



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

28/04/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
<b>156,337</b> (+1,144*)	<b>5,913</b> (+163*)	<b>3.8%</b>	<b>ca. 117,400**</b>

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

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

### Summary (as of 28/04/2020, 12:00 AM)

- In total, **156,337** COVID-19 cases and **5,913** 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 (**317**), Baden-Wuerttemberg (**282**), Saarland (253) and Hamburg (**245**).
- 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

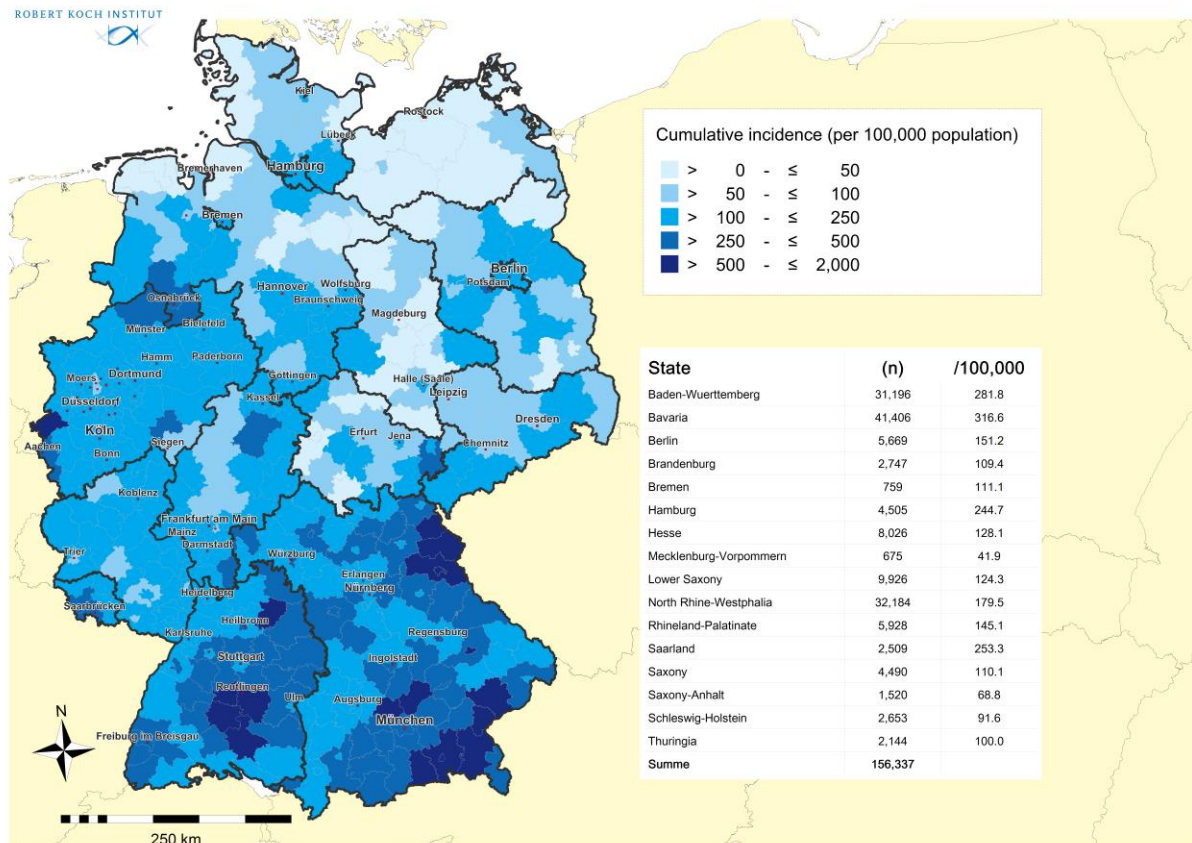
## Geographical distribution of cases

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 **156,337 (+1,144)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated at the RKI, including 5,913 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 (28/04/2020, 12:00 AM).

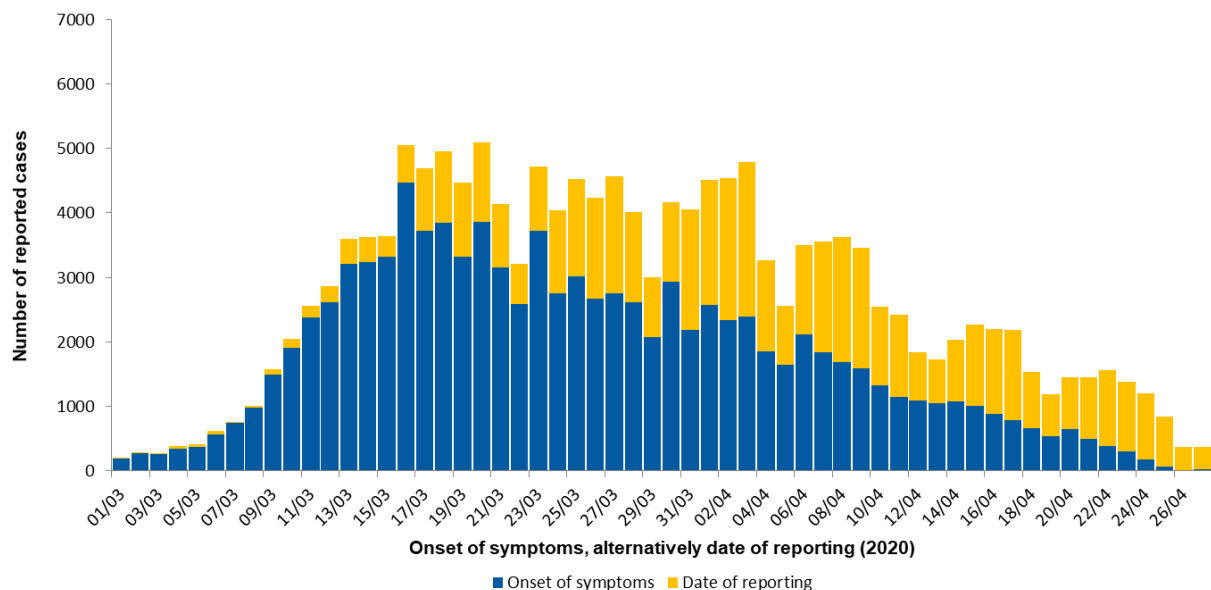
Federal State	Total Number of cases	Number of new cases	Cases/100,000 pop.	Number of deaths	Number of deaths/100,000 pop.
Baden-Wuerttemberg	31,196	153	282	1,269	11.5
Bavaria	41,406	336	317	1,681	12.9
Berlin	5,669	31	151	127	3.4
Brandenburg	2,747	26	109	106	4.2
Bremen	759	5	111	27	4.0
Hamburg	4,505	30	245	142	7.7
Hesse	8,026	47	128	333	5.3
Mecklenburg-Western Pomerania	675	1	42	17	1.1
Lower Saxony	9,926	79	124	394	4.9
North Rhine-Westphalia	3,2184	305	179	1,171	6.5
Rhineland-Palatinate	5,928	49	145	157	3.8
Saarland	2,509	6	253	123	12.4
Saxony	4,49	32	110	148	3.6
Saxony-Anhalt	1,52	5	69	39	1.8
Schleswig-Holstein	2,653	15	92	101	3.5
Thuringia	2,144	24	100	78	3.6
<b>Total</b>	<b>156,337</b>	<b>1,144</b>	<b>188</b>	<b>5,913</b>	<b>7.1</b>



**Figure 1:** Number and cumulative incidence (per 100,000 population) of the 156,337 electronically reported COVID-19 cases in Germany by county and federal state (28/04/2020, 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 53,193 cases, onset of symptoms is unknown and therefore date of reporting is shown (see Figure 2).

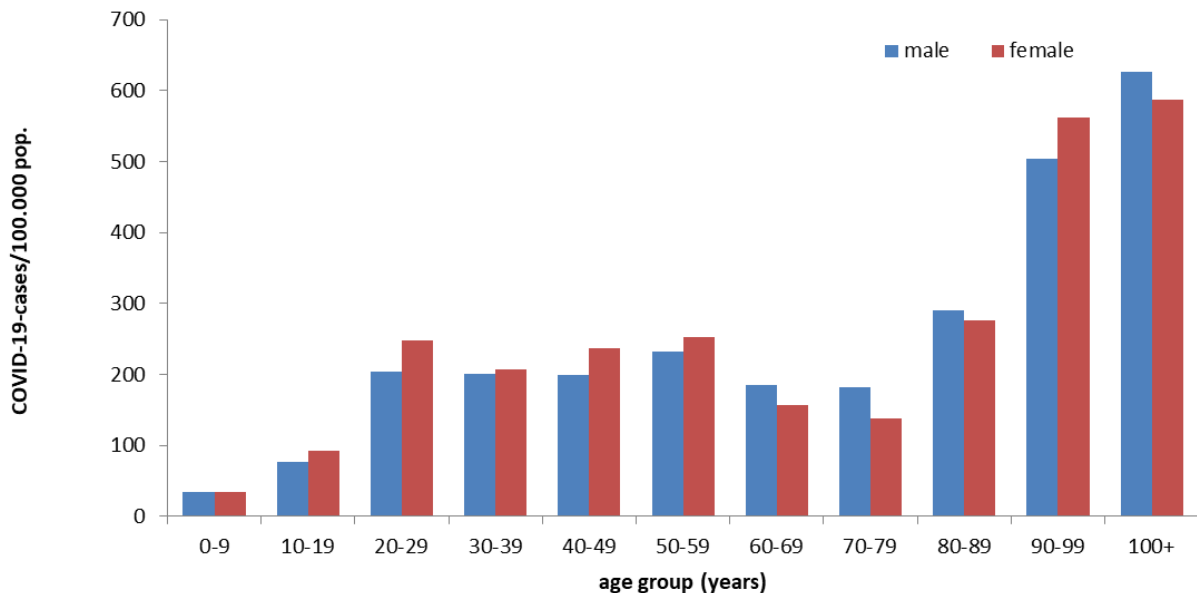


**Figure 2:** Number of electronically reported COVID-19 cases in Germany by date of symptom onset and alternatively by date of reporting from 01/03/2020 (28/04/2020, 12:00 AM).

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

## Demographic distribution of cases

Of reported cases, 52% are female and 48% are male. Among notified cases, 2,658 were children under 10 years of age (1.7%), 6,528 children and youth aged 10 to 19 years (4.2%), 66,952 persons aged 20 to 49 years (43%), 50,472 persons aged 50 to 69 years (32%), 25,157 persons aged 70 to 89 years (16%) and 4,373 persons aged 90 years and older (2.8%). The age of 196 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).



**Figure 3:** Electronically reported COVID-19 cases/100,000 population in Germany by age group and sex (n=154,565) for cases with information available (28/04/2020, 12:00 AM).

## Clinical aspects

Information on symptoms is available for 125,477 (80%) of the notified cases. Common symptoms are cough (50%), fever (42%) and rhinorrhoea (21%). Pneumonia was reported in 3,391 cases (2.7%). Hospitalisation was reported for 21,477 (17%) of 124,854 COVID-19 cases with information on hospitalisation available.

Approximately 117,400 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 5,913 COVID-19 related deaths reported in Germany concerned 3,345 (57%) men and 2,563 (43%) women (sex was unknown in 5 cases) (see Table 2). The median age was 82 years. Of all deaths, 5,134 (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.

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+
<b>Male</b>	0	1	4	8	35	142	394	937	1,437	382	4
<b>Female</b>	1	0	2	4	9	44	132	431	1,250	658	32
<b>Total</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>12</b>	<b>44</b>	<b>186</b>	<b>526</b>	<b>1,368</b>	<b>2,687</b>	<b>1,040</b>	<b>36</b>

**Table 2:** Number of notified COVID-19 deaths by age group and sex (Data available for 5,907 of notified deaths; 28/04/2020, 12:00 AM)

## 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 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 (155,482 cases; 28/04/2020, 12:00 AM)

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)	2,043	9,000	11,043
§ 33 IfSG (e.g. day care facilities, kindergartens, facilities for after school care, schools or other educational facilities, children's homes, holiday camps)	1,532*	1,842	3,374
§ 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)	11,155	6,816	17,971
§ 42 IfSG (e.g. kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Not applicable	973	973
No occupation, care or accommodation in the above institutions			62,275
Unknown			59,846

\*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, **9,000** 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 **391** cases among staff working in medical facilities with information available (4,3%). **The RKI estimates that 7,500 of the 9,000 COVID-19 cases working in medical institutions have now recovered.** There were **14** COVID-19 related deaths among staff working in medical facilities. Due to missing data on occupation 41% of cases, the true proportion of cases working in medical facilities may be higher. **For persons cared for in medical institutions, 322 were reported as deceased (16%).**

The high number of case among persons cared for or working in various care facilities is consistent with the 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. **None of the children have been reported as deceased. Out of 1,842 persons working in these care facilities, 5 died.**

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 (28/04/2020, 12:00 A.M.) and an assumed mean generation time of 4 days. From 29/03/2020, the number of new cases per day was about 4,000, with a further decline to about 2,000 new cases per day since 13.04.2020. The decline observed since the end of March is not uniform/even; intermittently, there are phases with constant case numbers (plateau). 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.

## 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 28/04/2020, a total of 1,251 hospitals or departments reported to the DIVI registry. Overall, 32,394 intensive care beds were registered, of which 19,337 (60%) are occupied, and 13,057 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 (28/04/2020, 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
<b>Currently in ICU</b>	2,467		+58
- of these: mechanically ventilated	1,748	71%	+19
<b>Discharged from ICU</b>	8,619		+268
- of these: deaths	2,534	29%	+68

## 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

- 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-gesetzpaket-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)
- All federal states implemented regulations to wear (non-medical) face masks. With exception of the federal state of Berlin, this is applied to public transport and at retail in all states; in Berlin the regulation applies to public transport, and there is a recommendation for retail (but no mandatory regulation).