



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

29/04/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
<b>157,641</b> (+1,304*)	<b>6,115</b> (+202*)	<b>3.9%</b>	<b>ca. 120,400**</b>

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

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

## Summary (as of 29/04/2020, 12:00 AM)

- In total, **157,641** COVID-19 cases and **6,115** 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 (**320**), Baden-Wuerttemberg (**283**), Saarland (**254**) and Hamburg (**246**).
- Most cases (67%) are between 15 and 59 years old; women (48%) and men (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

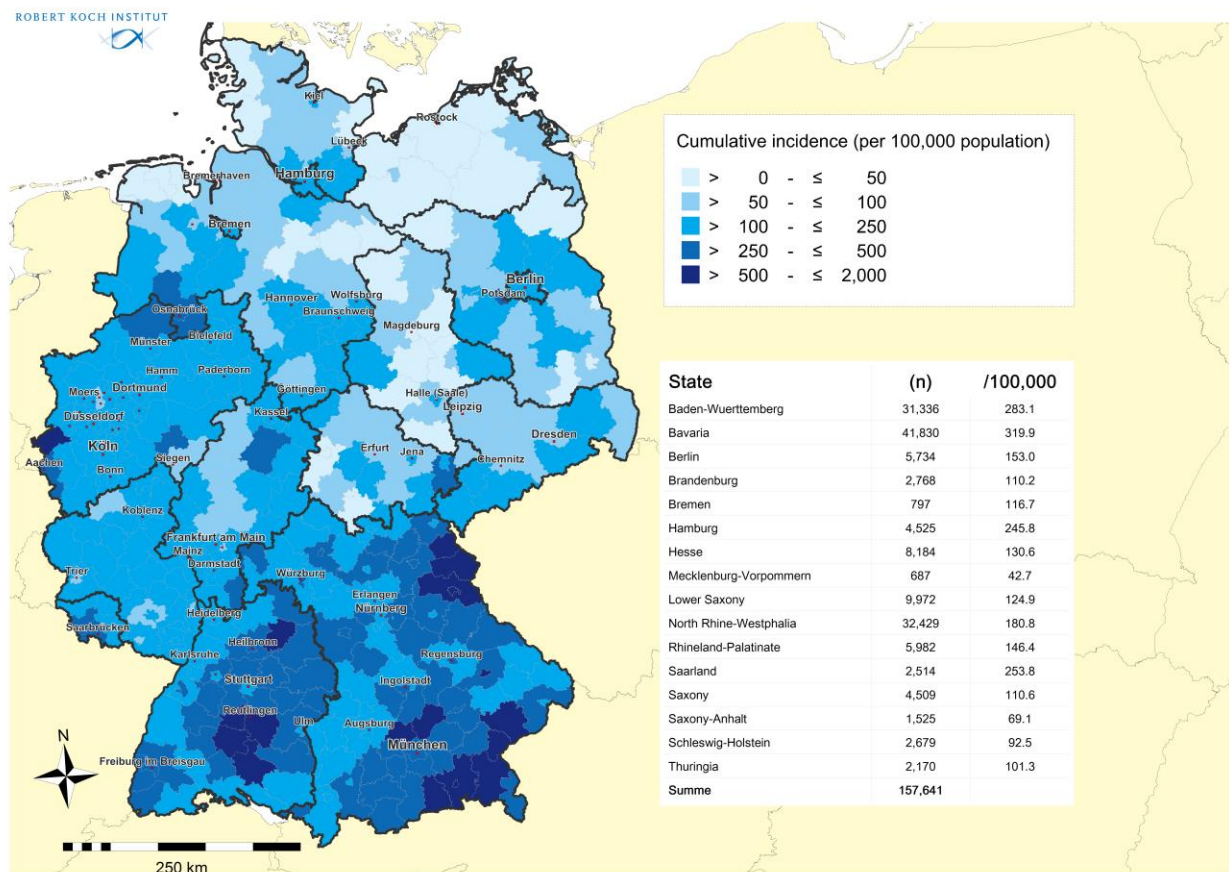
## Geographical distribution of cases

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 **157,641 (+1,304)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated at the RKI, including **6,115** 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 (29/04/2020, 12:00 AM).

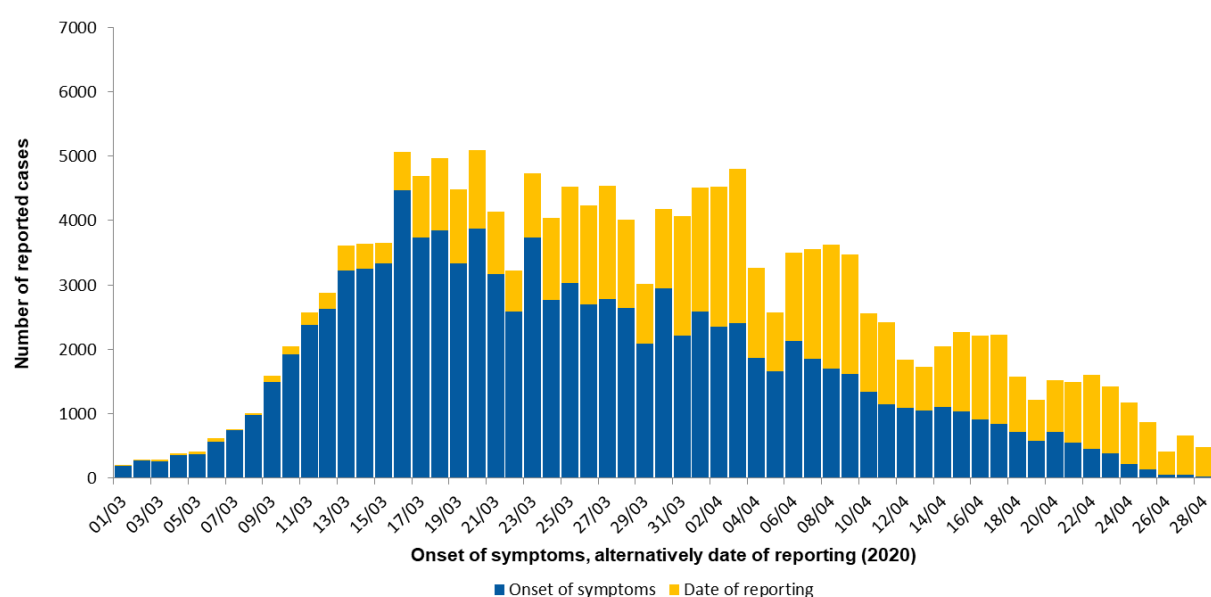
Federal State	Total Number of cases	Number of new cases	Cases/100,000 pop.	Number of deaths	Number of deaths/ 100,000 pop.
Baden-Wuerttemberg	31,336	140	283	1,299	11.7
Bavaria	41,830	424	320	1,754	13.4
Berlin	5,734	65	153	137	3.7
Brandenburg	2,768	21	110	109	4.3
Bremen	797	38	117	29	4.2
Hamburg	4,525	20	246	153	8.3
Hesse	8,184	158	131	346	5.5
Mecklenburg-Western Pomerania	687	12	43	17	1.1
Lower Saxony	9,972	46	125	406	5.1
North Rhine-Westphalia	32,429	245	181	1,200	6.7
Rhineland-Palatinate	5,982	54	146	161	3.9
Saarland	2,514	5	254	129	13.0
Saxony	4,509	19	111	153	3.8
Saxony-Anhalt	1,525	5	69	39	1.8
Schleswig-Holstein	2,679	26	92	103	3.6
Thuringia	2,170	26	101	80	3.7
<b>Total</b>	<b>157,641</b>	<b>1,304</b>	<b>190</b>	<b>6,115</b>	<b>7.4</b>



**Figure 1:** Number and cumulative incidence (per 100,000 population) of the 157,641 electronically reported COVID-19 cases in Germany by county and federal state (29/04/2020, 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

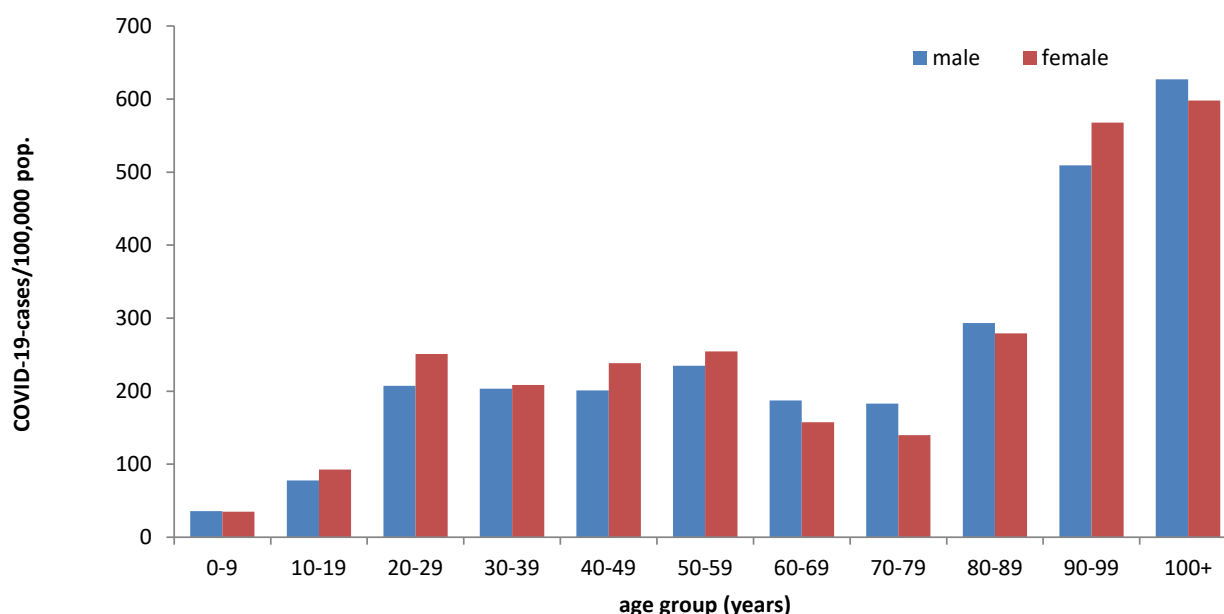
COVID-19 cases were first notified in Germany in January 2020. In 54,108 cases, onset of symptoms is unknown and therefore date of reporting is shown (see Figure 2).



**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 (29/04/2020, 12:00 AM).

## Demographic distribution of cases

Of reported cases, 48% are female and 52% are male. Among notified cases, 2,701 were children under 10 years of age (1.7%), 6,581 children and youth aged 10 to 19 years (4.2%), 67,543 persons aged 20 to 49 years (43%), 50,806 persons aged 50 to 69 years (32%), 25,395 persons aged 70 to 89 years (16%) and 4,420 persons aged 90 years and older (2.8%). The age of 194 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=157,028) for cases with information available (29/04/2020, 12:00 AM).

## Clinical aspects

Information on symptoms is available for 126,880 (80%) of the notified cases. Common symptoms are cough (50%), fever (42%) and rhinorrhoea (21%). Pneumonia was reported in 3,465 cases (2.7%). Hospitalisation was reported for 21,837 (17%) of 126,202 COVID-19 cases with information on hospitalisation available.

Approximately 120,400 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 6,115 COVID-19 related deaths reported in Germany concerned 3,443 (56%) men and 2,667 (44%) women (sex was unknown in 5 cases) (see Table 2). The median age was 82 years. Of all deaths, 5,297 (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+
Male	0	1	4	9	35	152	411	957	1,479	390	4
Female	1	0	2	5	10	47	138	446	1,296	689	33
Total	1	1	6	14	45	199	549	1,403	2,775	1,079	37

**Table 2:** Number of notified COVID-19 deaths by age group and sex (Data available for 6,109 of notified deaths; 29/04/2020, 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 (156,762 cases, 62,942 of whom are neither cared for, accommodated in or working in a facility; no data available for 59,774 cases; 29/04/2020, 12:00 AM)

Facility according to		Total	Hospitalised	Recovered (estimate)	Deaths
§ 23 IfSG (e.g. hospitals, outpatient clinics and practices, dialysis clinics or outpatient nursing services)	Cared for / accommodated in facility	2,094	1,335	1,000	339
	Occupation in facility	9,180	407	7,700	15
§ 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	1,566*	45	1,400	0
	Occupation in facility	1,865	94	1,700	6
§ 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	11,396	2,444	5,200	2,131
	Occupation in facility	6,948	281	5,400	27
§ 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	997	63	700	3

\*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, **9,180** 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 **407** cases among staff working in medical facilities with information available (**4.4%**). Due to missing data on occupation **38%** of cases, the true proportion of cases working in medical facilities may be higher.

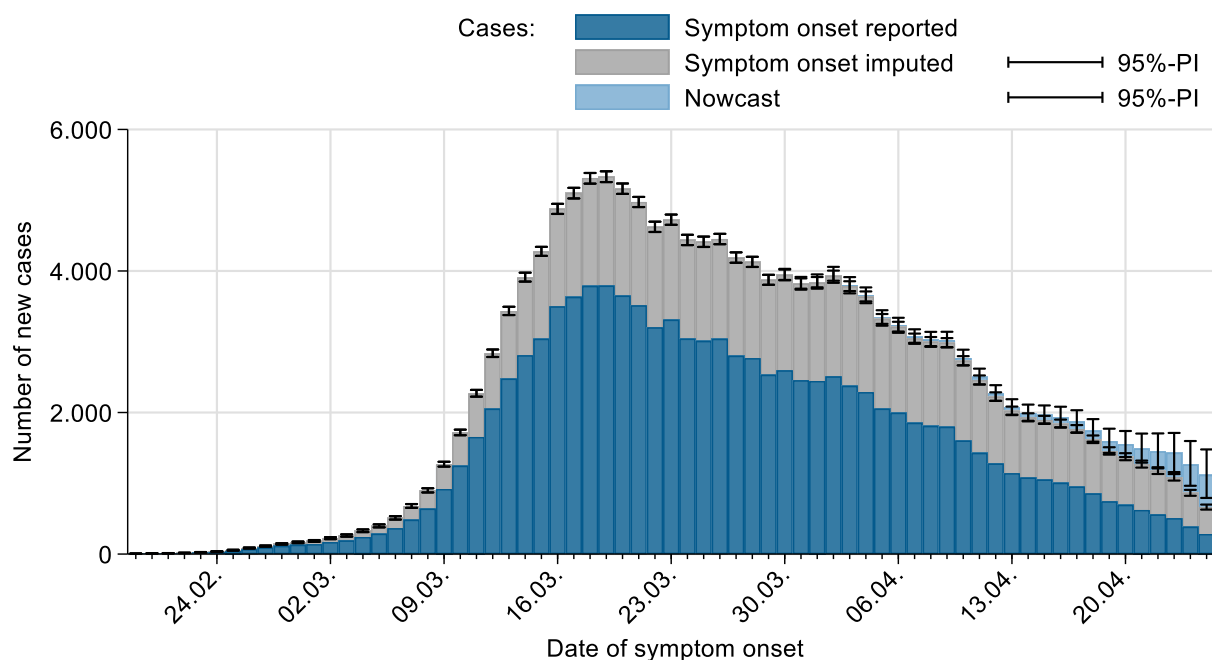
The high number of case among persons cared for or working in various care facilities is consistent with the numerous reported outbreaks, especially in nursing homes. The low number of cases attending or working in facilities concerned with child care or education reflects that children are not as affected. None of the children cared for there have been reported as deceased. Out of **1,865** persons working in these care facilities, **6** died.

The proportion of persons with COVID-19 reported as working in all of the above mentioned facilities, who 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 it takes varying lengths of time for a COVID-19 infection to be diagnosed, reported and transmitted to the Robert Koch Institute after the onset of illness. 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 29/04/2020 12 AM, taking into account cases up to 25/04/2020).

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 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 current estimate is  $R = 0.75$  (95% confidence interval: 0.64-0.87) and is based on current electronically notified cases (29/04/2020, 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. 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 29/04/2020, a total of 1,262 hospitals or departments reported to the DIVI registry. Overall, 32,824 intensive care beds were registered, of which 19,929 (61%) are occupied, and 12,895 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 (29/04/2020, 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>	2,415		-52
- of these: mechanically ventilated	1,719	71%	-29
<b>Discharged from ICU</b>	8,896		+277
- of these: deaths	2,603	29%	+69

## 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 2,547,052 tested samples have been reported until week 17/2020. Among these, 181,536 samples (7.1%) have tested positive for SARS-CoV-2.

Up to and including week 17, 208 laboratories have registered for either the RKI test-laboratory data registry or in one of the other transmitting networks and transmit mainly weekly. Since laboratories can register the tests of the previous calendar weeks with a delay in the RKI test-laboratory data registry, it is possible that the numbers determined will increase subsequently. It should be noted that the number of tests is not the same as the number of persons tested, as the data may include multiple tests of patients (see Table 5).

**Table 5:** Laboratory tests performed for SARS-CoV-2 in Germany, calendar weeks 11 - 17 (28/04/2020)

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	361,515	31,414 (8.7%)	151
14	408,348	36,885 (9.0%)	154
15	379,233	30,728 (8.1%)	163
16	330,027	21,993 (6.7%)	167
17	467,137	25,222 (5.4%)	174
<b>Sum</b>	<b>2,547,052</b>	<b>181,536 (7.1%)</b>	

In addition to the number of tests carried out, information on daily test capacity is requested. In week 18, 133 laboratories reported a total capacity of 141,815 tests per day. All reporting laboratories provided information on their working days per week, which ranged from 5-7 working days, resulting in a test capacity of 860,494 feasible PCR tests for the detection of SARS-CoV-2 in week 18.



In week 17, 29 laboratories reported a backlog of 2,393 samples to be processed. Forty-five laboratories reported delivery problems for reagents, mainly extraction kits and swabs.

## 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

- 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-gesetzenspaket-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)