



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

30/04/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
<b>159,119</b> (+1,478*)	<b>6,288</b> (+173*)	<b>4.0%</b>	<b>ca. 123,500**</b>

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

\*Change from previous day; \*\*Estimate

## Summary (as of 30/04/2020, 12:00 AM)

- In total, **159,119** COVID-19 cases and **6,288** deaths due to COVID-19 have been electronically reported to the Robert Koch Institute in Germany.
- The incidence (cases per 100,000) of COVID-19 is highest in Bavaria (**322**), Baden-Wuerttemberg (**286**), Saarland (**258**) and Hamburg (**248**).
- Most cases (67%) are between 15 and 59 years old; women (**52%**) and men (**48%**) are almost equally affected.
- 87% of deaths, but only 19% of all cases, occurred in persons aged 70 years or older.
- COVID-19 related outbreaks in nursing homes and hospitals continue to be reported. In some of these outbreaks, the number of deaths is relatively high.

## Epidemiological Situation in Germany

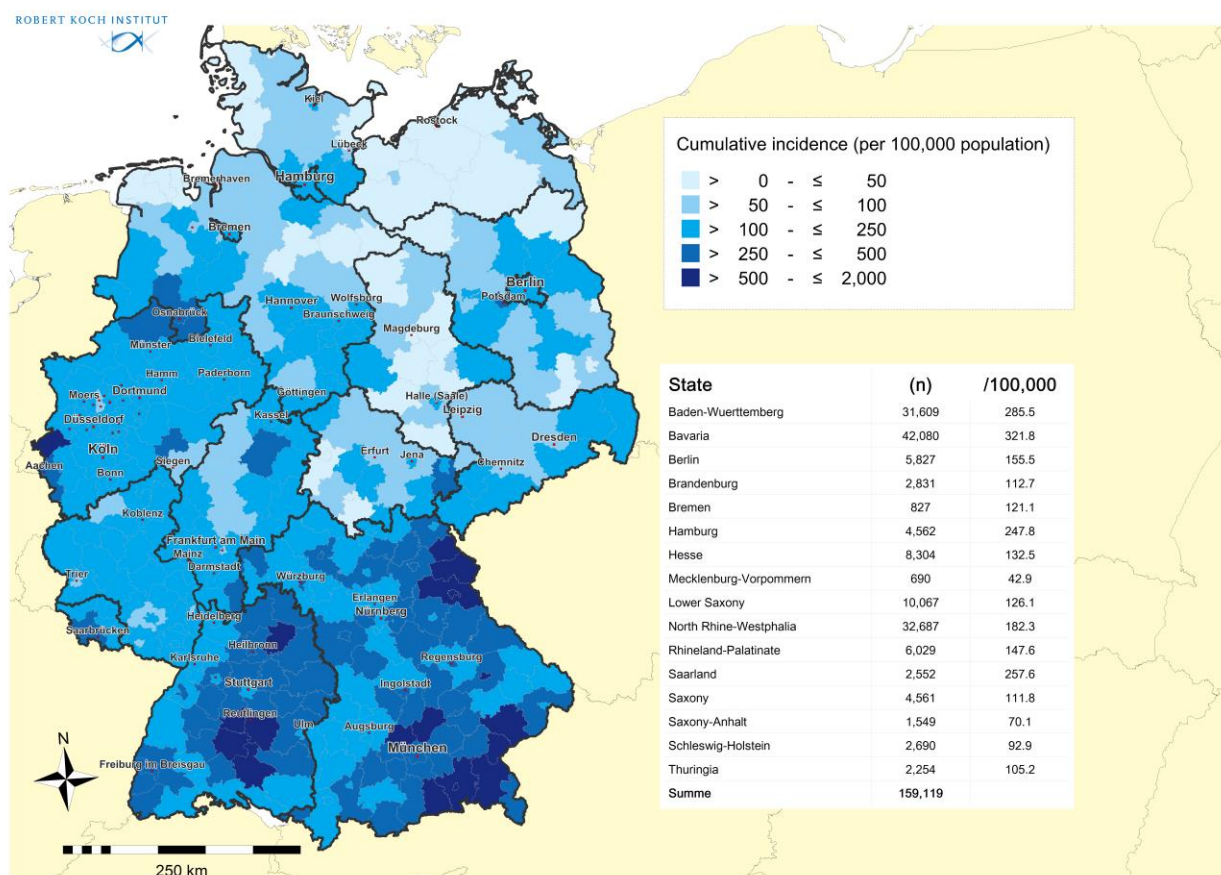
### Geographical distribution of cases

Epidemiological analyses are based on validated cases notified electronically to RKI according to the Protection Against Infection Law (Data closure: 12:00 AM daily).

Since January 2020, a total of **159,119 (+1,478)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated at the RKI, including **6,288** deaths (see Table 1 and Figure 1). Information on confirmed cases are also available on the RKI website at [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Fallzahlen.html](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 per federal state, Germany (30/04/2020, 12:00 AM).

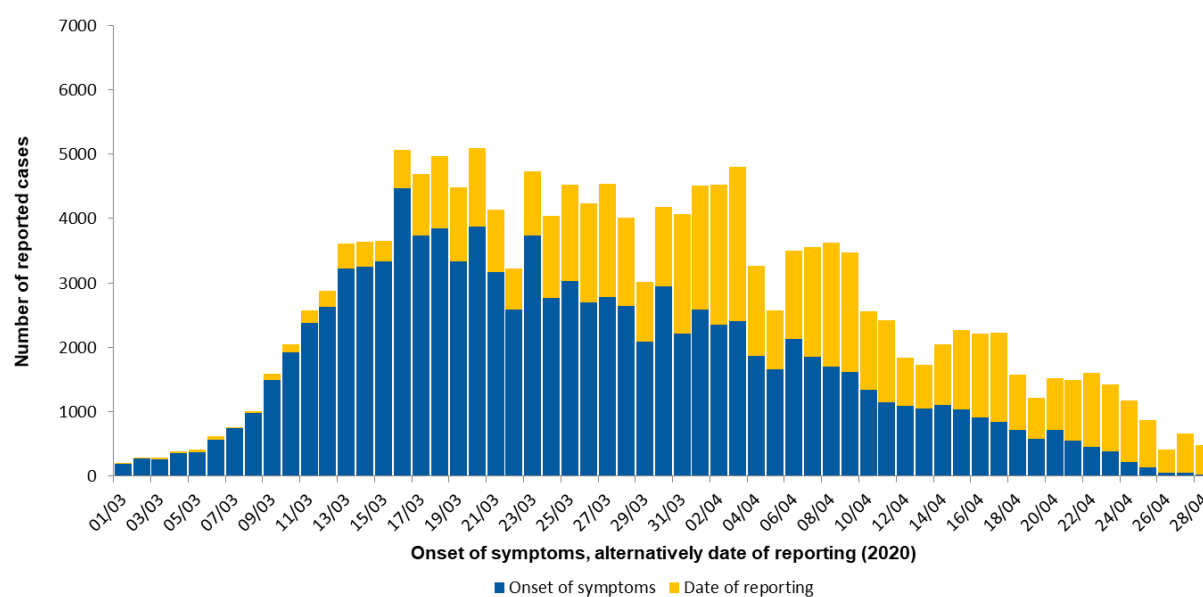
Federal State	Total Number of cases	Number of new cases	Cases/100,000 pop.	Number of deaths	Number of deaths/ 100,000 pop.
Baden-Wuerttemberg	31,609	273	286	1,353	12.2
Bavaria	42,080	250	322	1,799	13.8
Berlin	5,827	93	155	147	3.9
Brandenburg	2,831	63	113	113	4.5
Bremen	827	30	121	29	4.2
Hamburg	4,562	37	248	155	8.4
Hesse	8,304	120	133	353	5.6
Mecklenburg-Western Pomerania	690	3	43	17	1.1
Lower Saxony	10,067	95	126	416	5.2
North Rhine-Westphalia	32,687	258	182	1,219	6.8
Rhineland-Palatinate	6,029	47	148	166	4.1
Saarland	2,552	38	258	131	13.2
Saxony	4,561	52	112	156	3.8
Saxony-Anhalt	1,549	24	70	43	1.9
Schleswig-Holstein	2,690	11	93	106	3.7
Thuringia	2,254	84	105	85	4.0
<b>Total</b>	<b>159,119</b>	<b>1,478</b>	<b>191</b>	<b>6,288</b>	<b>7.6</b>



**Figure 1:** Number and cumulative incidence (per 100,000 population) of the 159,119 electronically reported COVID-19 cases in Germany by county and federal state (30/04/2020, 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

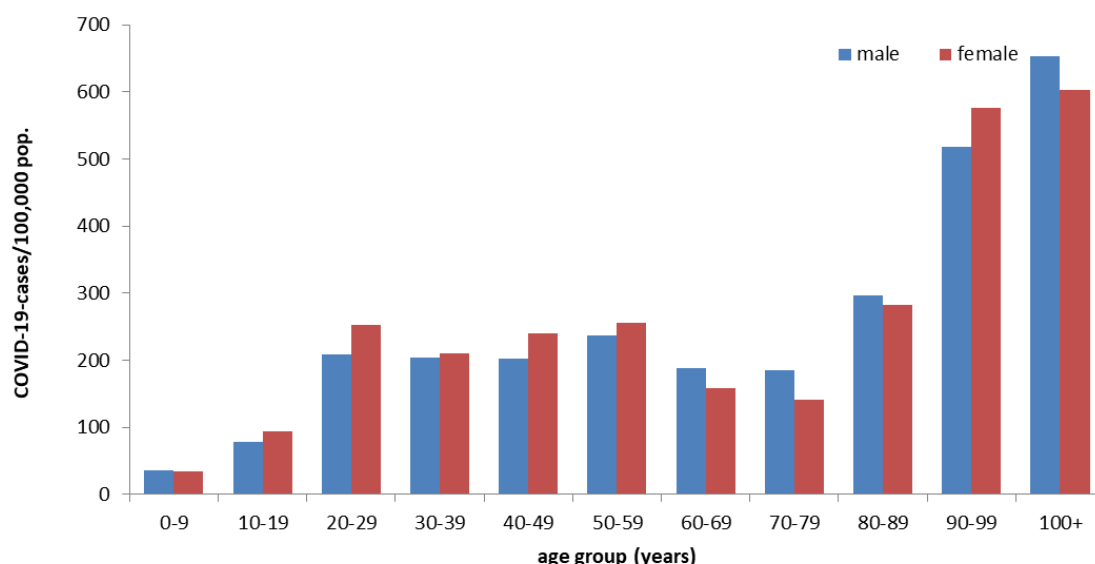
COVID-19 cases were first notified in Germany in January 2020. In 54,180 cases, onset of symptoms is unknown and therefore date of reporting is shown (see Figure 2).



**Figure 2:** Number of electronically reported COVID-19 cases in Germany by date of symptom onset and alternatively by date of reporting from 01/03/2020 (30/04/2020, 12:00 AM).

## Demographic distribution of cases

Of reported cases, 48% are female and 52% are male. Among notified cases, 2,725 were children under 10 years of age (1.7%), 6,659 children and youth aged 10 to 19 years (4.2%), 68,156 persons aged 20 to 49 years (43%), 51,209 persons aged 50 to 69 years (32%), 25,691 persons aged 70 to 89 years (16%) and 4,489 persons aged 90 years and older (2.8%). The age of 189 notified cases is unknown. The mean age of cases is 50 years (median 50 years). The highest incidences are in the age groups above 90 years (see Figure 3).



**Figure 3:** Electronically reported COVID-19 cases/100,000 population in Germany by age group and sex (n=158,508) for cases with information available (30/04/2020, 12:00 AM).

## Clinical aspects

Information on symptoms is available for 128,635 (81%) of the notified cases. Common symptoms are cough (50%), fever (42%) and rhinorrhoea (21%). Pneumonia was reported in 3,545 cases (2.8%). Hospitalisation was reported for 22,216 (17%) of 127,937 COVID-19 cases with information on hospitalisation available.

Approximately 123,500 persons have recovered from their COVID-19 infection. As the exact date of recovery is unknown in most cases, an algorithm was developed to estimate the number of recovered cases.

The 6,288 COVID-19 related deaths reported in Germany concerned 3,536 (56%) men and 2,747 (44%) women (sex was unknown in five cases, age was unknown in four cases) (see Table 2). The median age was 82 years. Of all deaths, 5,444 (87%) were in persons 70 years or older, but only 19% of all cases were in this age group. COVID-19 related outbreaks continue to be reported in nursing homes and hospitals. In some of these outbreaks, the number of deaths is relatively high.

**Table 2:** Number of notified COVID-19 deaths by age group and sex (Data available for 6,279 of notified deaths; 30/04/2020, 12:00 AM)

Sex	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	1*	1	4	9	36	157	425	976	1.518	404	4
Female	1		2	5	10	48	139	455	1.340	709	35
Total	2	1	6	14	46	205	564	1431	2858	1113	39

\* It is a wrong entry (actual age 91 years), the wrong entry will be corrected to the next data set.

## Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Law (IfSG), information on occupation, accommodation or care in a facility relevant for infection control is documented and electronically transmitted to RKI for notified COVID-19 cases (see Table 3).

**Table 3:** Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases (158,227 cases, 63,755 of whom are neither cared for, accommodated in or working in a facility; no data available for 59,539 cases; 30/04/2020, 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	2,116	1,374	350	1,010
	Occupation in facility	9,428	416	15	7,970
§ 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	1,587*	45	0	1,410
	Occupation in facility	1,911	95	7	1,730
§ 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	11,739	2,537	2,227	5,520
	Occupation in facility	7,103	283	26	5,570
§ 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	1,049	73	6	730

\*for care according to § 33 IfSG only cases below 18 years of age are taken into account, as other information may be assumed to be incorrect.

IfSG: Protection Against Infection Law

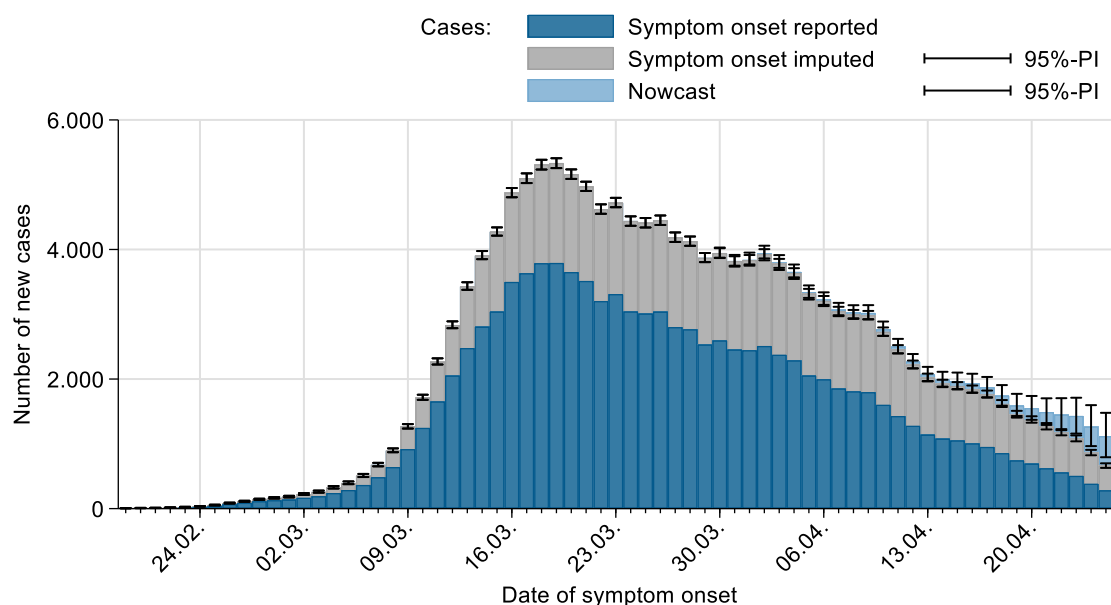
Thus far, 9,428 cases with a SARS-CoV-2 infection have been notified among staff working in medical facilities as defined by Section 23 IfSG. Among the cases reportedly working in medical facilities, 72% were female and 28% male. The median age was 41 years. Hospitalisation was reported for 416 cases among staff working in medical facilities with information available (4.4%). Due to missing data on occupation in 38% of cases, the true proportion of cases working in medical facilities may be higher.

The high number of case among persons 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 attending or working in facilities concerned with child care or education (Section 33 IfSG) reflects that children are not as affected. None of the children cared for there have been reported as deceased. Out of 1,911 cases working in these care facilities, 7 died.

Among the COVID-19 cases reported as working in all of the above mentioned facilities, the proportion of cases that actually acquired their infection in these settings is unknown.

## Estimation of the reproduction number (R)

The case numbers presented do not fully reflect the progression of the number of cases of illness, as the time between actual onset of illness, diagnosis, reporting and transmission to the Robert Koch Institute varies greatly. Therefore, an attempt is being made to model the actual course of the number of COVID-19 cases that have already occurred by means of a so-called nowcasting. Figure 4 shows the result of this analysis. A detailed description of the methodology is available at [https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/17/Art\\_02.html](https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/17/Art_02.html) (Epid. Bull. 17 | 2020 from 23.04.2020)



**Figure 4:** Display of cases with known onset of the disease (dark blue), estimated onset of the disease for cases where the onset of the disease has not been reported (grey) and estimated course of already symptomatic cases (light blue) (as of 30/04/2020 12 AM, taking into account cases up to 26/04/2020).

The reproduction number,  $R$ , is the mean number of persons infected by a case.  $R$  can only be estimated based on the nowcasting and not directly extracted from the notification system. The nowcasting and the  $R$ -estimate include all transmitted cases with onset of disease up to 3 days before data status. Cases with a more recent onset of the disease were not taken into account as they had not yet been transmitted in sufficient numbers and would lead to unstable estimates.

The number of new cases estimated during the nowcasting process was previously presented as a moving 3-day average to compensate for random effects of individual days. Since April 29, 2020, the RKI has been using a 4-day average, which smooths the course of the bar chart to a certain extent. Figure 4 shows the current result of the nowcasting. The result of the  $R$ -estimate does not change thereby. Due to the smoothed course of the nowcasting, the calculation of the point estimator of  $R$  can be performed in fewer steps. For a given day, this value is now calculated as a simple quotient of the number of new cases for this day divided by the number of new cases 4 days before.

The current estimate is  $R = 0.76$  (95% prediction interval: 0.64-0.89) and is based on current electronically notified cases (30/04/2020, 12:00 A.M.).

## 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 the capacities for intensive care 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, reporting is compulsory for all hospital sites with intensive care beds.

As of 30/04/2020, a total of 1,256 hospitals or departments reported to the DIVI registry. Overall, 32,691 intensive care beds were registered, of which 19,899 (61%) are occupied, and 12,792 beds (39%) are currently available. The number of COVID-19 cases treated in participating hospitals are shown in Table 4.

**Table 4:** COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (30/04/2020, 9:15 AM).

	Number of patients	Percentage	Change to previous day
<b>Currently in ICU</b>	2,280		-135
- of these: mechanically ventilated	1,605	70%	-114
<b>Discharged from ICU</b>	9,194		+298
- of these: deaths	2,655	29%	+52

## Information from further RKI-based surveillance systems for acute respiratory illnesses

GrippeWeb ("FluWeb") is a web interface at RKI for monitoring the activity of acute respiratory illness (ARI) utilizing information from the population. In Week 17, 2020, the rate of ARI ("ARI rate" as well as the rate of influenza-like illnesses ("ILI-rate")) has remained stable. ARE and ILI rates were lower than in previous seasons at this time of the year. Further information can be found under <https://grippeweb.rki.de/>.

The Influenza Working Group (AGI) monitors ARI through a sentinel network of physicians in private practices. In week 17, 2020, the number of patient visits due to respiratory infections increased in the age group below 5 years. In all other age groups, the number of patient visits continued to fall. The AGI broadened its viral surveillance to include SARS-CoV-2. Since Week 8, 2020, a total of 13 SARS-CoV-2 positive samples were detected in 1,232 tested samples (1%) sent from a subsample of the sentinel physicians. The influenza season ended in Week 12, 2020. No influenza activity has been detected since Week 15, 2020. Further information can be found under <https://influenza.rki.de/>.

A third, ICD 10 Code based system, monitors severe acute respiratory illness (SARI) in hospitalized patients (ICD-10-Codes J09 to J22: primary diagnoses influenza, pneumonia or other acute infections of the lower respiratory tract). In Week 16, 2020, 26% of all reported cases were diagnosed with COVID-19 (Table 5). While there were no SARI cases diagnosed with COVID-19 in children under 14 years of age, between 24% and 31% of SARI cases in the age groups over 15 years of age had COVID-19 (Table 5).

Please note that only patients with an ICD-10 Code for SARI in the main diagnosis and hospitalisation duration of up to one week were included in this analysis.



**Table 5:** Proportion of cases with a diagnosis of COVID-19 (U07.1!) among SARI cases (ICD-10-Codes J09-J22) with duration of hospitalisation of up to one week and with a date of admission in weeks 12 to 16, 2020, from 71 sentinel hospitals

	COVID-19 diagnosis (U07.1!) in SARI cases				
Age group	Week 12, 2020	Week 13, 2020	Week 14, 2020	Week 15, 2020	Week 16, 2020
0 to 4 years	0%	0%	0%	0%	0%
5 to 14 years	0%	0%	0%	0%	0%
15 to 34 years	2%	36%	23%	24%	28%
35 to 59 years	15%	44%	42%	48%	31%
60 to 79 years	13%	25%	33%	37%	26%
80 years und older	2%	11%	28%	25%	24%
<b>Total</b>	<b>6%</b>	<b>22%</b>	<b>31%</b>	<b>32%</b>	<b>26%</b>

## Assessment by the RKI

At the global and the national level, the situation is very dynamic and must be taken seriously. Severe and fatal courses occur in some cases. [The number of cases, hospitalisations and fatalities in Germany 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. The probability of serious disease progression increases with increasing age and underlying illnesses. The risk of disease varies from region to region. The burden on the health care system depends on the geographical and age distribution of cases, health care capacity and initiation of containment measures (isolation, quarantine, social distancing etc.), and may be very high in some geographical regions. This assessment may change on short notice as a result of new findings.

## Measures taken by Germany

- The wearing of (non-medical) face masks in public transport and in shops is now obligatory 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/>.
- RKI teams are currently supporting outbreak containment measures with a focus on outbreaks in retirement and health care homes as well as hospitals in several federal states.
- As of 23/03/2020, gatherings of more than 2 persons (with the exception of families and household members) are banned in all federal states. Restaurants and businesses concerned with body care were closed. In public spaces, all persons must maintain a distance of 1.5 metres to other individuals <https://www.bundesregierung.de/breg-de/themen/coronavirus/besprechung-der-bundestkanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248> (in German)
- A new federal law was implemented on 28/03/2020 for the protection of the public in the event of epidemic situations, granting the federal government additional competencies for the control of epidemics: <https://www.bundesgesundheitsministerium.de/presse/pressemitteilungen/2020/1-quartal/corona-gesetzipaket-im-bundesrat.html> (in German)
- On 15/04/2020, the German government and the federal states agreed to gradually reduce social distancing measures <https://www.bundesregierung.de/breg-de/themen/coronavirus/fahrplan-corona-pandemie-1744202> (in German)