ROBERT KOCH INSTITUT

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

24/09/2020 - UPDATED STATUS FOR GERMANY

Total (cumulative)	
Confirmed cases	**Deaths**
278,070 (+ 2,143*)	**9,428** (+ 19*)
Proportion of deaths	**Recovered**
3.4 %	**ca. 246,900**** (+ 1,500**)

Previous 7 days	
Confirmed cases	**7-day incidence**
10,982 (-21*)	**13.2 cases/ 100,000 population**
No. of districts reporting cases	**No. of districts with 7-day incidence > 50**
403/412 (+1*)	**2** (+0*)

**Change from previous day; **Estimate*

COVID-19 cases are notified to the local public health department in the respective districts, in accordance with the German Protection against Infection Act (IfSG). The data are further transmitted through the respective federal state health authority to the Robert Koch Institute (RKI). This situation report presents the uniformly recorded nationwide data on laboratory-confirmed COVID-19 cases transmitted to RKI. ***Since 14/09/2020 the RKI situation report will be published in a shortened version. The report will be more focused on the current situation. Demographic and clinical aspects, for which there are only few daily changes, will be presented once a week and in a weekly comparison. Further data is also available in the COVID 19 dashboard:*** *https://corona.rki.de*

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

Summary (as of 24/09/2020, 12:00 AM)

- After a temporary stabilisation of case numbers at a higher level, a further increase in reported COVID-19 cases is currently evident in the population of Germany. Therefore, the situation must still be carefully monitored.
- The cumulative nationwide incidence over the past 7 days was 13.2 cases per 100,000 inhabitants. The 7-day incidence exceeded 50 cases/100,000 inhabitants in 2 districts: the city of Hamm and the district of Dingolfing-Landau. A total of 9 districts transmitted zero cases over the past 7 days.
- The 7-day incidence in Bavaria, Berlin and Hamburg is considerably higher, in North Rhine-Westphalia noticeably higher, and in Baden-Wuerttemberg slightly higher than the national mean 7-day incidence.
- In total, 278,070 laboratory-confirmed COVID-19 cases and 9,428 deaths associated with COVID-19 have been electronically reported to the RKI in Germany.
- A large number of COVID-19-related outbreaks continue to be reported in various settings. Case clusters occur particularly in nursing homes and hospitals, facilities for asylum-seekers and refugees, community facilities, various occupational settings, in the context of religious or family events and among travellers.

Epidemiological Situation in Germany

In accordance with the international standards of WHO[1] and ECDC[2], RKI considers all laboratory confirmations of SARS-CoV-2, irrespective of the presence and severity of clinical symptoms, as COVID-19 cases. Thus, in the following report the term "COVID-19 cases" covers acute SARS-CoV-2 infections as well as cases of COVID-19 disease.

General current assessment

After a temporary stabilisation of case numbers at a higher level, further increase is currently observed in the population of Germany. The proportion of COVID-19 cases in the older age groups is currently slightly increasing, while the proportion of cases among travel returnees is decreasing since calendar week 34. The R-value is currently below 1.

There are outbreaks in various districts throughout Germany, which are associated with different situations, including large celebrations in the family and circle of friends or, especially in cases among younger people, outbreaks originating from travel returnees.

The current development must be further carefully monitored. The number of deaths among reported COVID-19 cases is currently low. This is mainly due to the relatively high proportion of younger people among newly diagnosed cases in the last weeks, of which relatively few fall seriously ill and die. If the trend continues and more elderly and vulnerable people get infected, an increase in hospitalisations and deaths is to be expected.

It is therefore still necessary for the entire population to be committed to infection control, e.g. by consistently observing rules of distance and hygiene - also outdoors -, by ventilating indoor spaces and, where necessary, by wearing a community mask correctly. Crowds of people - especially indoors - should be avoided if possible and celebrations should be limited to the closest circle of family and friends.

[1] *World Health Organization, https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2020.1*

[2] *European Centre for Disease Prevention and Control, https://www.ecdc.europa.eu/en/covid-19/surveillance/case-definition*

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

Geographical distribution of cases

Epidemiological analyses are based on validated cases notified electronically to the RKI in line with the Protection Against Infection Law (Data closure: 12:00 AM daily). Since January 2020, a total of 275,927 (+1,769) laboratory-confirmed cases of COVID-19 have been electronically reported to and validated by the RKI (Table 1). A total of 10 districts reported no cases in the past 7 days; however on 16/06/2020 a total of 139 districts reported zero cases.

Table 1: Number and cumulative incidence (per 100,000 population) of laboratory-confirmed COVID-19 cases and deaths for each federal state electronically reported to RKI, Germany (24/09/2020, 12:00 AM). The number of new cases includes positive cases notified to the local health department at the same day, but also at previous days.

Federal State	Total number of cases	Number of new cases	Cases/ 100,000 pop.	Cases in the last 7 days	7-day incidence per 100,000 pop.	Number of deaths	Number of deaths/ 100,000 pop.
Baden-Wuerttemberg	47,883	293	433	1,500	13,6	1,875	16.9
Bavaria	66,192	446	506	2,437	18,6	2,654	20.3
Berlin	13,573	199	362	881	23,5	228	6.1
Brandenburg	4,150	34	165	85	3,4	169	6.7
Bremen	2,262	12	331	90	13,2	59	8.6
Hamburg	7,369	78	400	337	18,3	269	14.6
Hesse	18,035	165	288	752	12,0	546	8.7
Mecklenburg-Western Pomerania	1,136	5	71	57	3,5	20	1.2
Lower Saxony	19,315	178	242	804	10,1	678	8.5
North Rhine-Westphalia	66,680	489	372	2,905	16,2	1,859	10.4
Rhineland-Palatinate	10,282	52	252	325	8,0	248	6.1
Saarland*	3,262	10	329	55	5,6	176	17.8
Saxony	6,887	71	169	309	7,6	229	5.6
Saxony-Anhalt	2,497	27	113	104	4,7	67	3.0
Schleswig-Holstein	4,540	42	157	210	7,2	161	5.6
Thuringia	4,007	42	187	131	6,1	190	8.9
Total	**278,070**	**2,143**	**335**	**10,982**	**13,2**	**9,428**	**11.3**

Quality checks and data cleaning by the health authorities and regional offices can lead to corrections to cases previously transmitted (e.g. detection of duplicate reports). This can occasionally lead to negative values for the number of new cases.

Distribution of cases over time

The first COVID-19 cases in Germany were notified in January 2020. Figure 1 shows COVID-19 cases transmitted to RKI according to date of illness onset from 01/03/2020 onwards. Of these cases, the onset of symptoms is unknown for 102,179 cases (37%), thus their date of reporting is provided.

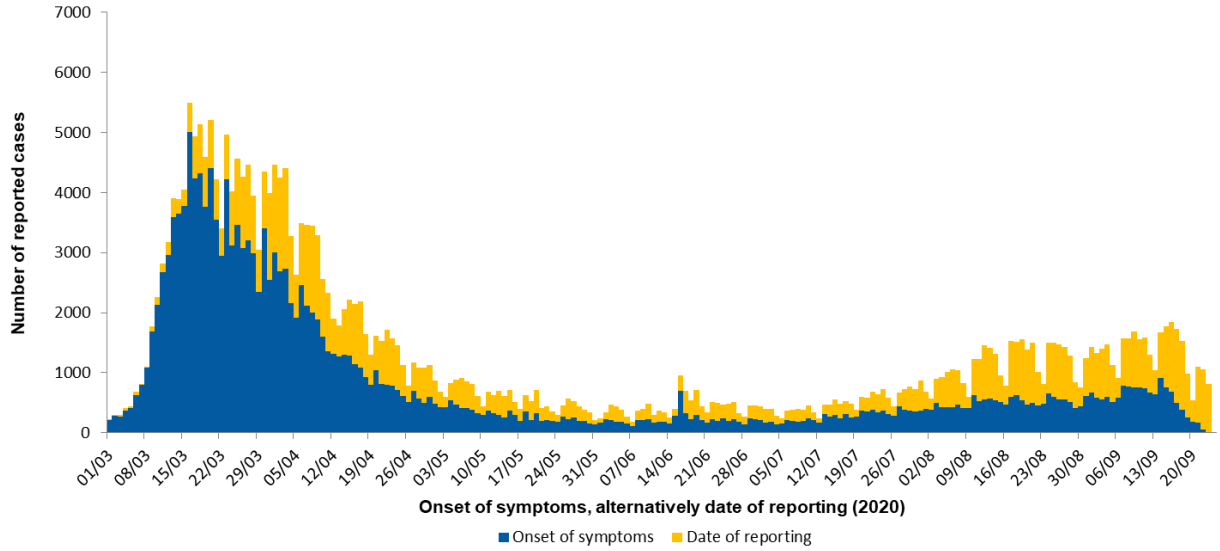

Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (24/09/2020, 12:00 AM).

Occupation, accommodation or care in facilities

In accordance with the Protection Against Infection Act (Infektionsschutzgesetz, IfSG), the RKI receives information on occupation, accommodation or care in a facility relevant for infection control for reported COVID-19 cases. Since information on occupation, accommodation or care in these facilities is missing in 26% of cases; the numbers of cases working, accommodated or cared for in these facilities reported here should be considered minimum values. Among the COVID-19 cases reported from the above mentioned facilities, the proportion of cases that actually acquired their infection in these facilities is unknown.

Table 2: Notified COVID-19-cases according to possible occupation, accommodation or care in facilities relevant for transmission of infectious diseases according to the Protection Against Infection Act (IfSG), reported to RKI (276,158* cases, no data available for 70,728 cases; 24/09/2020, 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	4,163	2,912	690	3,300
	Occupation in facility	15,963	696	23	15,500
§ 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*	8,478	132	1	7,400
	Occupation in facility	4,255	188	8	3,800
§ 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	19,943	4,389	3,692	15,800
	Occupation in facility	11,047	474	40	10,800
§ 42 IfSG (e.g. meat processing plants or kitchens in the catering trade, in inns, restaurants, canteens, cafés, or other establishments with or for communal catering)	Occupation in facility	6,088	255	5	5,900
Neither cared for, accommodated in nor working in a facility		134,967	18,665	3,656	123,100

*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.

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

The number of COVID-19 cases was highest among persons cared for or employed in care facilities according to §36 IfSG and among persons employed in medical facilities according to §23 IfSG (Table 2). The number of deaths was particularly high among persons cared for in these facilities.

Among the cases reported as working in medical facilities (§23 IfSG), 73% were female and 27% male. Their median age was 40 years. The high number of cases among people cared for or working in various care facilities (§36 IfSG) is consistent with numerous reported outbreaks, especially in nursing homes. The high number of cases among persons working in the food sector (§42 IfSG) is largely due to outbreaks in meat processing plants.

Outbreaks

In 30 districts an increased incidence of >25 cases in 7 days/100,000 population was reported, including the city of Hamm and the district of Dingolfin-Landau, with 7-day incidences of > 50 cases/100,000 population.

The increased incidence in the city of Hamm is largely due to over 99 cases in connection with a wedding. More than 300 identified guests are quarantined and required to be tested. Stricter distancing measures have been implemented in Hamm (https://www.hamm.de/aktuelles/weitere-corona-massnahmen-beschlossen).

The increased incidence in Dingolfing-Landau is mainly explained by a COVID-19 outbreak at an industrial concern and associated logistic partners. Mass testing was implemented; >30 cases have been diagnosed thus far.

The 7-day incidence in the city of Remscheid decreased to just under 50 cases/100,000 inhabitants today. Here, cases were mainly found among contact persons of confirmed cases and can be attributed mostly to families that have returned from holidays: Several schools and nurseries are affected. Increased measures (e. g. broad quarantine) have been implemented (https://remscheid.de/corona#chapter146380100000143530-1015_sp_main_iterate_1_0).

The increased incidence in the affected districts is mainly due to transmission during family and other private events. The proportion of travel returnees among the cases is decreasing.

The number of COVID-19-related outbreaks reported in nursing homes; hospitals, facilities for asylum seekers and refugees, community facilities, various occupational settings and in connection with religious events has increased.

Estimation of the reproduction number (R)

The reproduction number, R, is defined as the mean number of people infected by one infected person. R can only be estimated based on statistical analyses such as nowcasting (Figure 2) and not directly extracted from the notification system.

4-day R-value	7-day R-value
0.78	0.97
(95%-prediction interval: 0.62 – 0.96)	(95%-prediction interval: 0.88 – 1.07)

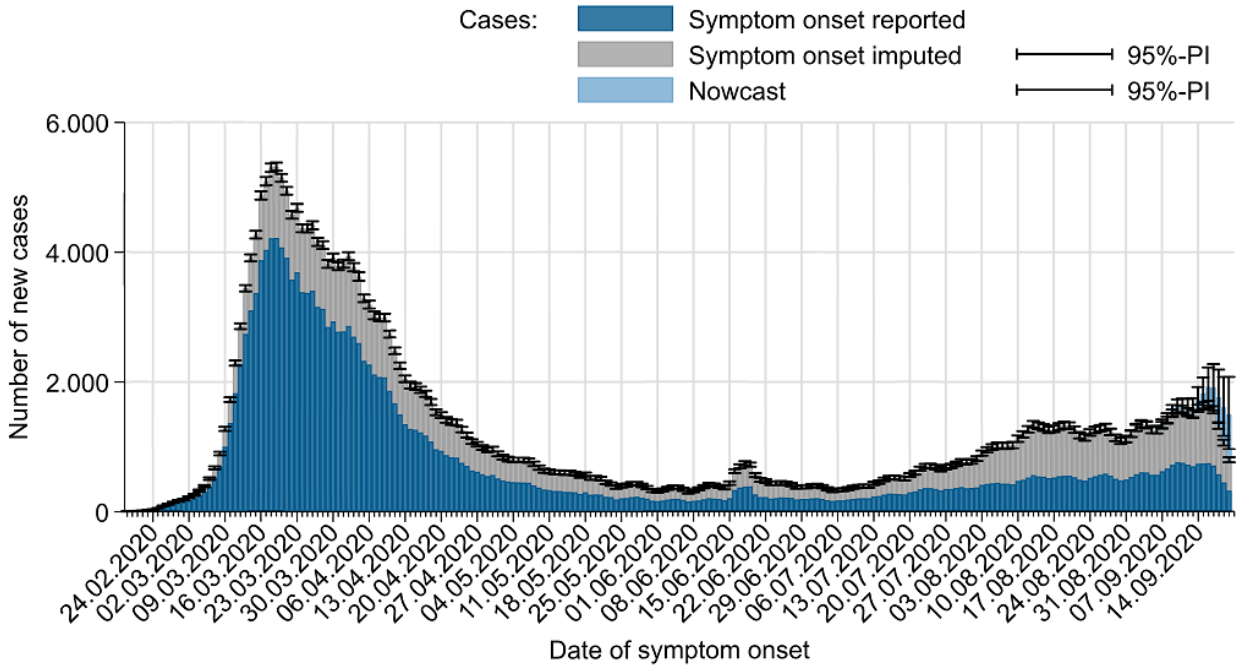

Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (light blue) (as of 24/09/2020, 12 AM, taking into account cases up to 20/09/2020).

The reported R values were above 1 since mid-July 2020, but decreased to under 1 since the 22/09/2020. Nonetheless, the trend must be monitored carefully.

Sample calculations as well as an excel sheet presenting both R-values with daily updates can be found under www.rki.de/covid-19-nowcasting. 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).

DIVI intensive care register

The German Interdisciplinary Association for Intensive and Emergency Medicine (DIVI) has in collaboration with RKI established a registry to document the number of available intensive care beds as well as the number of COVID-19 cases treated in participating hospitals on a daily basis. Since 16/04/2020, all hospitals with intensive care beds are required to report. (https://www.intensivregister.de/#/intensivregister)

As of 24/09/2020, a total of 1,285 hospitals or departments reported to the DIVI registry. Overall, 30,592 intensive care beds were registered, of which 21,931 (72%) are occupied, and 8,661 (28%) are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 3.

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

Table 3: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (24/09/2020, 12:15 PM).

	Number of patients	Percentage	Change to previous day*
Currently in ICU	296		3
- of these: mechanically ventilated	166	56%	7
Discharged from ICU	17,309		37
- of these: deaths	4,139	24%	7

*The interpretation of these numbers must take into account the number of reporting hospitals and therefore the number of reported patients may change from day to day. On certain days, this can explain an occasionally important decrease or increase in the cumulative number of discharged patients or deaths compared with the day before.

Information from additional 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), utilizing information from the population. In week 38, 2020, the rate of ARI ("ARI rate") increased. 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 38, 2020, the overall number of patient visits due to acute respiratory infections decreased slightly. The ARI incidence decreased in the age groups below 15 years, but remained stable in the other age groups. Overall, it remained at a similar level to that of previous seasons at this time of the year. Within the viral surveillance of the AGI, rhinovirus was detected in 23 of 40 sentinel samples (58%) in week 38, 2020, including one double-infection with A(H3N2)-virus. Since week 16, 2020, no SARS-COV-2 has been detected within the viral sentinel surveillance of the AGI. 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 respiratory tract). In week 37, 2020, the total number of SARI cases remained stable compared to week 36. Of all reported SARI cases in week 36, 2020, 3% were diagnosed with COVID-19 (ICD-10 code U07.1!) (See Figure 3). Please note that due to data availability only patients with an ICD-10 Code for SARI as the main diagnosis and hospitalisation duration of up to one week were included in this analysis.

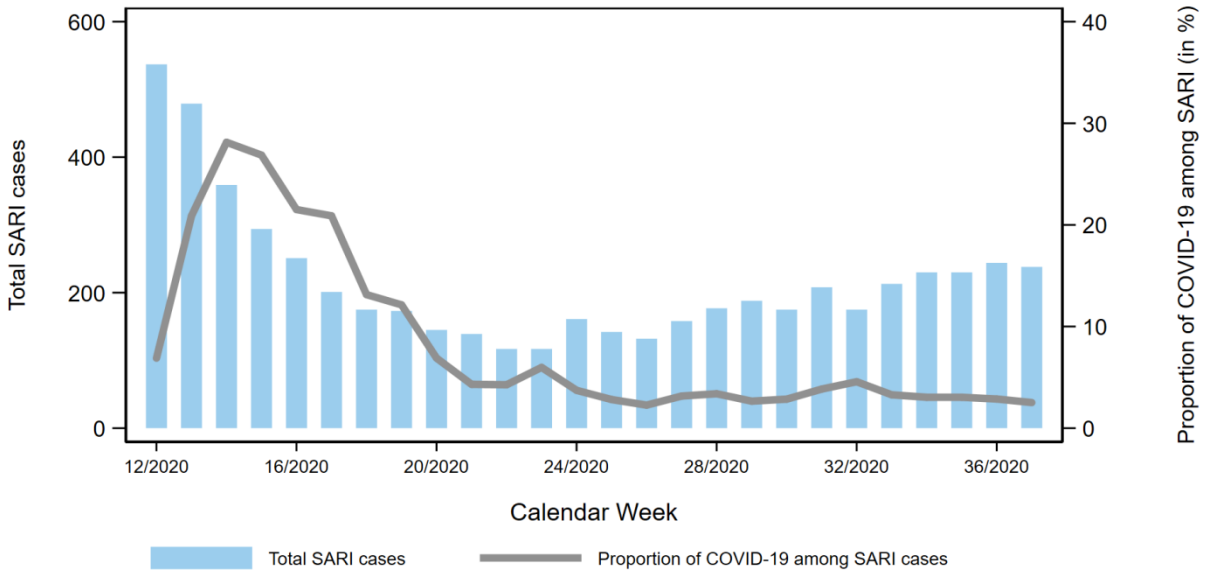

Figure 3: Weekly number of SARI cases (ICD-10 codes J09-J22) and proportion of cases with a diagnosis of COVID-19 (ICD-10 code U07.1!) among SARI cases with duration of hospitalisation of up to one week and with date of admission in weeks 12 to 37, 2020, from 70 sentinel hospitals

Data on emergency department utilisation

In collaboration with the National Emergency Department Register AKTIN (https://www.aktin.org/en/), the RKI analysed emergency department utilisation and prepared a weekly situation report: https://www.rki.de/EN/Content/Institute/DepartmentsUnits/InfDiseaseEpidem/Div32/sumo/sumo.html.

As of 20 September 2020, data from 9 emergency departments have been taken into account. Between 1 November 2019 and 1 March 2020, an average of 6,356 emergency department admissions per week was recorded. From the middle to the end of March 2020, a 40% decrease in the number of admissions was observed, to 3,697 admissions in week 13, 2020. Similar declines were evident in comparable surveillance systems in the USA, England and Wales. In parallel to the decrease in daily admissions, public measures were taken to contain the COVID-19 pandemic in Germany. Subsequently, an increase in admissions has been observed. In week 38 2020, 6,033 admissions were recorded. Therefore, the number of admissions is currently 5% below the average of November 2019 to February 2020 (see Figure 5).

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

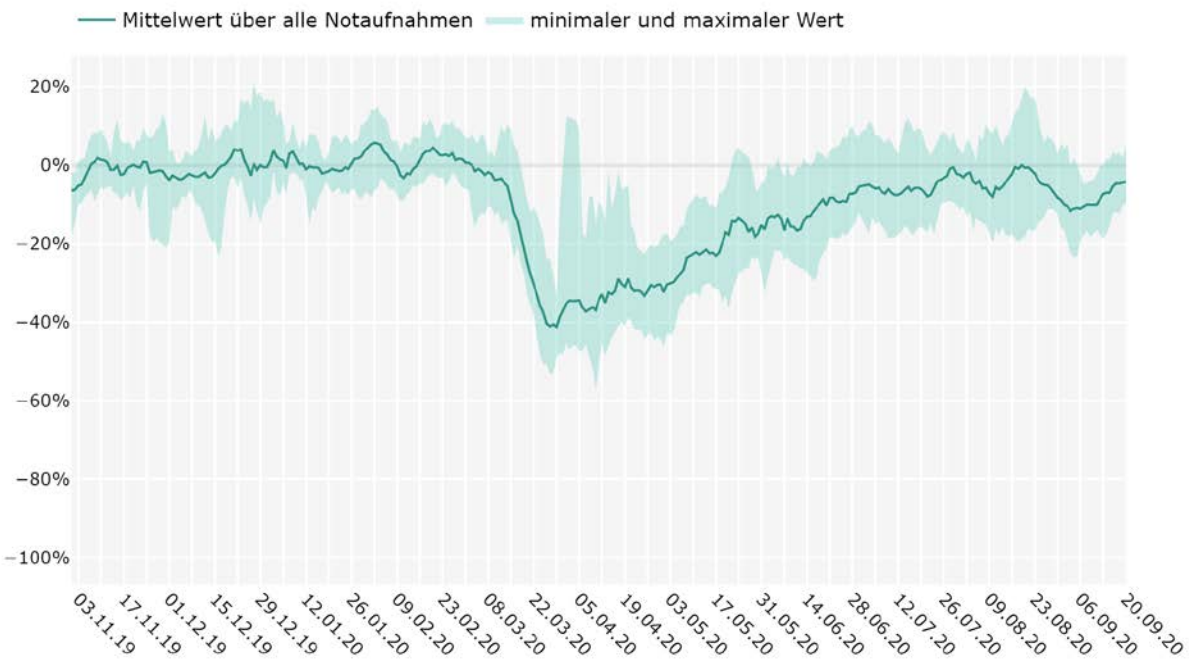

Figure 5: Number of emergency department attendances in Germany, from November 2019 to September 2020; 7-day moving average of 9 emergency departments; relative deviation to the reference period 1 November 2019 – 1 March 2020 (as of 20 September 2020)

Risk Assessment by the RKI

General assessment

At the global and the national level, the situation is dynamic and must be taken seriously. This is a dynamic and serious situation worldwide and in Germany. The number of cases continues to increase worldwide. The number of newly reported cases in Germany declined from about mid-March to the beginning of July, since then the number of cases has increased markedly. Many of these cases were associated with travellers. Since calendar week 35 transmissions within Germany can be observed to a larger extent. Large and small outbreaks continue to occur throughout Germany, particularly in connection with celebrations with family and friends and at group events. There are still no approved vaccines and the treatment of severe disease courses is complex and lengthy.

The Robert Koch Institute still estimates the risk to the health of the German population to be high, and very high for risk groups. This assessment may change in the short term due to new findings.

Infection risk

SARS-CoV-2 can be transmitted easily from person to person. The risk of infection depends heavily on the regional spread, living conditions and also on individual behaviour (physical distancing, hygiene measures and community masks). Here, contacts in risk situations (such as long face-to-face contact) play a special role. Aerosol emission increases sharply when speaking loudly, singing or laughing. In indoor rooms, this significantly increases the risk of transmission, even if a distance of more than 1.5 m is maintained. If the minimum distance of 1.5 m without covering the mouth and nose is not maintained, e.g. when groups of people sit at a table or in large gatherings, there is also an increased risk of transmission outdoors.

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

Disease severity

In most cases, the disease is mild. The probability of progression towards serious disease increases with increasing age and underlying illnesses. Individual long-term consequences cannot be estimated yet. The individual risk cannot be derived from epidemiological/statistical data. Thus, even without known previous illnesses and in young people, the course of the disease can be severe or even life-threatening. Long-term consequences, even after slight progressions, cannot yet be assessed.

Burden on health system

The burden on the health care system depends largely on the geographical distribution of cases, the main population groups affected, the health care capacity and initiation of containment measures (isolation, quarantine, physical distancing etc.). In large parts of Germany it is currently low, but it can rapidly increase locally and affect the public health system in particular as well as medical care facilities.

Measures taken in Germany

- Selected and regularly updated information on COVID-19 in English https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/COVID19.html
- Information on the designation of international risk areas https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html
- The ministry of health has published a record of all measures implemented in Germany since 27/01/2020 https://www.bundesgesundheitsministerium.de/coronavirus/chronik-coronavirus.html *(in German)*
- Information from the Ministry of Health for travellers entering Germany: Frequently asked questions and answers https://www.bundesgesundheitsministerium.de/coronavirus-infos-reisende/faq-tests-einreisende.html *(in German)*
- Corona-Warn-App https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/WarnApp/Warn_App.html *(in German)*
- Regulations for persons entering Germany in connection with the novel coronavirus SARS-CoV-2 (15/09/2020) https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/BMG_Merkblatt_Reisende_Tab.html *(in German)*
- Information on additional regulations at the regional level regarding control measures such as physical distancing or quarantine regulations for persons entering from other countries can be accessed here: https://www.bundesregierung.de/breg-de/themen/coronavirus/corona-bundeslaender-1745198 *(in German)*
- Data on current disease activity can be found on the RKI dashboard: https://corona.rki.de/
- A distance of 1.5 metres to other individuals must be maintained in public spaces: https://www.bundesregierung.de/breg-de/themen/coronavirus/besprechung-der-bundeskanzlerin-mit-den-regierungschefinnen-und-regierungschefs-der-laender-1733248 *(in German)*
- (Non-medical) face masks must be worn on public transport and in shops in all federal states.

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