



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

23/04/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
148,046 (+ 2,352*)	5,094 (+215*)	3.4%	ca. 103,300**

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

*Change from previous day; **Estimate

Summary (as of 23/04/2020, 12:00 AM)

- In total, **148,046** COVID-19 cases and **5,094** 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 (**301**), Baden-Wuerttemberg (**266**), Saarland (**242**) and Hamburg (**233**).
- 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.

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 **148,046 (+2,352)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated at the RKI, including **5,094** 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 (23/04/2020, 12:00 AM).

Federal State	Total Number of cases	Number of new cases	Cases/100,000 pop.	Number of deaths
Baden-Wuerttemberg	29,443	545	266	1,113
Bavaria	39,395	581	301	1,476
Berlin	5,324	12	142	105
Brandenburg	2,447	58	97	84
Bremen	672	48	98	27
Hamburg	4,286	82	233	113
Hesse	7,593	213	121	286
Mecklenburg-Western Pomerania	659	3	41	15
Lower Saxony	9,391	155	116	340
North Rhine-Westphalia	30,584	399	171	999
Rhineland-Palatinate	5,643	50	138	131
Saarland	2,395	28	242	99
Saxony	4,327	54	106	127
Saxony-Anhalt	1,425	30	65	34
Schleswig-Holstein	2,530	34	87	84
Thuringia	1,932	60	90	61
Total	148,046	2,352	178	5,094

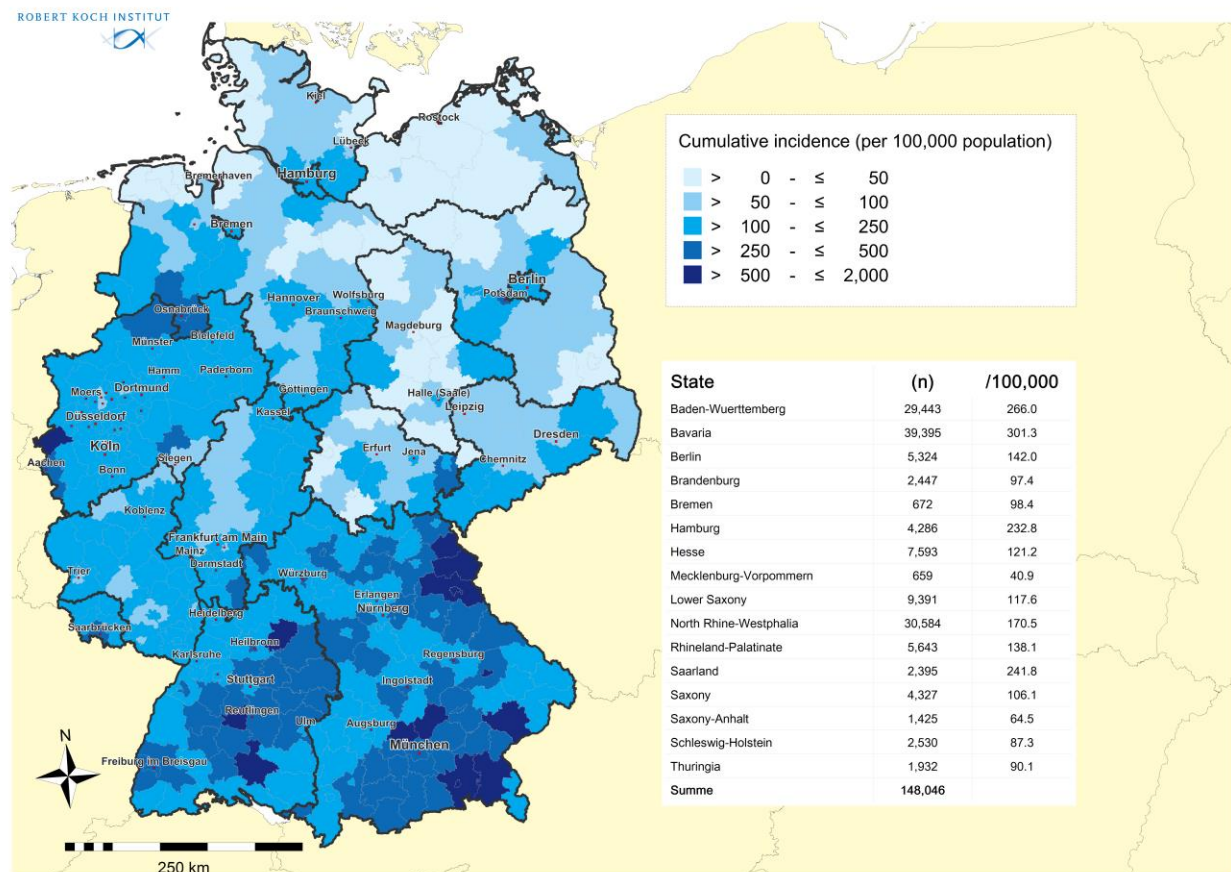


Figure 1: Number and cumulative incidence (per 100,000 population) of the 148,046 electronically reported COVID-19 cases in Germany by county and federal state (23/04/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local health authority).

Distribution of cases over time

COVID-19 cases were first notified in Germany in January 2020. In 52,063 cases, onset of symptoms is unknown and therefore date of reporting is shown (see Figure 2).

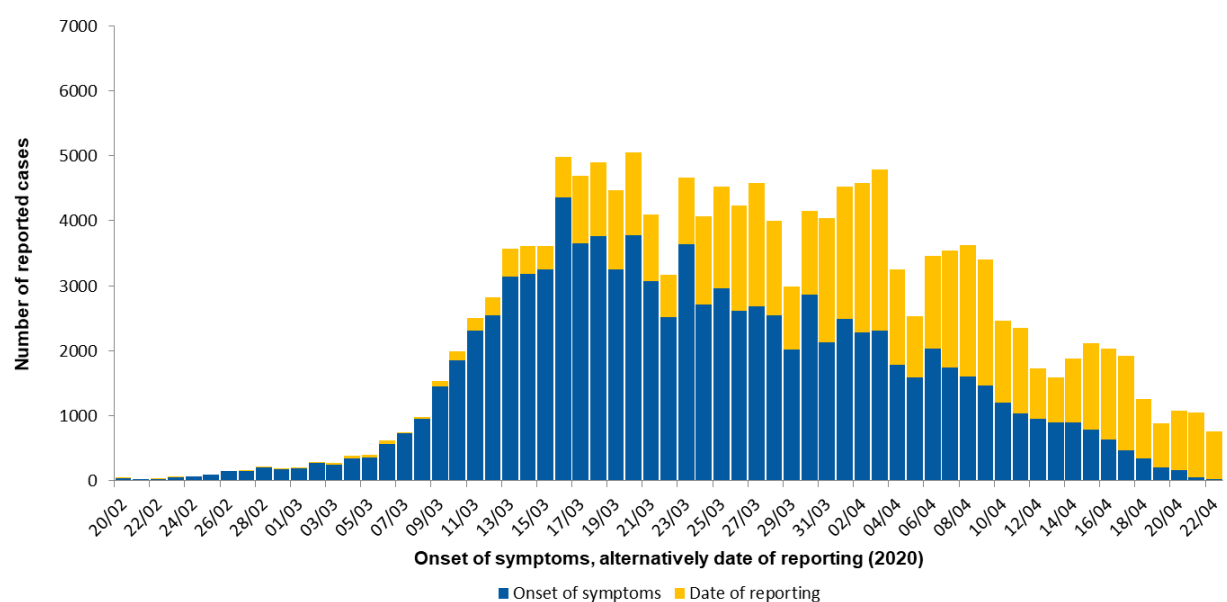


Figure 2: Number of electronically reported COVID-19 cases in Germany by date of symptom onset and alternatively by date of reporting from 20/02/2020, 12:00 AM).

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

Demographic distribution of cases

Of reported cases, 48% are male and 52% are female. Among notified cases, 2,425 were children under 10 years of age (2%), 6,103 children and youth aged 10 to 19 years (4%), 63,485 persons aged 20 to 49 years (43%), 48,351 persons aged 50 to 69 years (33%), 23,514 persons aged 70 to 89 years (16%) and 3,990 persons aged 90 years and older (3%). The age of 177 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.

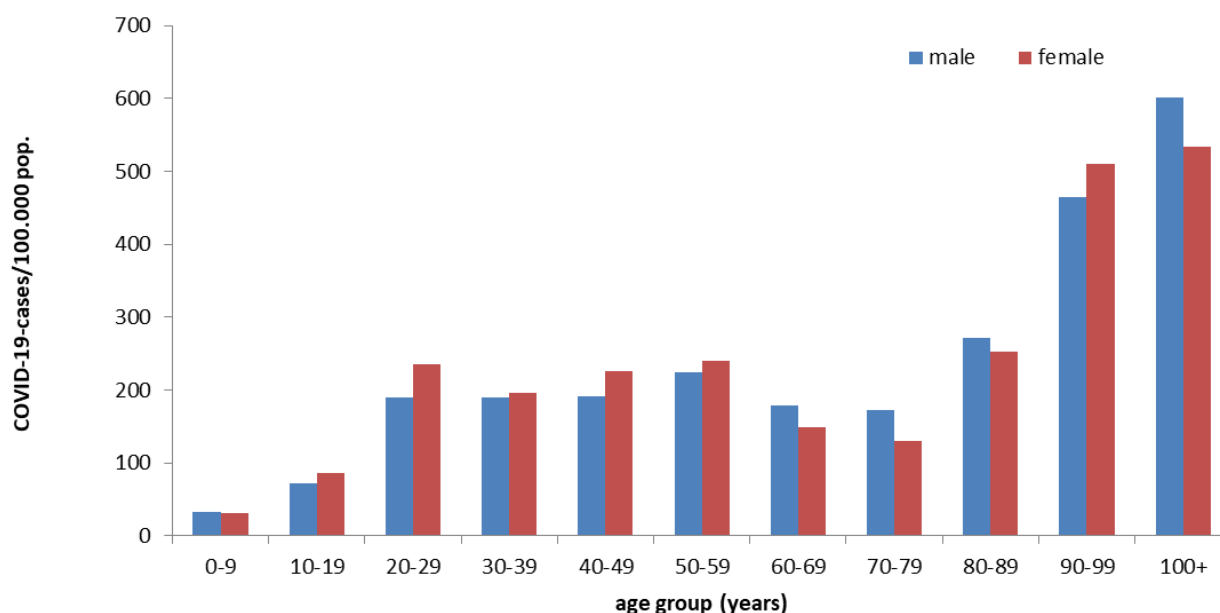


Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and sex (n=147,411) for cases with information available (23/04/2020, 12:00 AM).

Clinical aspects

Information on symptoms is available for 117,619 (79%) of the notified cases. Common symptoms are cough (50%), fever (42%) and rhinorrhoea (21%). Pneumonia was reported in 3,112 cases (3%). Hospitalisation was reported for 19,835 (17%) of 117,198 COVID-19 cases with information on hospitalisation available.

Approximately 103,300 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 5,094 COVID-19 related deaths reported in Germany concerned 2,935 (58%) men and 2,156 (42%) women (sex was unknown in 3 cases). The median age was 82 years. Of all deaths, 4,409 (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 5,091 of the 5,094 notified deaths; 23/04/2020, 12:00 AM)

Sex	Age groups (years)				
	<60	60 - 69	70 - 79	80 - 89	≥90
male	170	343	827	1,260	334
female	56	114	370	1,048	568
total	226	457	1,197	2,308	902

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)	1,883	8,102	9,985
§ 33 IfSG (e.g. day care facilities, kindergartens, facilities for after school care, schools or other educational facilities, children's homes, holiday camps)	1,420*	1,675	3,095
§ 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)	9,679	6,173	15,852
§ 42 IfSG (e.g. kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Not applicable	832	832
No occupation, care or accommodation in the above institutions			58,592
Unknown			58,929

*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, **8,102** 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 **348** of **7,587** cases among staff working in medical facilities with information available (**4,6%**). There were **13** 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, **4,9%** in Week 13, **5,6%** in Week 14, 6.8% in Week 15, to **7,2%** 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 (23/04/2020, 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

Information from further surveillance systems for acute respiratory illnesses based at RKI

GrippeWeb ("FluWeb") is a web interface at RKI for monitoring the activity of acute respiratory illness (ARI) utilizing information from the population. In Week 16, 2020, the rate of ARI ("ARI rate" as well as the rate of influenza-like illness ("ILI-rate") declined compared to the previous week. Thus, 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 ARE through a sentinel network of physicians in private practice. Since week 12, 2020, until week 16, 2020, the number of patient visits has declined continuously among patients of all age groups. 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 1,172 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 airways). In Week 15, 2020, 32% of all reported cases were diagnosed with COVID-19 (Table 4), with no cases among children under 15 years of age and up to 49% among 35 to 59 year old patients. Please note that only patients with an ICD-10 Code for SARI in the main diagnosis of the DRG (Diagnosis Related Group) and a hospitalisation duration of up to one week were included in this analysis.

Table 4: 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 15, 2020, from 71 sentinel hospitals

Age group	COVID-19 diagnosis (U07.1!) in SARI cases			
	Week 12, 2020	Week 13, 2020	Week 14, 2020	Week 15, 2020
0 to 4 years	0%	0%	0%	0%
5 to 14 years	0%	0%	0%	0%
15 to 34 years	5%	32%	20%	19%
35 to 59 years	15%	45%	43%	49%
60 to 79 years	16%	27%	32%	38%
80 years und older	3%	12%	27%	24%
Total	8%	22%	30%	32%

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 23/04/2020, a total of 1,241 hospitals or departments reported to DIVI to the registry. Overall, 33,716 intensive care beds were registered, of which 19,412 (58%) are occupied, and 14,304 beds (42%) are currently available. The number of COVID-19 cases treated in participating hospitals are shown in Table 5.

Table 5: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (23/04/2020, 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	2,776		-23
- of these: mechanically ventilated	2,045	74%	-1
Discharged from ICU	7,900		+447
- of these: deaths	2,352	30%	+115

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.

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

- 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)