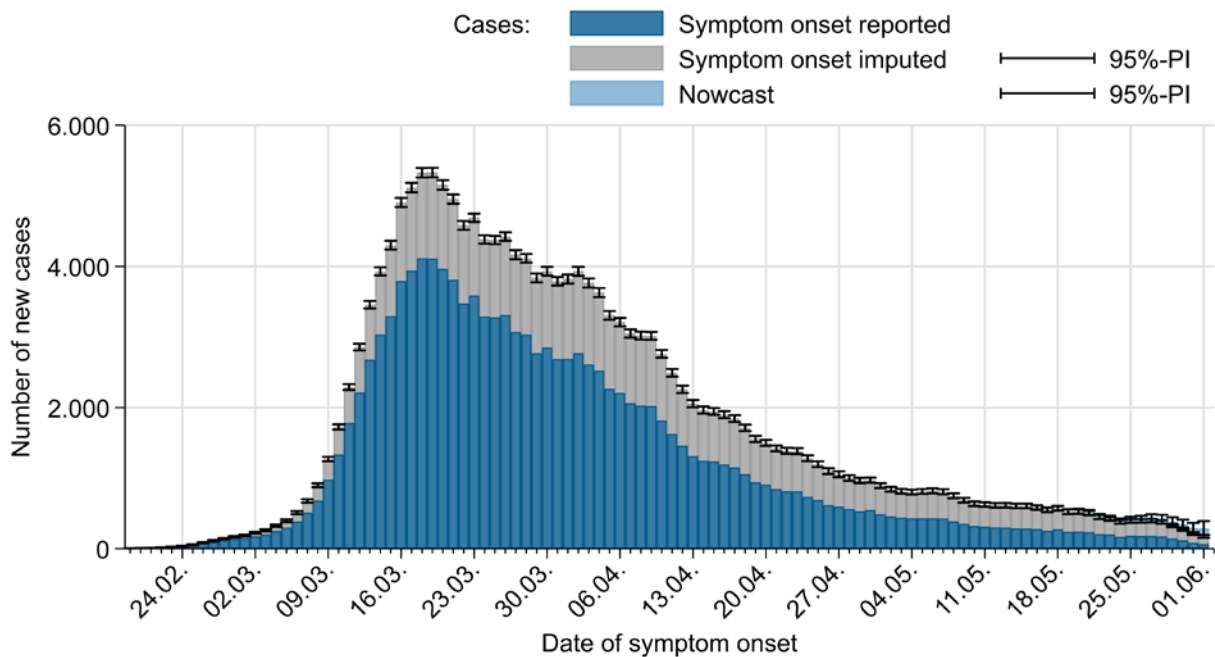


Figure 4: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset (light blue) (as of 05/06/2020 12 AM, taking into account cases up to 01/06/2020).

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

The R-value reported to date reflects the trend in the number of incident cases with a high degree of sensitivity. This value is thus sensitive to short-term changes in the number of cases - such as those caused by individual outbreaks - which can lead to relatively large fluctuations, especially if the total number of new cases is relatively low. In addition to this sensitive R-value, the RKI therefore now provides a second, more stable 7-day R-value, which is based on data from a longer time period and is therefore less subject to short-term fluctuations. Thus, it reflects trends more reliably, but is based on infections that occurred on average earlier than those on which the more sensitive R-value is based.

Both R-values are estimated on the basis of nowcasting. The nowcasting predicts the number of cases with illness onset up to the date of 4 days ago, as no reliable prediction can be made about the number of new cases in the last 3 days.

The sensitive R-value reported so far can be estimated using a moving 4-day average of the number of incident cases as estimated by nowcasting. It compares the 4-day mean of incident cases on one day with the corresponding mean 4 days before. Thus, taking into account that infection occurs four to six days before the onset of symptoms, the daily sensitive R-value represents the course of infection approximately one to two weeks ago. The current estimate is $R = 0.68$ (95%-prediction interval: $0.56 - 0.83$) and is based on electronically notified cases as of 05/06/2020, 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. The 7-day R-value then compares the 7-day average of the new cases on one day with the 7-day average four days earlier. The 7-day R thus 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 0.83 (95% prediction interval: $0.76 - 0.93$) and is based on electronically notified cases as of 05/06/2020, 12:00 AM.

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 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 05/06/2020, a total of **1,274** hospitals or departments reported to the DIVI registry. Overall, **32,357** intensive care beds were registered, of which **21,038** (65%) are occupied, and **11,319** beds (35%) 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 (05/06/2020, 9:15 AM).

	Number of patients	Percentage	Change to previous day
Currently in ICU	595		-5
- of these: mechanically ventilated	339	57%	-2
Discharged from ICU	14,020		+74
- of these: deaths	3,649	26%	+16

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.

The EuroMOMO network reports an excess mortality of about 196,000 deaths for the period between the week 10 and 22, 2020. This includes about 177,000 in the age group over-65s, but also in the age group of 15-64s (about 17,000 deaths).

Weekly mortality statistics are also recorded on the website of the Federal Statistical Office, albeit with a certain time lag (currently KW 19)

https://www.destatis.de/DE/Presse/Pressemitteilungen/2020/06/PD20_203_12621.html?nn=209016. A

special evaluation on excess mortality is updated every two weeks:

[https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Sterbefaelle-](https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Sterbefaelle-Lebenserwartung/Tabellen/sonderauswertung-sterbefaelle.html?nn=209016)

[Lebenserwartung/Tabellen/sonderauswertung-sterbefaelle.html?nn=209016](https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Sterbefaelle-Lebenserwartung/Tabellen/sonderauswertung-sterbefaelle.html?nn=209016) (in German). Looking at the development by calendar weeks, since the last week of March (week 13), there have been increased mortality rates compared to the average for the years 2016 to 2019. This upward deviation was greatest in week 15. From week 16 onwards, the mortality rates have fallen again considerably. With a further decrease, the mortality figures in week 19 are no longer above the average of the previous years.

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 is decreasing. 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.

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

- From 15 June, travel within Europe should be possible again – provided the COVID-19 activity in destination countries permits this. <https://www.bundesregierung.de/breg-de/themen/coronavirus/reisen-wieder-moeglich-1757372> (in German)
- Information on additional regulations at the regional level regarding physical distancing can be found 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)