



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

22/04/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
145,694 (+ 2,237*)	4,879 (+281*)	3.3%	ca. 99,400**

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

*Change from previous day; **Estimate

Summary (as of 22/04/2020, 12:00 AM)

- In total, **145,694** COVID-19 cases and **4,879** 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 (**297**), Baden-Wuerttemberg (**261**), Saarland (**239**) and Hamburg (228).
- Most cases (67%) are between 15 and 59 years old; men (48%) and women (52%) 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.
- As of 10/04/2020, the RKI no longer classifies countries or regions as international risk areas.

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 **145,694 (+2,237)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated at the RKI, including **4,879** 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 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 (22/04/2020, 12:00 AM).

Federal State	Total Number of cases	Number of new cases	Cases/100,000 pop.	Number of deaths
Baden-Wuerttemberg	28,898	186	261	1,063
Bavaria	38,814	504	297	1,424
Berlin	5,312	75	142	105
Brandenburg	2,389	114	95	74
Bremen	624	15	91	26
Hamburg	4,204	0	228	91
Hesse	7,380	149	118	265
Mecklenburg-Western Pomerania	656	1	41	15
Lower Saxony	9,236	138	116	328
North Rhine-Westphalia	30,185	796	168	964
Rhineland-Palatinate	5,593	32	137	122
Saarland	2,367	39	239	97
Saxony	4,273	20	105	122
Saxony-Anhalt	1,395	12	63	33
Schleswig-Holstein	2,496	82*	86	79
Thuringia	1,872	74	87	71
Total	145,694	2,237	175	4,879

*The higher increase of new cases in Schleswig-Holstein is due to the conversion to a new software version on 21/04/2020.

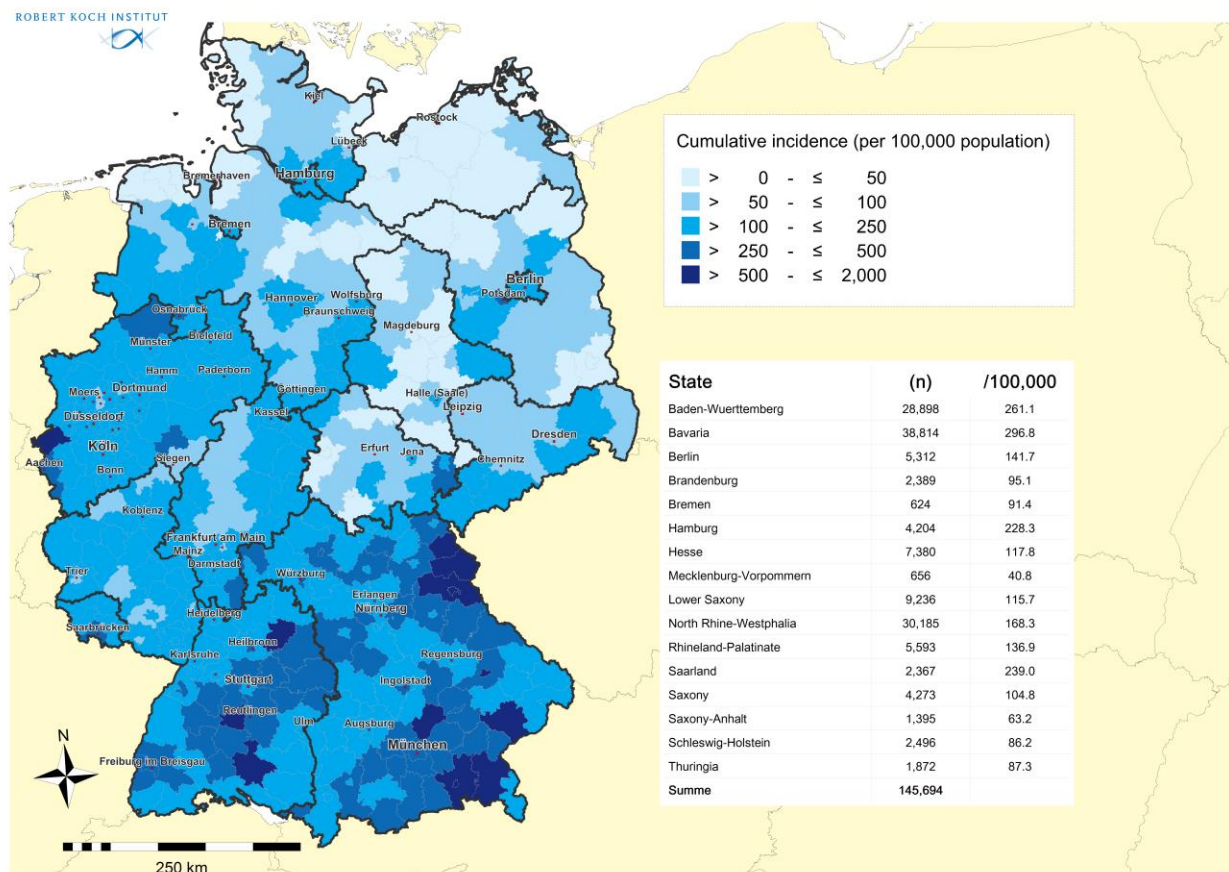


Figure 1: Number and cumulative incidence (per 100,000 population) of the 145,694 electronically reported COVID-19 cases in Germany by county and federal state (22/04/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local health authority).

Distribution of cases over time

COVID-19 cases were first notified in Germany in January 2020. In 51,616 cases, onset of symptoms is unknown and therefore date of reporting is shown (see Figure 2).

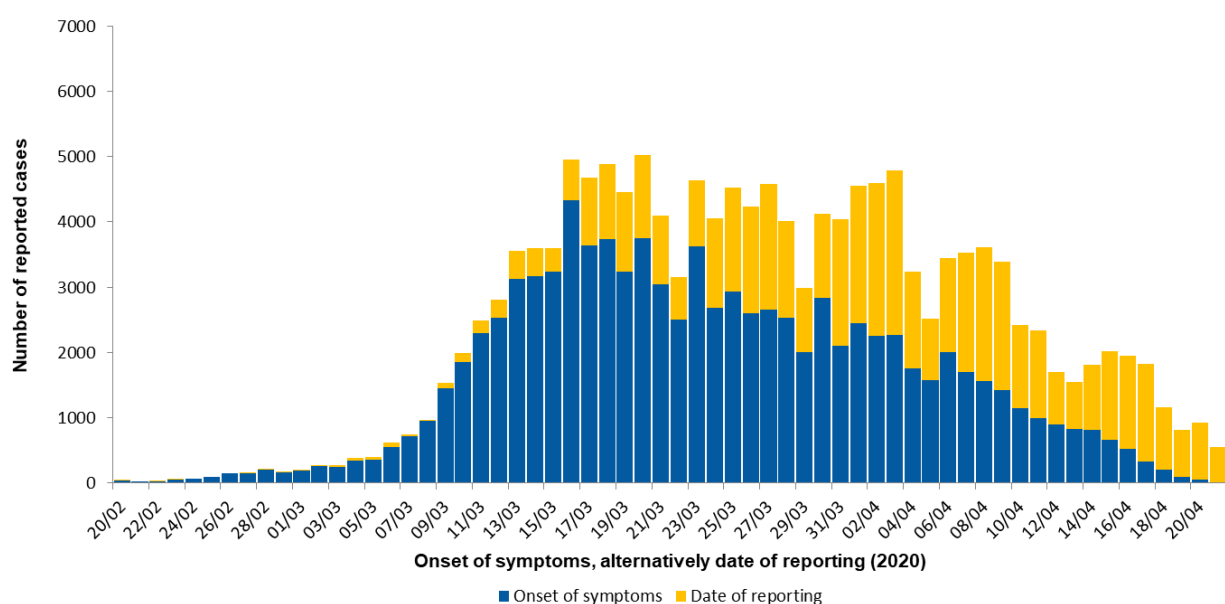


Figure 2: Number of electronically reported COVID-19 cases in Germany by date of symptom onset and alternatively by date of reporting from 20/02/2020, 12:00 AM).

Demographic distribution of cases

Of reported cases, 48% are male and 52% are female. Among notified cases, 2,362 were children under 10 years of age (2%), 5,991 children and youth aged 10 to 19 years (4%), 62,450 persons aged 20 to 49 years (43%), 47,742 persons aged 50 to 69 years (33%), 23,069 persons aged 70 to 89 years (16%) and 3,886 persons aged 90 years and older (3%). The age of 193 notified cases is unknown. The middle age of cases is 50 years (median 50 years). The highest incidences are in the age groups above 90 years (see Figure 3), with only 2.7% of reported cases.

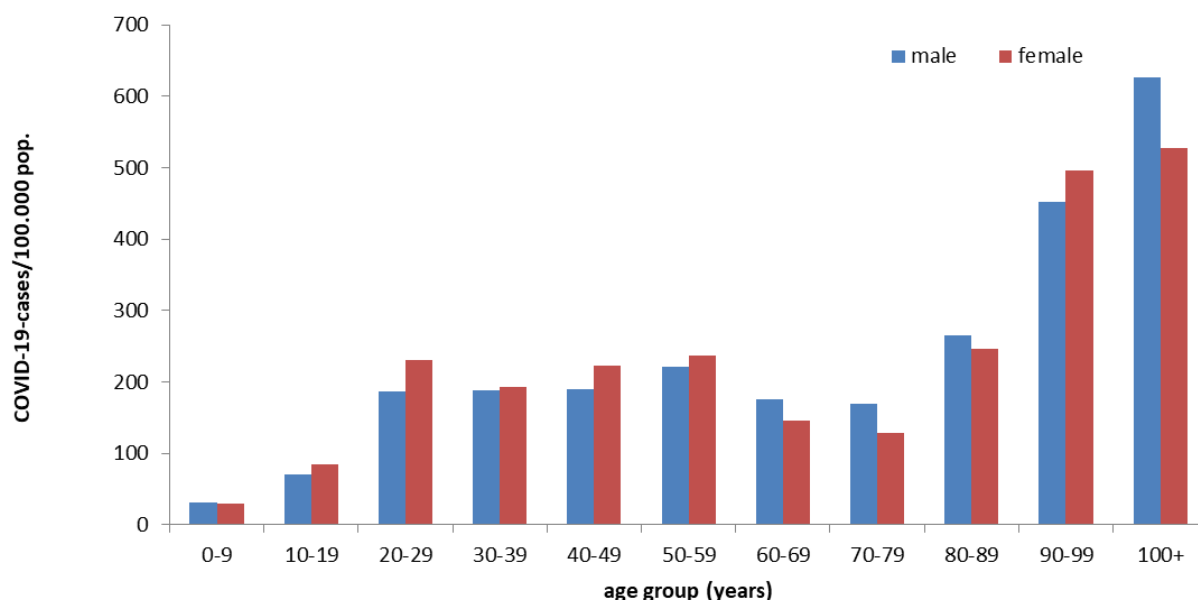


Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and sex (n=145,045) for cases with information available (22/04/2020, 12:00 AM).

Clinical aspects

Information on symptoms is available for 115,384 (79%) of the notified cases. Common symptoms are cough (50%), fever (42%) and rhinorrhoea (21%). Pneumonia was reported in 3,028 cases (3%). Hospitalisation was reported for 19,335 (17%) of 114,992 COVID-19 cases with information on hospitalisation available.

Approximately 99,400 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 4,879 COVID-19 related deaths reported in Germany concerned 2,802 (57%) men and 2,074 (43%) women (sex was unknown in 3 cases). The median age was 82 years. Of all deaths, 4,220 (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 4,875 of the 4,879 notified deaths; 22/04/2020, 12:00 AM)

Sex	Age groups (years)				
	<60	60 - 69	70 - 79	80 - 89	≥90
male	163	324	787	1,201	326
female	60	110	357	1,006	541
total	223	434	1,144	2,207	867

Occupation, accommodation or care in facilities

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

Table 3: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases

Facility according to	Cared for/ accommodation in facility	Occupation in facility	Total
§ 23 IfSG (e.g. hospitals, outpatient clinics and practices, dialysis clinics or outpatient nursing services)	1,809	7,862	9,671
§ 33 IfSG (e.g. day care facilities, kindergartens, facilities for after school care, schools or other educational facilities, children's homes, holiday camps)	1,383*	1,648	3,031
§ 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)	9,258	6,008	15,266
§ 42 IfSG (e.g. kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Not applicable	798	798
No occupation, care or accommodation in the above institutions			57,615
Unknown			58,572

*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, **7,862** cases with a SARS-CoV-2 infection have been notified among staff working in medical facilities as defined by Section 23 IfSG (Table 3). Among the cases reportedly working in medical facilities, 72% were female and 28% male. The median age was **41** years. Hospitalisation was reported for **333** of **7,365** cases among staff working in medical facilities with information available (**4.5%**). There were **18** COVID-19 related deaths among staff working in medical facilities. The proportion of cases reported as working in medical facilities among all cases increased over time from at least **3.6%** in Week 12, **4.8%** in Week 13, **5.5%** in Week 14, **6.8%** in Week 15, to **7.0%** in Week 16, 2020. Due to missing data on occupation over 40% of cases, the true proportion of cases working in medical facilities may be higher.

Table 3 summarizes COVID-19 cases among persons cared for or working in a number of other facilities. The high case numbers among persons cared for or working in various care facilities are in keeping with numerous reported outbreaks, especially in nursing homes. The low number of cases attending or working in facilities concerned with child care or education reflects that children are not as affected and that schools have been closed during recent weeks.

The proportion of persons with COVID-19 reported as working in the above facilities who actually acquired their infection in these settings is unknown.

Estimation of the reproduction number (R)

The reproduction number, R, is the mean number of persons infected by a case. R can only be estimated and not directly extracted from the notification system. The current estimate is $R = 0.9$ (95% confidence interval: **0.7-1.0**) and is based on current electronically notified cases (22/04/2020, 12:00 A.M.) and an assumed mean generation time of 4 days. Cases with disease onset on the preceding 3 days were

excluded from the estimation as their low number due to incomplete reporting would lead to an unstable estimate. For more details on the methodology see Epid. Bull. 17 | 2020 (in German)

https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/17/Art_02.html

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. 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 22/04/2020, a total of 1,230 hospitals or departments reported to DIVI to the registry. Overall, 31,885 intensive care beds were registered, of which 19,199 (60%) are occupied, and 12,686 beds (40%) 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 (22/04/2020, 9:15 AM). Migration of the registry to a new server led to temporary reporting delays, thus comparisons with data prior to 03/04/2020 are not meaningful. Source: <https://www.intensivregister.de/#/intensivregister>

	Number of patients	Percentage	Change to previous day
Currently in ICU	2,799		-109
- of these: mechanically ventilated	2,046	73%	-66
Discharged from ICU	7,453		+416
- of these: deaths	2,237	30%	+91

Laboratory tests

Data on SARS-CoV-2 test numbers from university hospitals, research institutions as well as clinical and outpatient laboratories throughout Germany are collected and merged weekly at the RKI. These data are transmitted via an internet-based survey of the RKI via Voxco (RKI test laboratory query), by the network for respiratory viruses (RespVir), the antibiotic resistance surveillance established at the RKI or via an internal query of a laboratory network.

A total of at least 2,072,669 tested samples have been reported until week 16/2020. Among these, 155,773 samples (7,5%) have tested positive for SARS-CoV-2.

Table 5: Laboratory tests performed for SARS-CoV-2 in Germany, calendar weeks 11 - 16 (21/04/2020)

Calendar week 2020	Number of tests	Positive tests	Number of participating laboratories
≤10	124,716	3,892 (3,1%)	90
11	127,457	7,582 (5,9%)	114
12	348,619	23,820 (6,8%)	152
13	361,374	31,391 (8,7%)	150
14	408,173	36,850 (9,0%)	152
15	378,881	30,700 (8,1%)	160
16	323,449	21,538 (6,7%)	161

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

Sum	2,072,669	155,773
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In addition to the number of tests carried out, information on daily test capacity is queried. In week 16, 126 laboratories reported a total capacity of 136,064 tests per day. 126 laboratories provided information on their working days per week, which ranged from 5 to 7 working days. Assuming a minimum of 5 working days per week for laboratories without provided information on working days, a testing capacity of at least 818,426 feasible PCR tests for the detection of SARS-CoV-2 (daily test capacity of the respective laboratory x working days, sum of all transmitting laboratories) can be derived. In week 16, 34 laboratories reported a backlog of 2,258 samples to be processed. 50 laboratories reported delivery problems for reagents and, increasingly, for swabs.

In addition to this aggregated weekly recording of SARS-CoV-2 laboratory tests, more detailed data on SARS-CoV-2 tests have been collected by the laboratories involved in Antibiotic Resistance Surveillance (ARS) since 01/01/2020. As of 21/04/2020, 49,677 (8.4%) of 558,858 tests have tested positive for SARS-CoV-2 in 52 laboratories.

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 continues to increase. 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

International risk areas

As of 10/04/2020 countries and regions are not longer classified as international risk areas. Due to pandemic spread, there is a global risk of acquiring COVID-19. Outbreaks are ongoing in a considerable number of countries, often with high numbers of cases; in other countries, the exact numbers of cases is unknown. Therefore there is a risk of transmission in Germany as well as in many other, not always well-defined regions worldwide.

All arriving travellers in Germany are to remain in quarantine for 14 days:

<https://www.bundesregierung.de/breg-de/themen/coronavirus/neue-einreiseregeln-1739634> (in German)

Other measures

- 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-gesetzespaket-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)