



# Coronavirus Disease 2019 (COVID-19)

## Daily Situation Report of the Robert Koch Institute

04/02/2021 - UPDATED STATUS FOR GERMANY

Confirmed cases		7-day incidence (7-di)			Vaccination monitoring	DIVI-Intensive care register
Total <sup>1</sup>	Active cases <sup>2</sup>	Total population	No. of districts with 7-di > 50/100,000 pop		No. of vaccinations reported in last 24h <sup>4</sup>	Change to previous day for cases currently in ICU
+14,211 (2,252,001)	-4,400 [ca. 201,300]	81 cases/ 100,000 pop	-9 [341/412]		+44,531 1 <sup>st</sup> vaccination +65,548 2 <sup>nd</sup> vaccination	-44 [4,178]
Recovered <sup>3</sup>	Deaths	60-79 years	80+ years	No. of districts with 7-di > 100/100,000 pop	Total no. of vaccinated with one/two vaccine dose/s and share of population <sup>4</sup>	Completed ICU treatment; thereof deceased [%]
+17,800 (ca. 1,991,000)	+786 (59.742)	64 cases/ 100,000 pop	147	-12 [110/412]	N1: 2,091,689 (2.5%) N2: 756,333	+623 27%

Numbers in ( ) brackets show cumulative values, numbers in [ ] brackets show current values. Footnotes can be found in the Annex.

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.

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

### Summary (as of 04/02/2021, 12:00 AM)

- Currently, the number of transmissions in the population in Germany remains high. RKI assesses the level of threat to the health of the general population to be **very high**.
- Yesterday, **14,211** new laboratory-confirmed COVID-19 cases as well as **786** new deaths associated with COVID-19 were transmitted to the RKI. The national 7-day incidence is **81** cases per 100,000 population. In Brandenburg, Saarland, Saxony, Saxony-Anhalt, and Thuringia it is markedly above the national incidence.
- In **341** of the 412 districts, the 7-day COVID-19 incidence is high. In **110** districts, the 7-day incidence is >100 cases/100,000 population and in **6** of these districts it is >250-500 cases/100,000 population.
- The 7-day incidence among people aged 60-79 years is currently **64** and of people aged ≥80 years, **147** cases/100,000 population.
- The high nationwide number of cases is caused by increasingly diffuse transmission, with numerous clusters especially in households, occupational settings and nursing and long-term care homes.
- On **04/02/2021 (12:15 PM)** **4,178** COVID-19 patients were in intensive care. In the preceding 24 hours, **+623** existing patients had been discharged (**27 %** of whom had died) and **+579** patients were newly admitted. The resulting number of cases under treatment was **44 less** than the prior day.
- Since 26/12/2020 a total of **2,091,689** people in Germany have been vaccinated at least once (vaccination rate **2.5%**) and **756.333** people twice against COVID-19 (<http://www.rki.de/covid-19-impfquoten>).
- In this situation report, the following additional information is given: **information from additional RKI based surveillance systems for acute respiratory illness, data on emergency department utilization**

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

## Epidemiological Situation in Germany

In accordance with the international standards of WHO<sup>1</sup> and ECDC<sup>2</sup>, the RKI classifies all cases of laboratory confirmation via SARS-CoV-2-nucleic acid based (e.g. PCR) detection or SARS-CoV-2 isolation as COVID-19 cases, regardless of the presence and severity of clinical symptoms. 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 sharp rise in case numbers at the beginning of December, a decrease during the holidays and an increase in the first week of January the case numbers have been slowly decreasing.

The R-value is currently slightly below 1. Due to the still very high number of infected persons in Germany, this means that although the number of new infections per day is decreasing, it remains high.

Outbreaks are being reported from various districts throughout Germany, currently particularly in nursing and long-term care homes, occupational settings, and households. Additionally, in many districts, there is an increasingly diffuse spread of SARS-CoV-2 without traceable transmission chains.

Since patients in older age groups more often suffer from more severe illness due to COVID-19, the number of serious cases and deaths remains at a high level. These can only be avoided if all persons prevent the spread of the SARS-CoV-2 virus with the help of infection control measures.

It is therefore still necessary for the entire population to be committed to infection prevention and control, e.g. by consistently observing rules of distance and hygiene - also outdoors -, by ventilating indoor spaces and, where indicated, by wearing a surgical mask or masks marked with N95 or KN95 or FFP2 correctly. Crowds of people - especially indoors - should be avoided.

Several variants of SARS-CoV-2 are currently being detected worldwide. Their effect on the spread of SARS-CoV-2 and the effectiveness of vaccinations on these variants are being examined in detail. Since mid-December there have been reports of the increasing spread of a new virus variant (B.1.1.7) in the United Kingdom. There is increasing clinical-diagnostic as well as epidemiological evidence of increased infectiousness of this variant. There are initial indications from the United Kingdom that infections with variant B.1.1.7 may lead to more severe diseases. Preliminary laboratory studies indicate that mRNA vaccine efficacy is unlikely to be strongly affected by variant B.1.1.7.

Also, in December 2020, an increased occurrence of a SARS-CoV-2 variant in South Africa (B.1.351) was reported, which has displaced other variants. Therefore, an increased infectiousness is conceivable. For this virus variant, too, laboratory tests show that the efficacy of the licensed mRNA vaccines is only minimally affected. In addition, a SARS-CoV-2 variant derived from line B.1.1.28 is circulating in the Brazilian state of Amazonas. Travels, which are non-essential, should be avoided – especially due to the circulation of new virus mutations.

All three variants have already been detected in Germany. With increased sequencing and data acquisition in the German Electronic Sequence Data Hub (DESH - [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/DESH/DESH.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/DESH/DESH.html)) the infection process is increasingly monitored through integrated molecular surveillance.

<sup>1</sup> World Health Organization, [https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance\\_Case\\_Definition-2020.1](https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2020.1)

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

## 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 **2,252,001 (+14,211)** laboratory-confirmed cases of COVID-19 have been reported to and validated by the RKI (Table 1).

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 (04/02/2021, 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	Cumulative cases			Last 7 days		Cumulative deaths	
	Total number of cases	Number of new cases	Cases/100,000 pop.	Cases in the last 7 days	7-day incidence/100,000 pop.	Number of deaths	Number of deaths/100,000 pop.
Baden-Wuerttemberg	296,749	1,354	2,673	7,461	67	7,275	65.5
Bavaria	408,021	2,355	3,109	10,906	83	10,895	83.0
Berlin	121,399	649	3,308	2,641	72	2,376	64.8
Brandenburg	69,805	574	2,768	2,678	106	2,507	99.4
Bremen	16,226	71	2,382	587	86	283	41.5
Hamburg	46,966	412	2,542	1,201	65	1,097	59.4
Hesse	174,489	1,177	2,775	5,427	86	5,050	80.3
Mecklenburg-Western Pomerania	20,591	307	1,280	1,381	86	506	31.5
Lower Saxony	144,638	1,186	1,809	4,923	62	3,412	42.7
North Rhine-Westphalia	492,669	2,433	2,745	13,850	77	11,259	62.7
Rhineland-Palatinate	94,302	545	2,303	2,880	70	2,648	64.7
Saarland	26,296	311	2,665	1,231	125	760	77.0
Saxony	182,333	995	4,478	4,077	100	6,560	161.1
Saxony-Anhalt	53,358	599	2,431	2,697	123	1,860	84.7
Schleswig-Holstein	37,044	484	1,276	2,014	69	967	33.3
Thuringia	67,115	759	3,146	3,165	148	2,287	107.2
<b>Total</b>	<b>2,252,001</b>	<b>14,211</b>	<b>2,708</b>	<b>67,119</b>	<b>81</b>	<b>59,742</b>	<b>71.8</b>

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 **1,167,369** cases (52 %) thus their date of reporting is provided in Figure 1.

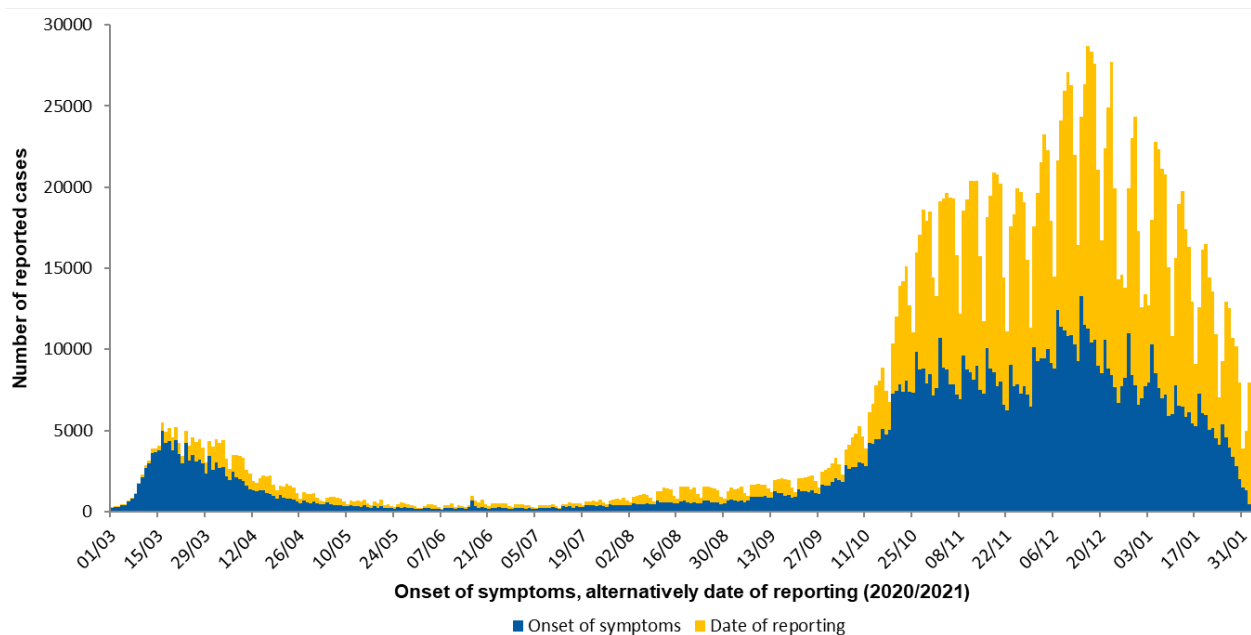


Figure 1: Number of COVID-19 cases in Germany electronically reported to the RKI by the date of symptoms onset or – if unknown – alternatively by date of reporting since 01/03/2020 (04/02/2021, 12:00 AM).

## Estimation of the reproduction number (R)

The reproduction number,  $R$ , is defined as the mean number of people infected by one infected person. The estimation of the  $R$ -value is based on the so-called nowcasting (Figure 2), a statistical procedure that shows the development of the number of cases after the onset of the disease and also forecasts it for the last few days. This forecast is subject to uncertainty, which is also reflected in the prediction intervals given for the  $R$ -value. After further case reports have been received at the RKI, the  $R$ -value is adjusted for the past days and, if necessary, corrected upwards or downwards. In recent weeks, values reported at the beginning of a week were typically corrected slightly upwards. They had thus slightly underestimated the real COVID-19 events in Germany, while values estimated towards the end of a week were more stable. The currently estimated course of the  $R$ -value is shown in Figure 3.

4-day R-value
0.78
(95%-prediction interval: 0.68 – 0.88)

7-day R-value
0.89
(95%-prediction interval: 0.83 – 0.94)

Delays in reporting of case numbers at weekend days can lead to cyclical fluctuations of the 4-day R-value. The 7-day R-value is less affected because all week days are used to determine the value.

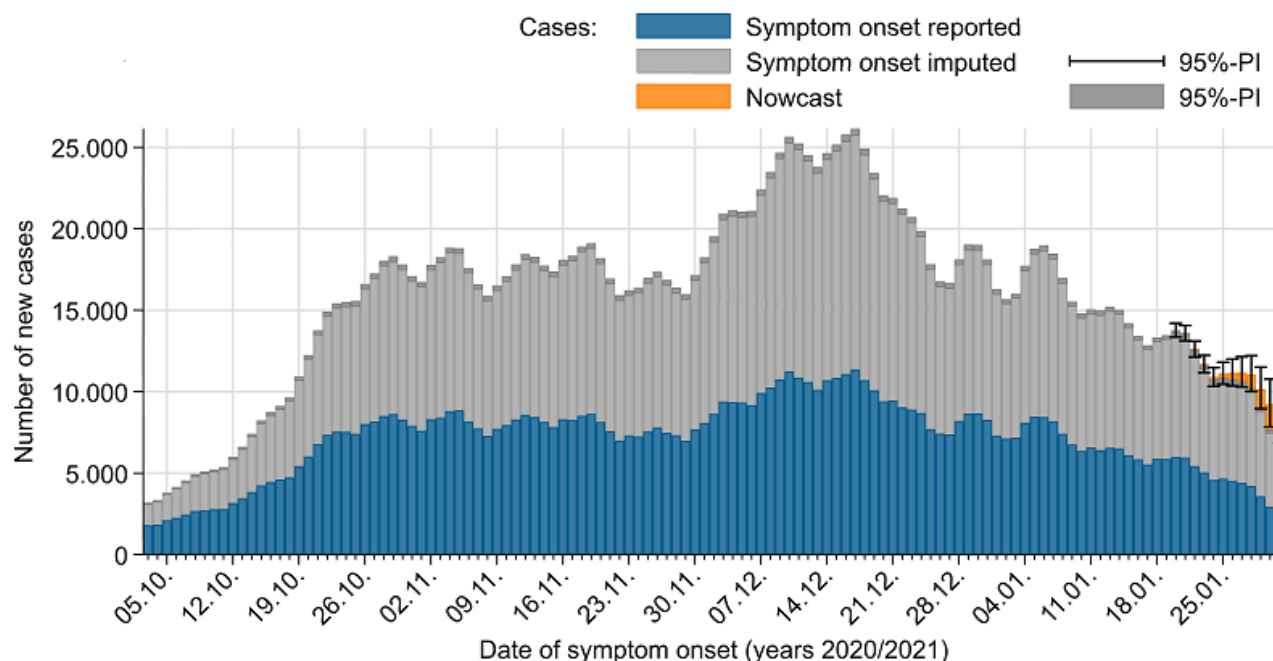


Figure 2: Number of notified COVID-19 cases with known date of illness onset (dark blue), estimated date of illness onset for cases without reported date of onset (grey) and estimated number of not yet notified cases according to illness onset electronically reported to RKI (orange) (as of 04/02/2021, 12 AM, considering cases up to 31/01/2021).

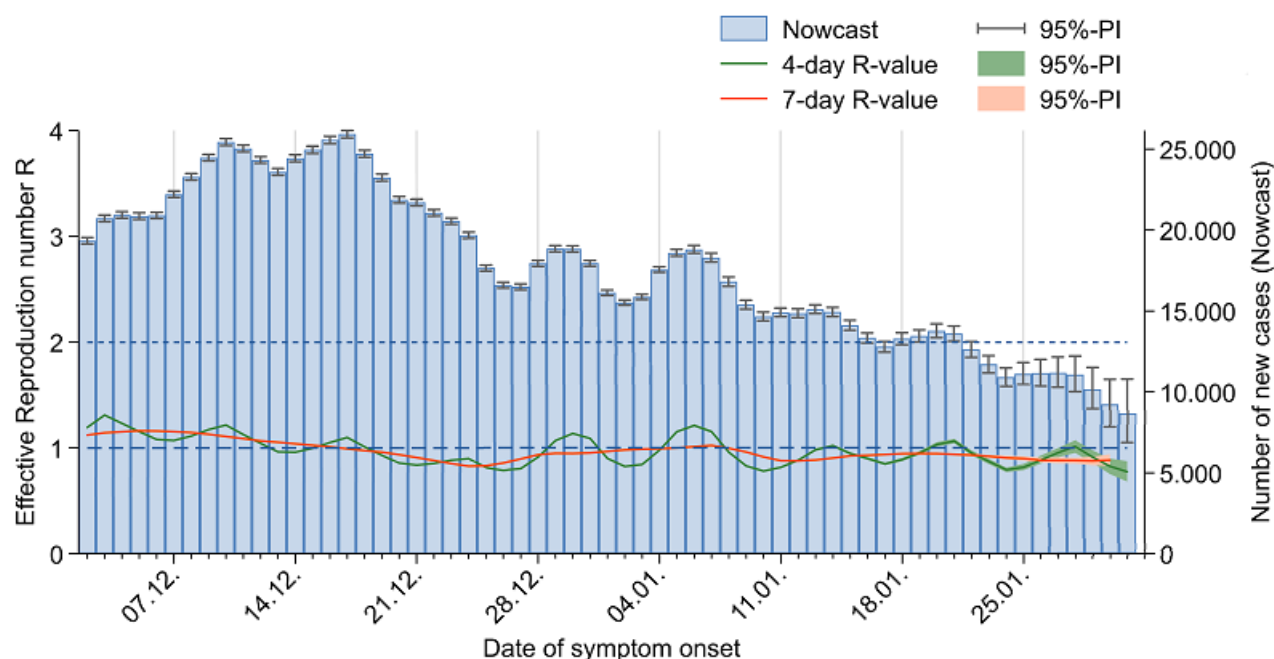


Figure 3: The estimated R-values (in green and orange) over the last 60 days, against the background of the estimated number of COVID-19 cases according to illness onset (as of 04/02/2021, 12 AM, considering cases up to 31/01/2021).

The R-value is currently slightly below 1. Due to the still very high number of infected persons in Germany, this means that although the number of new infections per day is decreasing, it remains high.

Sample calculations as well as an excel sheet presenting both R-values with daily updates can be found under <http://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](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/#/index>).

As of 04/02/2021, a total of 1,281 hospitals reported to the DIVI registry. Overall, 27,064 intensive care beds were registered, of which 22,729 (84 %) are occupied, and 4,335 (16 %) beds are currently available. The number of COVID-19 cases treated in participating hospitals is shown in Table 2

Table 2: COVID-19 patients requiring intensive care (ICU) recorded in the DIVI register (04/02/2021, 12:15 PM).

		Number of patients	Change to previous day*
Currently	Currently in ICU	4,178	-44
	- thereof with invasive ventilation	2,300 (55%)	-19
	New admissions to ICU		+579
Total	Discharged from ICU	67,650	+623
	- thereof deaths	19,175 (28%)	+168 (27%)

\*The interpretation of these numbers must consider 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 4, 2021, the rate of ARI ("ARI rate") decreased slightly, mainly due to a decrease of the ARI rate in adults (aged 15 years and above). The ARI rate has been below the level of the previous years since week 36, 2020. 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 4, 2021, the overall number of patients visits due to acute respiratory infections (ARI rate) decreased. Since week 2, 2021, the ARI rate has been on a markedly lower level compared to previous years, especially in children under 15 years of age. Within the viral surveillance of the AGI, respiratory viruses were detected in 32 of 158 sentinel samples (20%) in week 4, 2021. Among those, rhinovirus was identified in 17 samples (11%), SARS-CoV-2 in 10 samples (6%), human seasonal coronavirus (hCoV) in 4 samples (3%) and parainfluenza virus was found in one sample (1%). Since week 40, 2020, SARS-COV-2 has been found in 164 (9%) of 1,928 samples. Sporadic human seasonal coronaviruses (hCoV) have been identified since week 2, 2020. Influenza virus or Respiratory Syncytial Virus have been detected none of the 1,935 samples tested since week 40, 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 respiratory tract). In [week 3, 2021](#), the overall number of SARI cases [decreased further due to a decrease in the age groups 35 years and above](#). The SARI case numbers in the age groups 35 years and above were comparable to the case numbers of previous years, but the number of SARI cases aged under 35 years were markedly lower than usual at this time of the year.

Since week 45, 2020, more than half of the reported SARI cases per week have been diagnosed with COVID-19 (ICD-10 code U07.1!) (Figure 4). In [week 3, 2021](#), the proportion of COVID-19 infections [decreased slightly to 65%](#). The proportion of COVID-19 infections among SARI by age groups can be found in Table 3. The proportions of COVID-19 cases in all age groups in the weeks 40, 2020 to [2, 2021](#) have been more than twice as high as in spring (weeks 12 to 20, 2020). In [week 3, 2021](#), the proportion of COVID-19 cases in the age groups above 14 years remained high, comprising more than half of the SARI cases in this week. [For the first time, the proportion of COVID-19 in SARI cases aged between 35 and 59 years was lower than the cumulative proportion of previous weeks \(weeks 40, 2020 to 2, 2021\)](#). Within the 72 sentinel hospitals, there was [one](#) COVID-19 case among SARI patients below 15 years of age in [week 3, 2021](#). 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.

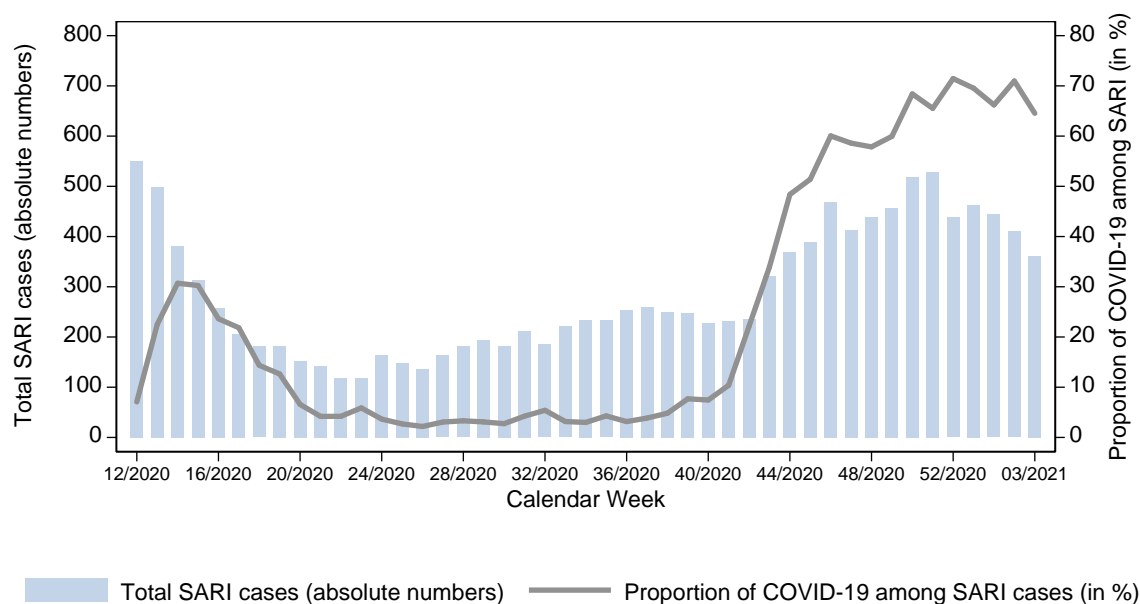


Figure 4: Weekly number of SARI cases (ICD-10 codes J09-J22) and proportion of cases with a diagnosis of COVID-19 (ICD-10 code U07.1!) among SARI cases with duration of hospitalization of up to one week and with date of admission in weeks 12 to 3, 2021, from 72 sentinel hospitals



Table 3: Total 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 by age groups for different time periods since week 12, 2020; only patients with duration of hospitalization of up to one week, data from 72 sentinel hospitals

Age group		week 12 - 20, 2020	week 21 - 39, 2020	week 40, 2020 - 2, 2021	week 3, 2021
<b>0 to 14 years</b>	SARI cases (total)	322	869	511	10
	Proportion of COVID-19 (%)	0.3%	0.2%	3.1%	10%
<b>15 to 34 years</b>	SARI cases (total)	177	188	343	8
	Proportion of COVID-19 (%)	18%	13%	57%	75%
<b>35 to 59 years</b>	SARI cases (total)	535	512	1,346	61
	Proportion of COVID-19 (%)	31%	13%	69%	67%
<b>60 years and older</b>	SARI cases (total)	1,689	2,074	4,153	282
	Proportion of COVID-19 (%)	19%	2.5%	58%	66%
<b>Overall</b>	SARI cases (total)	2,723	3,643	6,353	361
	Proportion of COVID-19 (%)	19%	4.0%	56%	65%

## Data on emergency department utilization

In collaboration with the National Emergency Department Register AKTIN (<https://www.aktin.org/en/>), and with the ESEG project partners ([https://www.rki.de/EN/Content/infections/epidemiology/ESEG/ESEG\\_node.html](https://www.rki.de/EN/Content/infections/epidemiology/ESEG/ESEG_node.html)), the RKI analyses emergency department utilisation, and prepares weekly situation report: <https://www.rki.de/EN/Content/Institute/DepartmentsUnits/InfDiseaseEpidem/Div32/sumo/sumo.html>

Within the emergency department situation report of the **03 February 2021**, data from **22** emergency departments have been included from **01 January 2019** up to and including **31 January 2021**. In week **4-2021**, **11,306** admissions were recorded; which was a **+0.9%** change compared to last week, and a **-30.2%** average change compared to the mean of the pre-pandemic year 2019 (see Figure 5).

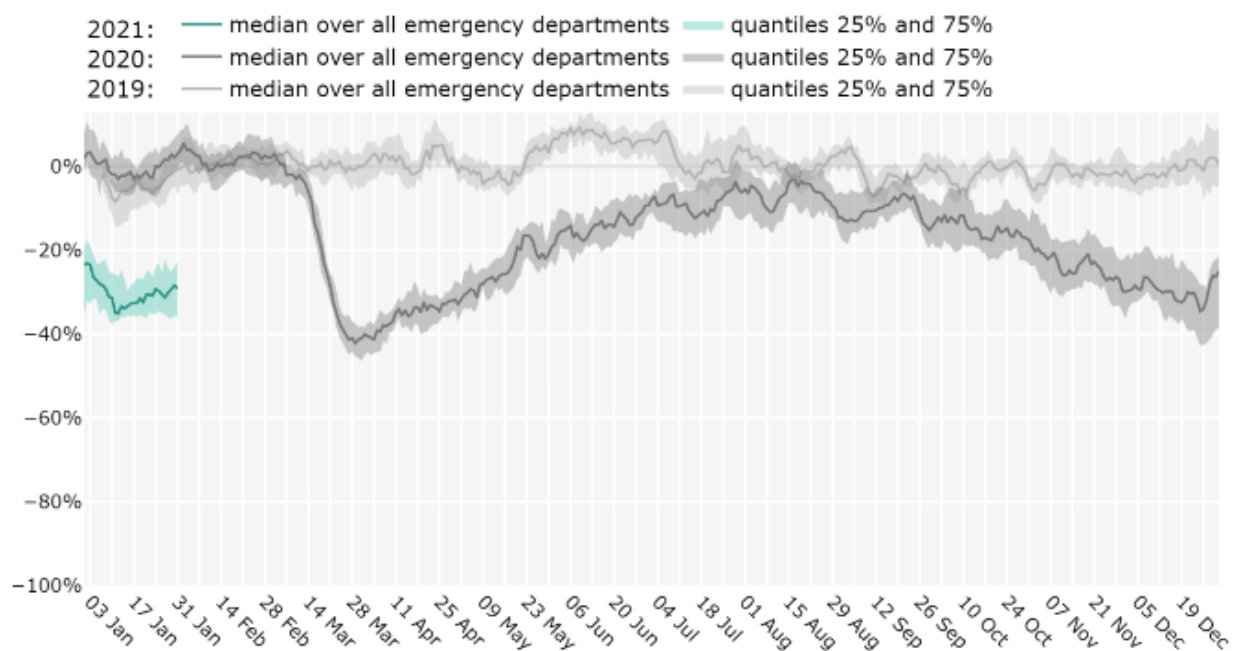


Figure 5: Relative deviation of admissions in each emergency department compared to its mean in 2019, from January 2019 to January 2021 (as of 03 February 2021), averaged over all emergency departments.

## Risk Assessment by the RKI

In view of persistently high case numbers, the RKI currently assesses the threat to the health of the general population to be **very high**. The revised version highlights the ongoing community transmission of SARS-CoV-2 as well as the occurrence of outbreaks especially in nursing and senior care homes, households, and occupational settings.

Against the background of rising occurrence of variants of concern (VOC) with higher infectiousness, a rigorous reduction of physical contacts, usage of protective measures as well as intensive efforts to contain outbreaks and chains of infections are necessary to reduce the number of new infections and to protect vulnerable persons.

On 03/02/2021, the risk assessment was updated with reference to the new SARS-CoV-2 variants. The current version can be found here:

[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Risikobewertung.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikobewertung.html) *(in German)*

## Measures taken in Germany

- Entry restrictions to Germany for travelers from countries designated as regions with variants (30/01/2021; *in German*)  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Transport/CoronaSchV\\_Mutationen.pdf?blob=publicationFile](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/CoronaSchV_Mutationen.pdf?blob=publicationFile)
- Information on the designation of international risk areas (25/01/2021)  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Risikogebiete\\_neu.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikogebiete_neu.html)
- German electronic Sequencing-Data-Hub (DESH, Deutscher elektronischer Sequenzdaten-Hub)  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/DESH/DESH.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/DESH/DESH.html) (21.01.2021, *in German*)
- Recommendations on COVID-19-vaccination (*in German*)  
<https://www.rki.de/DE/Content/Infekt/Impfen/ImpfungenAZ/COVID-19/Impfempfehlung-Zusfassung.html>
- Further governmental resolutions regarding additional containment measures (Lockdown, *in German*)  
<https://www.bundesregierung.de/breg-de/themen/coronavirus/mpk-beschluss-corona-1834364>
- Vaccination started in Germany on the 26<sup>th</sup> of December 2020 (*in German*) <http://www.rki.de/covid-19-impfquoten>
- Regulation to entry to Germany (13/01/2021. *in German*)  
[https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3\\_Downloads/C/Coronavirus/Verordnungen/Corona-Einreiseverordnung\\_BAnz.pdf](https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/C/Coronavirus/Verordnungen/Corona-Einreiseverordnung_BAnz.pdf)
- National Testing Strategy – who will be tested for SARS-CoV-2 in Germany (*in German*)  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Teststrategie/Nat-Teststrat.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Teststrategie/Nat-Teststrat.html)
- Important information and guidance on SARS-CoV-2 for returning travellers (*in German*)  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Transport/BMG\\_Merkblatt\\_Reisende\\_Tab.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Transport/BMG_Merkblatt_Reisende_Tab.html)
- Selected and regularly updated information on COVID-19 <https://www.rki.de/covid-19-en>
- The ministry of health has published a record of all measures implemented in Germany since 27/01/2020 (*in German*)  
<https://www.bundesgesundheitsministerium.de/coronavirus/chronik-coronavirus.html>
- Information from the Ministry of Health for travellers entering Germany: Frequently asked questions and answers (*in German*)  
<https://www.bundesgesundheitsministerium.de/coronavirus-infos-reisende/faq-tests-einreisende.html>
- Corona-Warn-App  
<https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/CWA/CWA.html>

- 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 (*in German*):  
<https://www.bundesregierung.de/breg-de/themen/coronavirus/corona-bundeslaender-1745198>

## Annex

- <sup>1</sup> The difference to the previous day is based on the date cases are received at RKI. Due to delay in data transmission, cases from preceding days may be included.
- <sup>2</sup> Active cases were calculated from the number of transmitted cases minus deaths and the estimated number of recovered cases.
- <sup>3</sup> The algorithm for estimation of recovered cases considers information on disease onset and hospitalization, but not for late effects, because such data are not recorded regularly.
- <sup>4</sup> Data on COVID-19 vaccinations are only updated on weekdays. On Sundays, updated figures are not reported.