



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

07/05/2020 - UPDATED STATUS FOR GERMANY

Confirmed cases	Deaths	Deaths (%)	Recovered
166,091 (+1,284*)	7,119 (+123*)	4.3%	ca. 139,900**

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

*Change from previous day; **Estimate

Summary (as of 07/05/2020, 12:00 AM)

- In total, **166,091** COVID-19 cases and **7,119** deaths due to COVID-19 have been electronically reported to the Robert Koch Institute in Germany.
- The cumulative incidence (cases per 100,000) of COVID-19 is currently highest in Bavaria (**334**), Baden-Wuerttemberg (**296**), Saarland (**268**) and Hamburg (**255**).
- Most cases (**67%**) are between 15 and 59 years old. Women (52%) and men (48%) are almost equally affected.
- People aged 70 years or older account for 87% of deaths but only 19% of all cases.
- COVID-19 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 the Robert Koch Institute (RKI) in line with the Protection Against Infection Law (Data closure: 12:00 AM daily). Since January 2020, a total of **166,091 (+1,284)** laboratory-confirmed cases of coronavirus disease 2019 (COVID-19) have been electronically reported to and validated by the RKI, including **7,119** deaths (see Table 1 and Figure 1). Information on confirmed cases is 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 for each federal state, Germany (07/05/2020, 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	32,762	186	296	1,497	13.5
Bavaria	43,658	287	334	2,050	15.7
Berlin	6,149	57	164	162	4.3
Brandenburg	2,999	30	119	129	5.1
Bremen	963	47	141	32	4.7
Hamburg	4,704	40	255	194	10.5
Hesse	8,736	94	139	396	6.3
Mecklenburg-Western Pomerania	715	4	44	19	1.2
Lower Saxony	10,564	111	132	478	6.0
North Rhine-Westphalia	34,249	272	191	1,372	7.7
Rhineland-Palatinate	6,213	22	152	189	4.6
Saarland	2,655	28	268	143	14.4
Saxony	4,836	52	119	181	4.4
Saxony-Anhalt	1,602	12	73	48	2.2
Schleswig-Holstein	2,834	19	98	120	4.1
Thuringia	2,452	23	114	109	5.1
Total	166,091	1,284	200	7,119	8.6

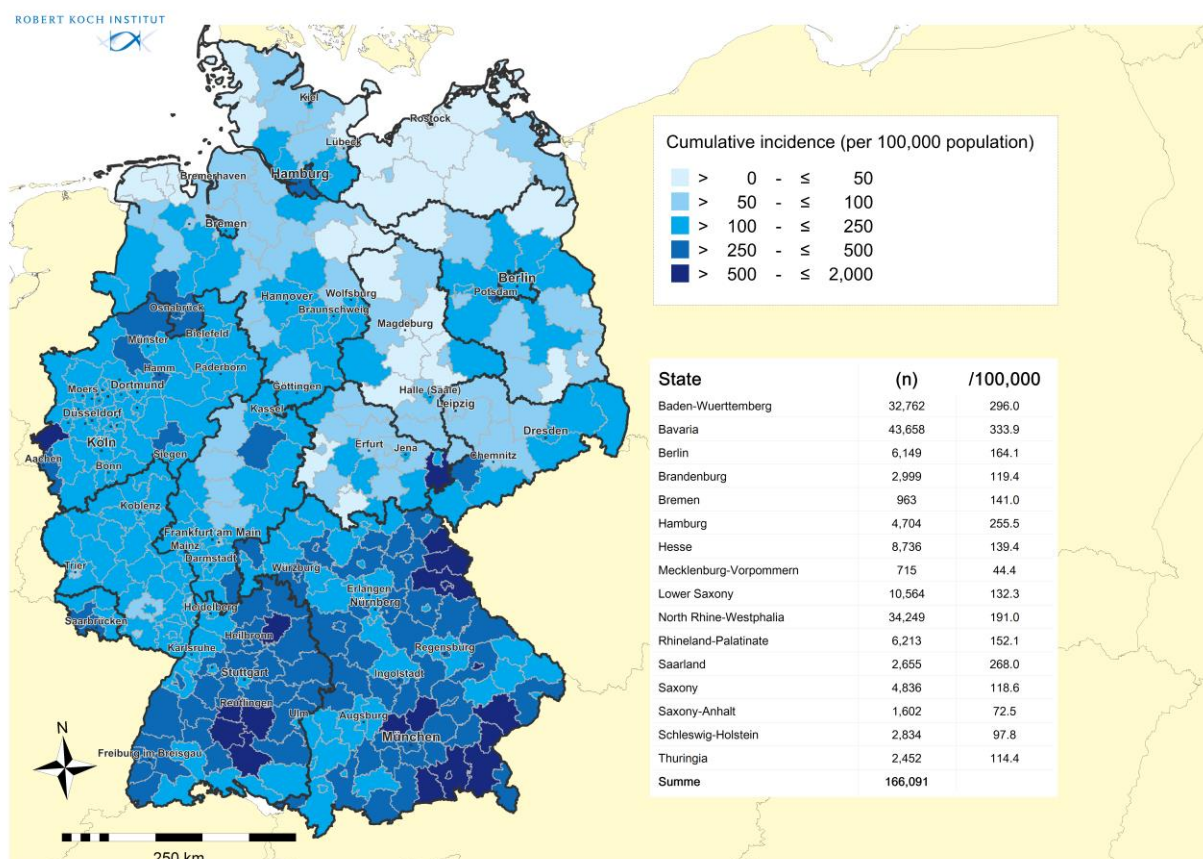


Figure 1: Number and cumulative incidence (per 100,000 population) of the 166,091 electronically reported COVID-19 cases in Germany by county and federal state (07/05/2020, 12:00 AM). Please see the COVID-19 dashboard (<https://corona.rki.de/>) for information on number of COVID-19 cases by county (local health authority).

Distribution of cases over time

The first COVID-19 cases in Germany were notified in January 2020. The onset of symptoms is unknown in 54,861 cases, and the date of reporting is therefore provided (see Figure 2).

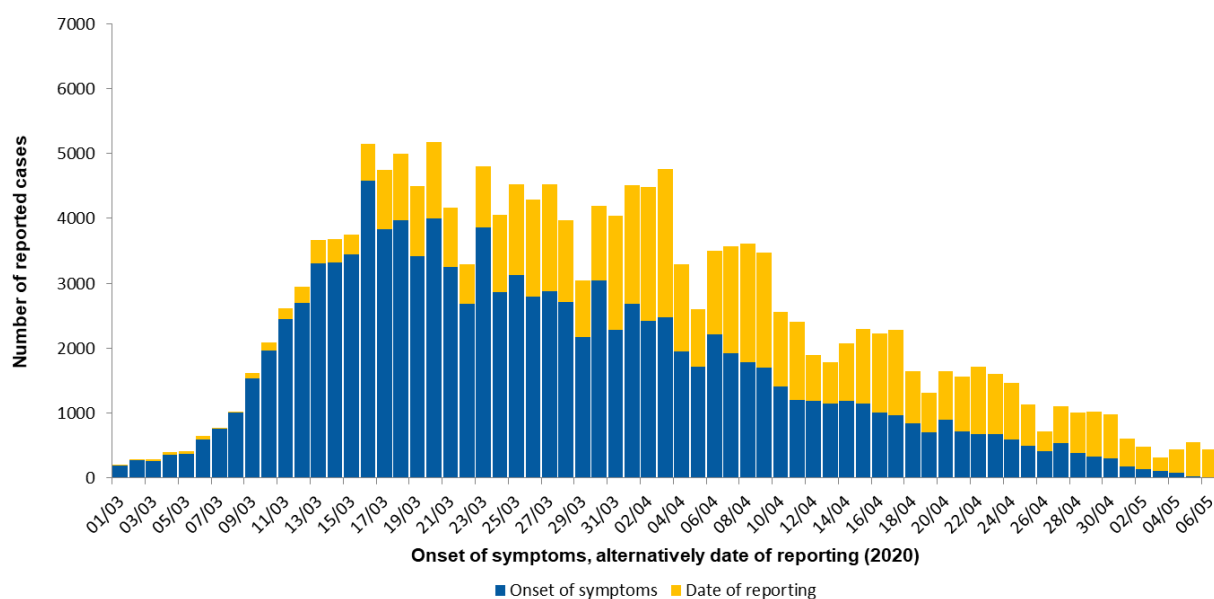


Figure 2: Number of electronically reported COVID-19 cases in Germany by date of symptom onset and by date of reporting from 01/03/2020 (07/05/2020, 12:00 AM).

Demographic distribution of cases

Of all reported cases, 52% are female and 48% are male. Among notified cases, 2,981 were children under 10 years of age (1.8%), 7,036 children and teenagers aged 10 to 19 years (4.2%), 71,250 people aged 20 to 49 years (43%), 52,972 people aged 50 to 69 years (32%), 26,967 people aged 70 to 89 years (16%) and 4,719 people aged 90 years and older (2.8%). The age is unknown in 165 notified cases. The mean and median age of cases are both 50 years. The highest incidences are seen in people 90 years and older (see Figure 3).

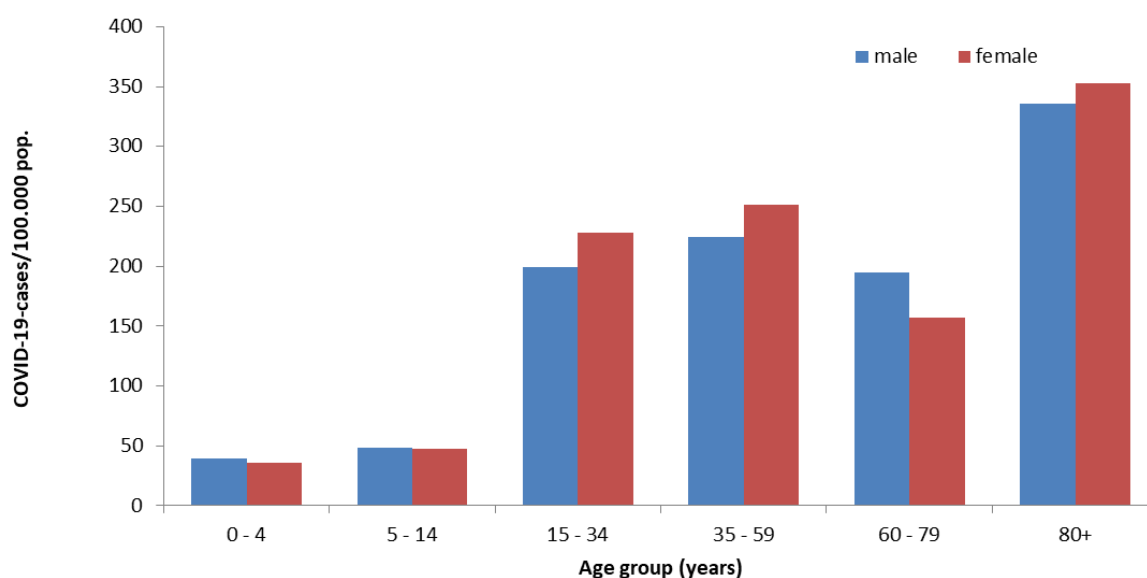


Figure 3: Electronically reported COVID-19 cases/100,000 population in Germany by age group and gender (n=165,532) for cases with information available (07/05/2020, 12:00 AM).

Clinical aspects

Information on symptoms is available for 136,182 (82%) of the notified cases. Common symptoms are cough (50%), fever (41%) and rhinorrhoea (21%). Pneumonia was reported in 3,854 cases (2.8%). Hospitalisation was reported for 23,919 (18%) of 135,738 COVID-19 cases with information on hospitalisation status. Since calendar week 17, cases are reported to the RKI as a distinct COVID-19 surveillance category, similar to other reported infectious diseases. Since then, loss of smell and taste can also be entered as symptoms. At least one of these two symptoms were reported in 737 of 4,903 cases (15%) recorded in the COVID-19 category.

Approximately 139,900 people have recovered from their COVID-19 infection. Since the exact date of recovery is unknown in most cases, an algorithm was developed to estimate the number of recovered cases.

Of the 7,119 COVID-19-related deaths reported in Germany 3,967 (56%) are men and 3,147 (44%) are women (gender was unknown in five cases, age was unknown in four cases) (see Table 2). The median age was 82 years. Of all deaths, 6,158 (87%) were in people age 70 years or older, but only 19% of all cases were in this age group. COVID-19 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 gender (Data available for 7,119 of notified deaths; 07/05/2020, 12:00 AM)

Gender	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	5	11	37	180	477	1,085	1,708	458	4
Female	1		2	6	12	58	165	517	1,526	816	41
Total	1	1	7	17	49	239	643	1,604	3,235	1,274	45

Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Law (IfSG), the RKI receives information on occupation, accommodation or care in a facility relevant for infection control for reported COVID-19 cases (see Table 5).

Since information on care, accommodation and occupation in these facilities is missing in 34% of cases, the proportion of cases who receive care, are accommodated in or work in facilities should be considered as minimum values. Among the COVID-19 cases reported as receiving care, are accommodated in or work in all of the above mentioned facilities, the proportion of cases that actually acquired their infection in these settings is unknown.

Table 3: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases (165,182 cases, no data available for 56,522 cases; 07/05/2020, 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	2,372	1,554	428	1,300
	Occupation in facility	10,609	465	17	9,600
§ 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	1,720*	48	1	1,600
	Occupation in facility	2,097	104	7	2,000
§ 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	13,035	2,947	2,582	7,600
	Occupation in facility	7,663	315	33	6,600
§ 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	1,468	106	57	1,000
Neither cared for, accommodated in nor working in a facility		69,696	12,548	2,708	62,400

*for care according to § 33 IfSG only cases under 18 years of age are taken into account, as other information may be assumed to be incorrect.
IfSG: Protection Against Infection Law

Until now, 10,609 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 reported as working in medical facilities, 72% were female and 28% male. The median age was 42 years.

The high number of cases among people 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 who attend or work in facilities where child care or education is provided (Section 33 IfSG) reflects the low incidence in children observed until now.

Estimation of the reproduction number (R)

The presented case numbers do not fully reflect the temporal progression of incident COVID-19 cases, since the time intervals between actual onset of illness and diagnosis, reporting, as well as transmission to the RKI vary greatly. Therefore, a nowcasting approach is applied to model the true temporal progression of COVID-19 cases according to illness onset. Figure 4 shows the result of this analysis.

The reproduction number, R , is defined as the mean number of people infected by a case. R can only be estimated based on statistical analyses such as nowcasting and not directly extracted from the notification system. The nowcasting analysis and the R -estimate are based on all COVID-19 cases reported to the RKI with an illness onset up to 3 days before data closure. Cases with a more recent illness onset are excluded from this analysis since their as yet low number would lead to unstable estimates.

The number of incident cases estimated using the nowcasting approach is presented as a moving 4-day average to compensate for random effects of individual days (Fig. 5). With this approach, the point estimate of R for a given day is estimated as the quotient of the number of incident cases on this day divided by the number of incident cases four days earlier. The current estimate is $R = 0.71$ (95% prediction interval: 0.60-0.85) and is based on electronically notified cases as of 07/05/2020, 12:00 AM.

A detailed description of the methodology is available at

https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2020/17/Art_02.html (Epid. Bull. 17 | 2020 from 23/04/2020)

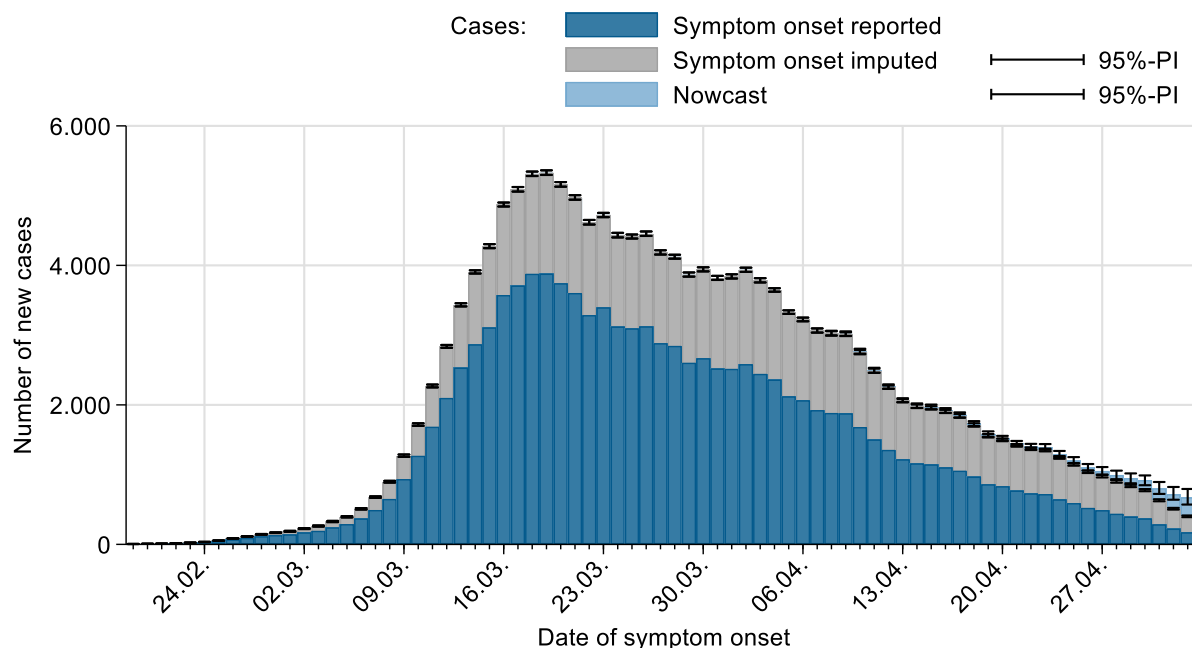


Figure 4: Display of cases with known onset of the disease (dark blue), estimated onset of the disease for cases where the onset of the disease has not been reported (grey) and estimated course of already symptomatic cases (light blue) (as of 07/05/2020 12 AM, taking into account cases up to 02/05/2020).

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 intensive care capacity 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, all hospitals with intensive care beds are required to report.

As of 07/05/2020, a total of 1,221 hospitals or departments reported to the DIVI registry. Overall, 32,077 intensive care beds were registered, of which 19,822 (62%) are occupied, and 12,255 beds (38%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 4.

Table 4: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (07/05/2020, 9:15 AM).

	Number of patients	Percentage	Change to previous day
Currently in ICU	1,823		-61
- of these: mechanically ventilated	1,230	67%	-81
Discharged from ICU	10,550		+238
- of these: deaths	2,951	28%	+28

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) using information from the population. In Week 18, 2020, the rate of ARI ("ARI rate" as well as the rate of influenza-like illnesses ("ILI-rate")) increased slightly compared to the previous week. ARE and ILI rates were still lower than in previous seasons at this time of the year. Additional microbiological surveillance (Grippe-Web-Plus-2020) started at the end of March 2020. A random subsample of regular GrippeWeb participants received material for self-swabbing from the RKI, which will be used to test for 21 different respiratory pathogens, including influenza viruses and SARS-CoV-2. So far, 217 initial samples have been sent to the RKI. None of the samples have tested positive for influenza virus or SARS-CoV-2. 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 18, 2020, the number of patient visits due to respiratory infections declined amongst 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 1,271 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 hospitalised patients (ICD-10 codes J09 to J22: primary diagnoses influenza, pneumonia or other acute infections of the lower respiratory tract). In Week 17, 2020, 22% of all reported cases were diagnosed with COVID-19. Due to low case numbers, proportions of COVID-19 cases in different age groups were not calculated. Please note that only patients with an ICD-10 Code for SARI in the main DRG diagnosis and hospitalisation duration of up to one week were included in this analysis.

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 newly reported 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, physical 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

- (Non-medical) face masks must now be worn on public transport and in shops 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.
- In public spaces, a distance of 1.5 metres to other individuals must be maintained <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)