



# Weekly status report of the RKI on coronavirus disease-2019 (COVID-19)

06/30/2022 – UPDATED STATUS FOR GERMANY

*Suspected COVID-19 cases and illnesses as well as laboratory evidence of SARS-CoV-2 are reported to the health department in accordance with the Infection Protection Act (IfSG). This transmits the data to the Robert Koch Institute (RKI) via the competent state authority. In this management report, the data transmitted to the RKI for laboratory-confirmed data (nucleic acid detection or pathogen isolation) COVID-19 cases shown. Data from other surveillance systems and surveys are also presented.*

The cases transmitted to the RKI are updated daily on the dashboard (<https://corona.rki.de/>) and as a daily situation report ([www.rki.de/covid-19-situationsbericht](http://www.rki.de/covid-19-situationsbericht)) available. A weekly comparison with the current classification is presented in today's weekly report (always on Thursdays). Most of the results in this weekly report are for data up to March 25.

Calendar week 2022.

Under the link [www.rki.de/inzidenzenstellen](http://www.rki.de/inzidenzenstellen) the RKI provides the daily updated number of cases and incidences (including the progression after the report date) by district and federal state. [Trend reports of relevant indicators](#) are updated every working day also available. Furthermore, [SurvStat@RKI](#) the possibility of individually querying transmitted COVID-19 cases as well as other cases of illness and evidence of pathogens that are notifiable under the Infection Protection Act (IfSG). The current version of the risk assessment can be found at <https://www.rki.de/covid-19-risk-assessment>.

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## data basis

All reported SARS-CoV-2 laboratory-confirmed cases are recorded in the **reporting system** in accordance with the Infection Protection Act (Sections 1.1 to 1.4). This allows cases to be analyzed regionally according to the severity of the disease with high resolution and outbreaks to be identified and contained (Sections 1.5, 1.7). As with other notifiable infectious diseases, not all individual cases can be fully recorded.

The utilization behavior of those affected, the availability of PCR tests and the respective test strategy play an important role here. With a significant circulation of SARS-CoV-2 in the population, which only occurred in Germany with the appearance of the omicron lines, it is neither possible nor necessary for all cases to be recorded in the reporting system. With **syndromic surveillance**, the number of symptomatic patients in the population as well as the number of doctor visits and hospital admissions could be estimated over the entire course of the pandemic, including during the omicron wave and beyond (Section 1.6). With **virological and molecular surveillance**, the circulating respiratory pathogens and, for SARS-CoV-2, the respective variants with the corresponding sublines are reliably detected (Sections 1.6.2 and 3). Detailed data are also available for the **exposure in the intensive care area** and for the **number of vaccinations administered** (Sections 1.7.3 and 2). The evaluation of this data enables a reliable assessment and evaluation of the overall development of the epidemiological situation of COVID-19 in Germany.

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# 1. Epidemiological situation in Germany

## 1.1. Summary assessment of the current situation

The nationwide 7-day incidence increased in calendar week (KW) 25 compared to the previous week by almost 155,000 cases (+ 38%). This increase in 7-day incidence affects all age groups. In particular, older people and children and young people have seen significant increases compared to the previous week. Against the background of the high infection pressure in the general population, the number of outbreaks in old people's and nursing homes as well as in medical treatment facilities has increased again compared to the previous week.

In Germany, the omicron variant has been dominating for the last five months with currently more than 99%. The proportion of the omicron subline BA.5 was almost 66% in week 24, it has become the dominant variant. Furthermore, the BA.4 variant continues to increase, albeit less strongly than in previous weeks, while the proportion of other sublines is declining.

The results of the syndromic surveillance of acute respiratory diseases currently show a significantly higher activity compared to previous years. In the population, the rate of acute respiratory diseases (ARE rate) in week 25/2022, as in the previous week, is above the values of the pre-pandemic years, which indicates a stronger general infection rate for acute respiratory infections at this time of year compared to previous years. The ARE rate corresponds to a total of approx. 4.5 million acute respiratory diseases in the population in Germany. In the outpatient area, there were significantly more in the 25th week nationwide

Doctor visits for ARE registered as in the previous week. The values have increased in all age groups. According to the results of the virological sentinel surveillance in week 24/2022, the ARE activity is due to the co-circulation of various respiratory pathogens (mainly SARS CoV-2, but also rhino, parainfluenza and influenza viruses).

The development of the number of serious illnesses is particularly important for assessing the situation in the current situation of the pandemic. In the first four COVID-19 waves, the systems for syndromic surveillance of acute respiratory diseases showed a high number of severe disease courses in inpatients and especially in intensive care. In

During the fifth (omicron) wave, the number of severe illnesses due to COVID-19 was significantly lower, while the number of infections was high.

The number of newly hospitalized patients with severe acute respiratory infections (SARI) who are being treated as inpatients and in intensive care has been falling overall since week 14 and remains at a low level. The proportion of COVID-19 diseases in SARI cases that require inpatient or intensive care treatment, on the other hand, increased significantly in week 25 to 35% and 36% respectively. The 80+ age group continues to be the most affected by severe disease from COVID-19 being treated in hospital. In week 25/2022 there were about 19 hospitalizations due to COVID SARI/100,000 inhabitants in this age group. The absolute number of people treated in an intensive care unit with a COVID-19 diagnosis also increased significantly in week 25/2022 compared to the previous weeks and was 934 cases on June 29, 2022.

There is no evidence that the BA.5 omicron lineage that now dominates causes more severe courses or a higher lethality than previous virus variants. Nevertheless, due to the sharp increase in cases of infection, a correspondingly higher number of severe courses of COVID-19 diseases can currently be observed, which is already leading to an increasing number of hospitalizations. An increase in the number of deaths is indicated with regard to the expected late reports.

The vaccination rate has now remained almost unchanged for several weeks, with 78% of the population having a one-off vaccination and 76% having a full vaccination as of 06/29/2022. Extrapolated around 7.3 million citizens (16%) in the age group 18 to 59 years and around 2.0 million (8%) in the age group over 60 years are not yet vaccinated. However, it must be assumed that the majority of these people have acquired a certain degree of immunity through a previous infection.

Even if the omicron variant is dominant, fully vaccinated people of all age groups – especially people with a booster vaccination – can still be assumed to have very good vaccination protection against severe COVID-19 disease. Furthermore, there is a significantly higher risk of a severe form of COVID-19 disease for unvaccinated people of all age groups.

Due to its high protective effect against a severe course, vaccination has not lost its importance in diseases caused by the omicron variant. In particular, risk groups and very old people over the age of 70 should also protect themselves against a serious illness with the 2nd booster vaccination recommended by the STIKO. Children from the age of 5 without previous illnesses can benefit from the one-off vaccination, as recommended by the STIKO.

If symptoms of a new respiratory disease such as a runny nose, sore throat or cough occur, it is strongly recommended - regardless of the vaccination status and also in the case of a negative COVID-19 antigen rapid test result - to avoid contact and, if necessary, to contact the family doctor's practice.

The further course of the pandemic depends not only on the emergence of new virus variants and the use of the vaccinations offered, but also on the behavior of the population. Against the background of increasing incidences due to the more widespread use of the Omicron sublines BA.4 and BA.5, the recommendations for avoiding infection should continue to be observed will.

The Robert Koch Institute estimates the risk of COVID-19 for the health of the population in Germany to be **high** overall .

## 1.2. demographic distribution

The age-group-specific incidence is shown in Figure 1 as a 7-day incidence per 100,000 inhabitants (inhabitants) in the respective age group by reporting week (MW). A total of 565,063 cases were reported in MW 25/2022.

Compared to the previous week, the incidences increased in all age groups, by a total of about 38%. The increase was strongest in the age groups of 10 to 14 year olds with 57% and in over 90-year-olds at 55%, lowest in the 20-29 age group at 29%. The median age of all cases per reporting week has increased continuously since MW 03/2022 (median 29 years). This increase has flattened out in recent weeks; in MW 25/2022 the median age is 41 years.

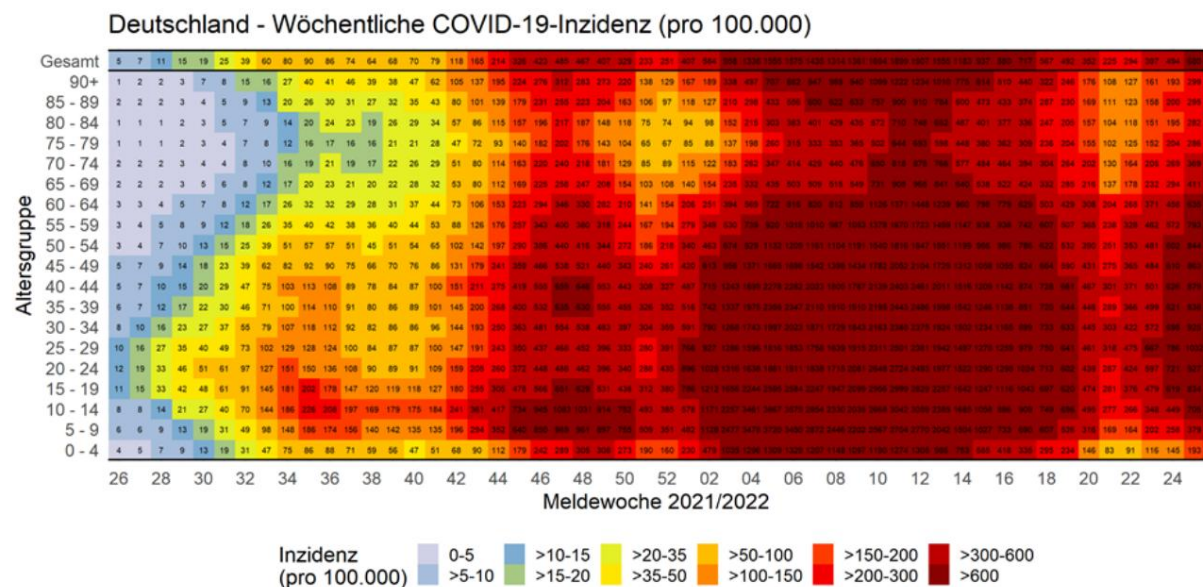


Figure 1. Presentation of the 7-day incidence of COVID-19 cases in Germany by age group and notification week (n= 24,091,818 cases with corresponding information in the notification weeks 26/2021 to 25/2022; data as of 06/29/2022, 00: 00 o'clock).

## 1.3. time course

Figure 2 shows the number of COVID-19 cases reported to the RKI per reporting week since the beginning of the pandemic in Germany in MW 10/2020. In the right quarter of the figure, the delta wave (fourth wave) before the turn of the year 2021/2022 and the two-peak omicron wave (fifth wave) afterwards are clearly visible. Up until MW 21/2022, the number of cases fell for ten weeks in a row. Since midweek 22/2022, the number of cases has been increasing again.

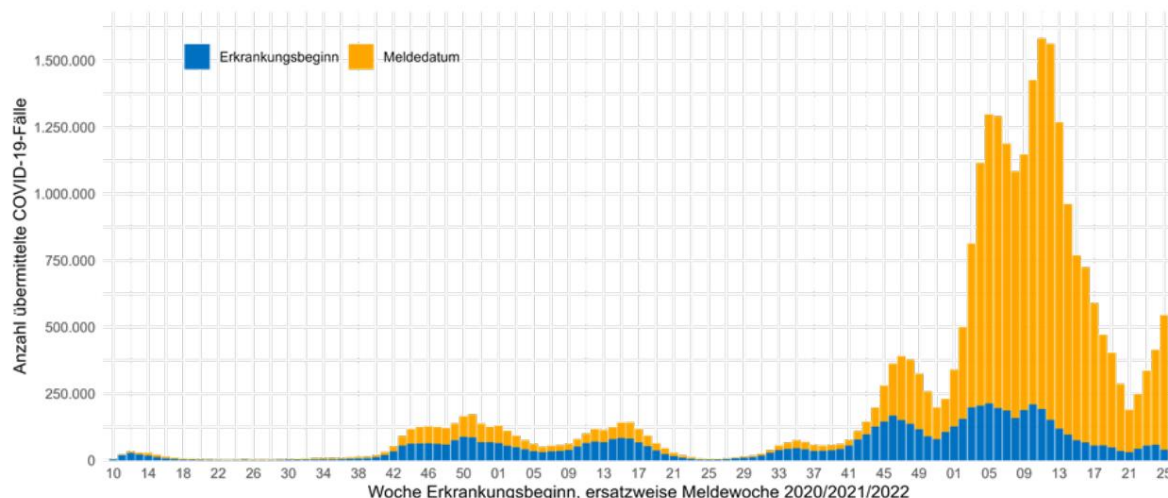


Figure 2: Number of COVID-19 cases reported to the RKI by week of onset of illness, alternatively by reporting week. Only cases with onset of illness or reporting week since MW 10/2020 are shown (data status June 29, 2022, 00:00).



## 1.4. Geographic Distribution

The geographical distribution of the cases of the last week and the previous week up to 06/19/2022 is shown in Figure 3. As of June 29, 2022, the 7-day incidence was over 1,000/100,000 inhabitants in 39 of 411 counties. It was over 500/100,000 inhabitants in 230 other districts and below 100/100,000 inhabitants in two districts. Among other causes the observed geographical differences in the reporting incidences can possibly also be explained by different testing behaviour.

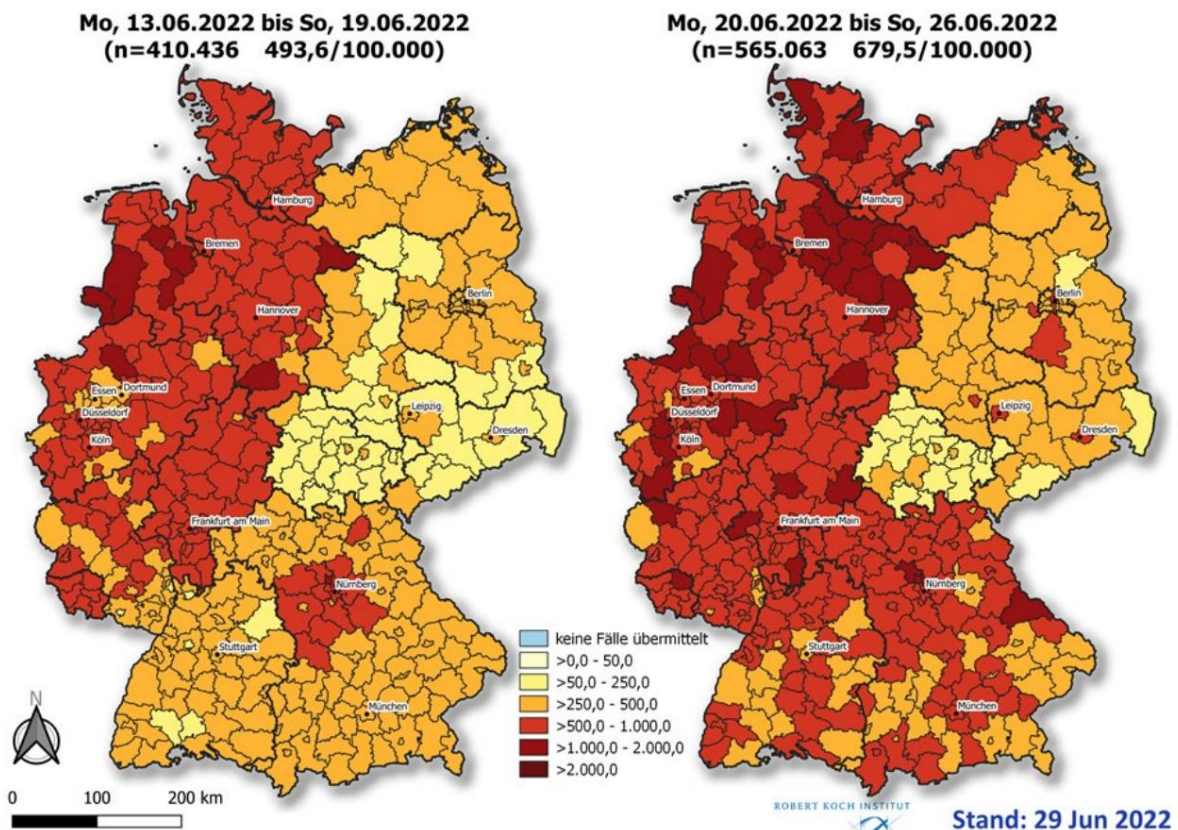


Figure 3: COVID-19 cases transmitted to the RKI with a reporting date within the last calendar week in Germany by district and federal state (n = 565,063, data status June 29, 2022, 00:00 a.m.) compared to the previous week. Cases are usually reported according to the district from which they were transmitted. This usually corresponds to the place of residence. Place of residence and probable place of infection do not have to match.

### 1.4.1. Weekly comparison of the federal states

Table 1 shows the case numbers and incidences of the past two reporting weeks for the individual federal states. Compared to the previous week, the incidences in all federal states increased between 21% (Schleswig-Holstein) and 59% (Baden-Württemberg and Mecklenburg-Western Pomerania).

**Table 1: Reported number of COVID-19 cases and 7-day incidence (cases/100,000 inhabitants) per federal state in Germany MW 24 and 25/2022 (data status June 29, 2022, 12:00 a.m.).**

Federal State	Meldewoche 24		Meldewoche 25		change in comparison	
	number	7-Day incidence	number	7-Day incidence	number	Portion
Baden-Wuerttemberg	37.180	335	59.131	533	21.951	59%
Bayern	55.410	422	78.661	599	23.251	42%
Berlin	12.950	353	16.725	456	3.775	29%
Brandenburg	7.934	313	10.337	408	2.403	30%
Bremen	3.685	542	5.391	793	1.706	46%
Hamburg	11.838	639	15.943	861	4.105	35%
Hesse	40.402	642	50.721	806	10.319	26%
Mecklenburg Western Pomerania	5.372	334	8.559	531	3.187	59%
Lower Saxony	63.451	793	77.910	973	14.459	23%
North Rhine-Westphalia	101.005	563	149.843	836	48.838	48%
Rhineland-Palatinate	20.237	494	27.660	675	7.423	37%
Saarland	5.861	596	8.092	822	2.231	38%
Saxony	12.047	297	15.279	377	3.232	27%
Saxony-Anhalt	5.985	274	7.866	361	1.881	31%
Schleswig-Holstein	23.209	797	28.123	966	4.914	21%
Thuringia	3.870	183	4.822	227	952	25%
In total	410.436	494	565.063	680	154.627	38%

## 1.5. Outbreaks in medical treatment facilities and elderly and nursing homes

Active outbreaks, i.e. outbreaks for which a new case was reported in MW 25/2022, occur in 88 medical treatment facilities (previous week: 45) and in 171 old people's and nursing homes (previous week: 119). 443 new COVID-19 cases in MW 25/2022 in outbreaks in medical treatment facilities and 1,992 cases in outbreaks in old people's and nursing homes were reported to the RKI.

From the beginning of the pandemic until the end of week 25/2022, 10,659 outbreaks in medical treatment facilities (Figure 4) and 13,476 outbreaks in retirement and nursing homes (Figure 5) were reported to the RKI with at least 2 cases per outbreak (data status June 28th, 2022, 00:00). Watch). Associated with these outbreaks were 90,818 COVID-19 cases (median: 4, range: 2-342 cases per outbreak) in medical treatment facilities and 285,013 COVID-19 cases (median: 13, range: 2-273 cases per outbreak) in elderly and nursing homes, of which 204,081 cases (71.6%) were in people aged 60 and over. <sup>1</sup>

<sup>1</sup> The age group of those over 60, based on the outbreak cases, serves as an approximation for residents of the Nursing homes, since the status of residents or employees was not always documented in the registration data for each individual case and relatives and visitors are also assigned to the outbreaks

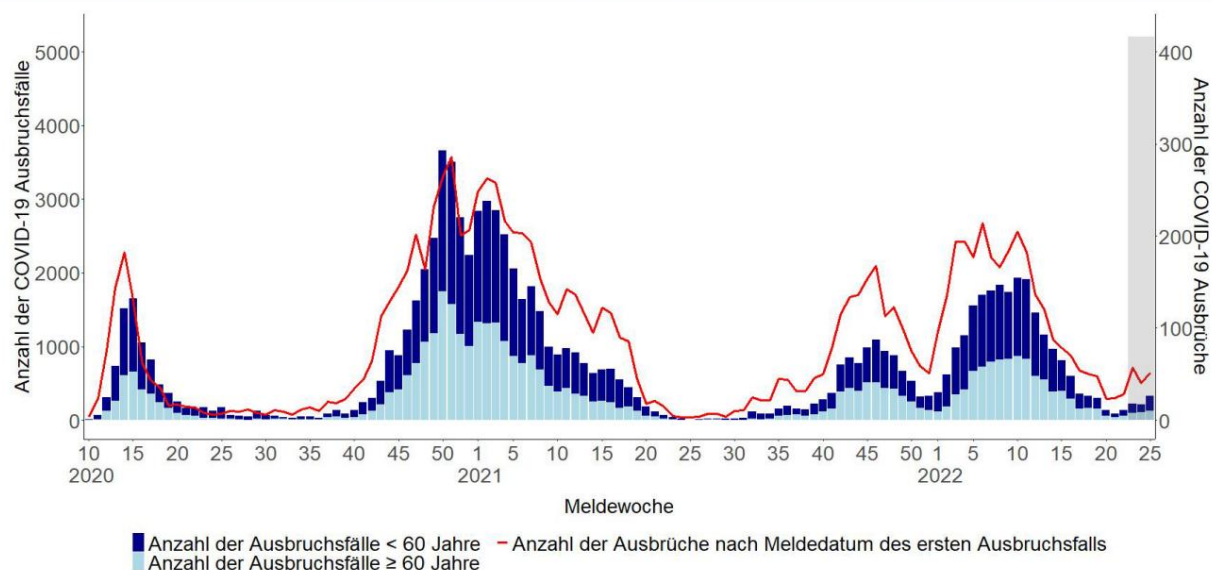


Figure 4: Reported COVID-19 outbreaks in medical treatment facilities with at least 2 cases according to the reporting date of the first outbreak since midweek 10/2020 (data status June 28, 2022, 00:00). Subsequent transmissions for outbreaks are to be expected especially for the last three reporting weeks (grey bars). The outbreak cases include not only patients, but also staff and visitors.

The cumulative number of deaths in these outbreaks up to MW 25/2022 was 7,223 (8.0% of outbreak cases) in medical treatment facilities (+ 15 deaths compared to the previous week) and 28,741 deaths (10.1% of outbreak cases) in elderly/ nursing homes (+ 46 deaths compared to the previous week). Outbreaks in old people's/nursing homes in the 60+ age group resulted in a total of 28,488 deaths (14.0% of outbreaks in the 60+ age group).

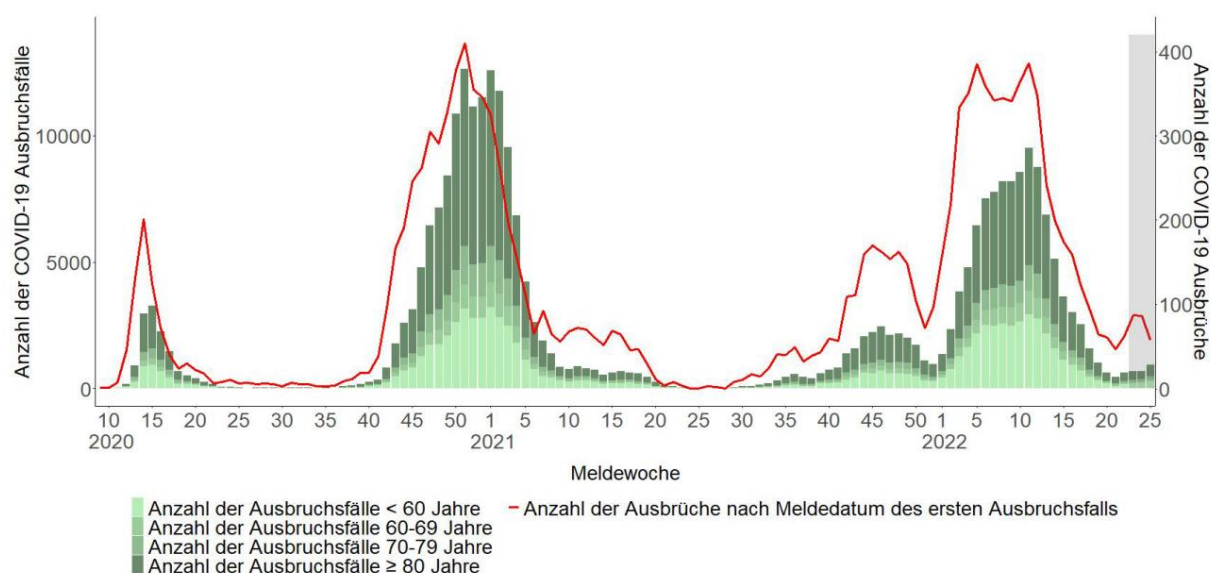


Figure 5: Reported COVID-19 outbreaks in old people's and nursing homes with at least 2 cases according to the reporting date of the first outbreak since midweek 10/2020 (data as of June 28, 2022, 00:00). Subsequent transmissions for outbreaks are to be expected especially for the last three reporting weeks (grey bars). The cases of outbreaks with the specification <60 years also include visitors and employees of the facilities.



## 1.6. Results from the surveillance systems on acute respiratory Diseases (ARE)

In addition to the data received via the legally mandatory reporting system in accordance with the IfSG, the RKI has other important sources of information about **acute respiratory diseases (ARE)** available. These are **syndromic** and **virological surveillance systems** that have been established at the RKI for several years. With the help of these additional surveillance systems, even in high-incidence situations, such as B. during the pandemic or the peak of seasonal waves of illness, the disease burden can be reliably recorded and different waves of illness can be compared with each other. The surveillance systems record the disease burden of acute respiratory infections at three levels: **A)** at the **population level (GrippeWeb)**, **B)** in **outpatient care** (Working Group Influenza (AGI) with the Sentinel for electronic recording of diagnostic **codes (SEEDARE))** and **C)** in the **inpatient area** (ICD-10 code-based hospital surveillance **ICOSARI**).

In addition to the general disease burden of ARE, due to the properties of the systems, the disease burden of **ARE with COVID-19 (COVID-ARE)** in the population and in outpatient care and of **severe ARE with COVID-19 (COVID-SARI)** at the hospital level can also be calculated will. Although the data have a limited geographical resolution, they are robust and allow age-stratified statements on the total disease burden of acute respiratory infections and the predominant circulating respiratory pathogens. They are collected weekly and can be supplemented by late registrations. Furthermore, these systems are largely independent of testing strategies, testing behavior in the population and in the health care system, and the availability of tests (further information with more detailed results from these surveillance systems can be found at

<https://grippeweb.rki.de>, <https://influenza.rki.de/wochenberichte.aspx> and at <https://influenza.rki.de/Diagrams.aspx>).

### 1.6.1. Recording of acute respiratory diseases at the population level

The web portal **GrippeWeb** has been monitoring the activity of acute respiratory diseases since 2011 with information directly from the population. In the population, the rate of acute respiratory diseases (ARE rate) in week 25/2022 remained stable overall compared to the previous week and is still above the values of the pre-pandemic years (Figure 6). In week 25/2022, there was a decrease in the ARE rate in children up to 14 years of age, but in the age groups from 15 years of age the values remained stable or increased. The **total ARE rate** in week 25/2022 was 5.4% and thus approx. **5,400 ARE/100,000 inhabitants**. This corresponds to a total of approx. 4.5 million acute respiratory diseases in the population in Germany.

**ARE with COVID-19:** The incidence of ARE cases with COVID-19 (COVID-ARE) in the total population can be extrapolated from the results of the SEEDARE system and from GrippeWeb (<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES2014.19.4.20684>).

It was calculated for week 25/2022 that around 0.3% to 0.6% of children and adolescents up to the age of 14 and 1.1% to 2.0% of the population aged 15 and over had COVID-19 with acute respiratory symptoms sick. This corresponds to a weekly **COVID-ARE incidence in the population** of around **1,000 to 1,800 patients/100,000 inhabitants** or, expressed as the number of patients, 800,000 to 1.5 million SARS-CoV-2 infected people with symptoms of an acute respiratory infection in week 25 /2022 in Germany.

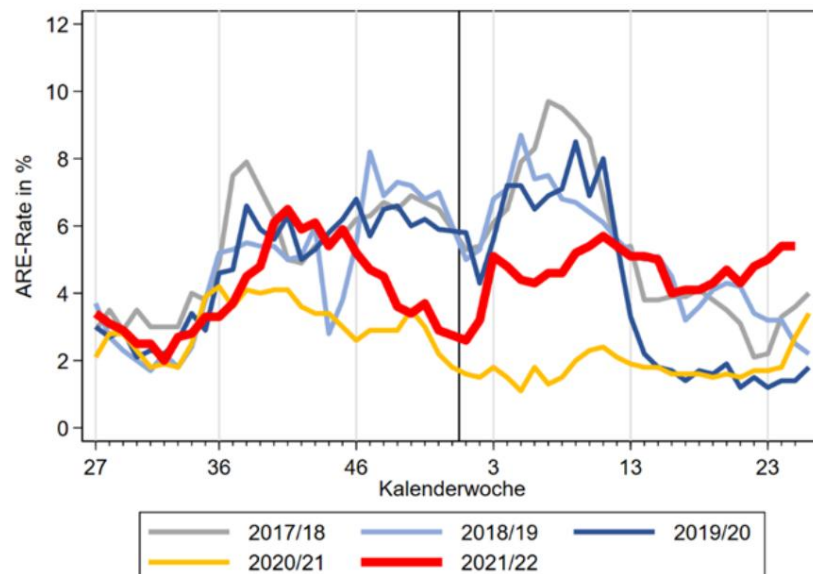


Figure 6: Comparison of the ARE rates estimated for the population in Germany (in percent) in the seasons 2017/18 to 2021/22, up to week 25/2022. The vertical line marks the turn of the year. Late registrations may result in changes for the last few weeks.

#### 1.6.2. Acute respiratory diseases in outpatient care

In week 25/2022, compared to the previous week, significantly more doctor visits in the outpatient area due to acute respiratory diseases (ARE consultation incidence) were registered.

The number of consultations because of ARE has increased in all age groups. The value (total) in week 25/2022 was approx. **1,500 doctor consultations for ARE/100,000 inhabitants**. Based on the population in Germany, this corresponds to a total of approx. 1.2 million doctor visits for acute respiratory diseases. Currently, the number of doctor visits for ARE is significantly higher than the pre-pandemic values in summer, especially among adults aged 15 and over (Figure 7).

In adults, an up to three times higher incidence of ARE consultations was observed than in the years before the COVID-19 pandemic at that time. A more sensitive one can also do this

Consultation behavior (visiting the doctor's office even with mild ARE symptoms) have contributed.

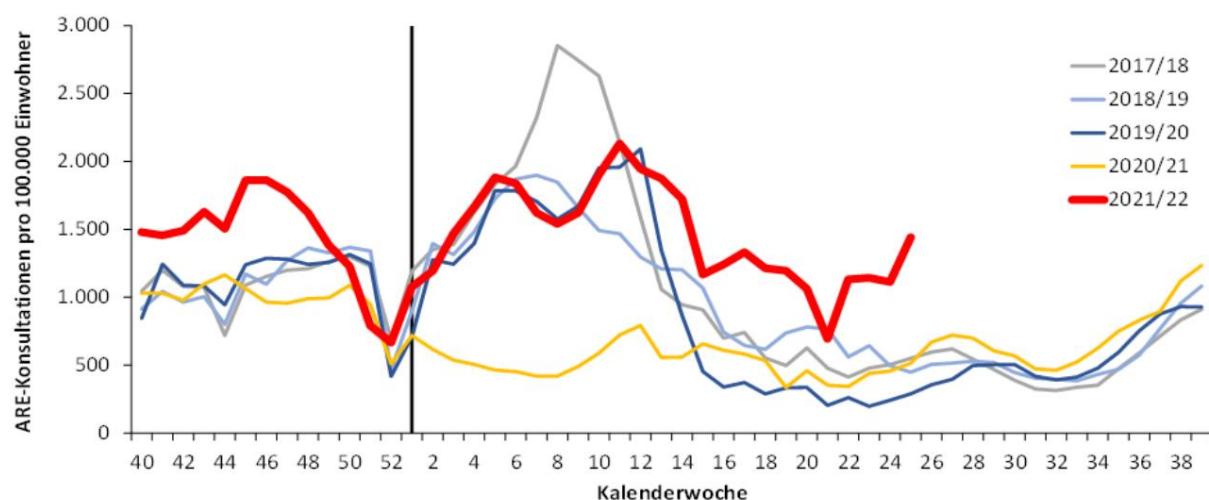


Figure 7: Weekly incidence of doctor consultations for a newly occurring ARE in the seasons 2017/18 to 2021/22, up to week 25/2022. Late registrations may result in changes for the last few weeks.

In the **virological surveillance of the AGI** in week 25/2022, respiratory viruses were identified in a total of 53 of 85 samples (62%) submitted. These included 17 samples with SARS-CoV-2 (20%), 13 with parainfluenza viruses (15%), 11 with rhinoviruses (13%), 7 with influenza viruses (8%), 4 with human metapneumoviruses (5%) and 3 Human Seasonal Coronavirus (hCoV) samples (4%). According to the virological results in week 25/2022, the ARE activity is due to the co-circulation of various respiratory pathogens (mainly SARS-CoV-2, but also parainfluenza, rhino and influenza viruses). While rhinoviruses were detected with about the same frequency in all age groups, parainfluenza viruses are particularly common in the 0 to 4 age group.

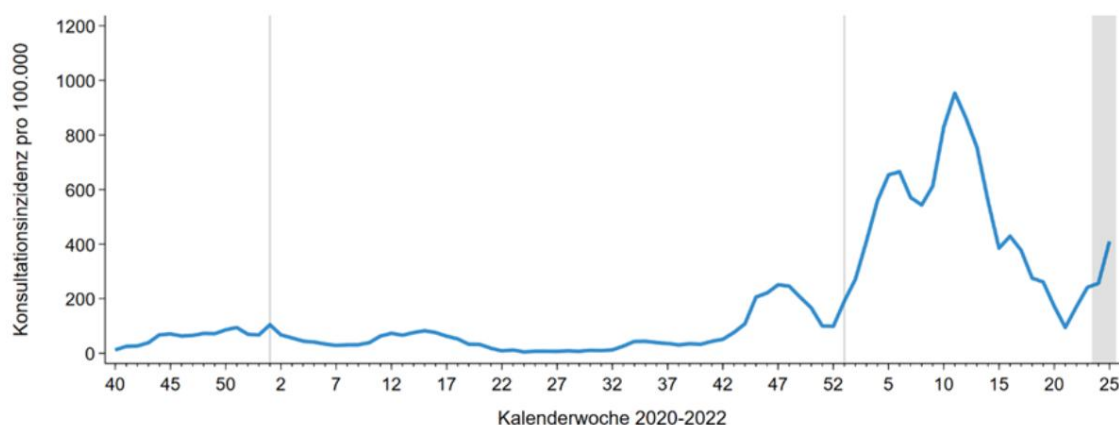
year-olds, influenza viruses in the age group of school children and SARS-CoV-2 in particular in adults. Among 15 to 34 year olds and 35 to 59 year olds, the SARS-CoV-2 positive rate was 33% and 28%, respectively. Omicron's share among SARS-CoV-2

Verification is still 100% (as of June 28, 2022).

**Consultations for ARE with COVID-19:** Using the ICD-10 code-based SEEDARE module from AGI, the incidence of consultations for a new-onset acute respiratory illness (ICD-10

Codes J00 - J22, J44.0, B34.9) with additional COVID-19 diagnosis (ICD-10 code U07.1) calculated (COVID-ARE physician consultations) ([https://www.rki.de/DE/Content/Infekt/EpidBull/Archive/2021/30/Art\\_01.html](https://www.rki.de/DE/Content/Infekt/EpidBull/Archive/2021/30/Art_01.html)).

After the number of doctor consultations due to COVID-ARE had decreased since week 12/2022, an overall increase in the values can be observed since week 22/2022. In week 25/2022 there were approx. 410 COVID-ARE doctor consultations/100,000 inhabitants (Figure 8). This corresponds to a total of around 340,000 doctor consultations for COVID-ARE in Germany. The number of doctor consultations for COVID-ARE increased significantly in week 25/2022 in all age groups under 80 years of age, among those aged 80 and over the values remained stable compared to the previous week. With 28% of doctor visits for ARE with COVID-19 diagnosis of all doctor visits for ARE (340,000 out of 1,200,000), this proportion is of a comparable order of magnitude as the proportion of SARS-CoV-2-positive samples in adults between the ages of 15 and 59 years (33% and 28%) in the virological sentinel surveillance of the AGI.



**Figure 8:** Weekly incidence of doctor consultations for newly occurring ARE (ICD-10 codes J00 - J22, J44.0, B34.9) with additional COVID-19 diagnosis (ICD-10 code U07.1!), from Week 40/2020 to week 25/2022. Late registrations may result in changes for the area marked in gray.

### 1.6.3. Registration of acute respiratory diseases in the inpatient area

In the ICD-10 code-based hospital surveillance (ICOSARI) of severe acute respiratory infections (SARI) (ICD-10 codes J09 to J22: influenza, pneumonia or other acute lower respiratory tract infections), newly admitted patients are registered and patients with an ICD-10 code for SARI in the DRG main diagnosis, including those still hospitalized.

The number of SARI cases fell slightly overall in week 25/2022, with the number of SARI cases among 5 to 14 year olds, 60 to 79 year olds and those aged 80 and over increased slightly or remained stable. In the other age groups, the number of SARI cases has decreased. A low level is still observed overall and in all age groups, but slightly more cases are currently observed in the age groups 60 and over than in most previous seasons (Figure 9, red line). For the first time, there was no higher disease burden from severe respiratory infections in the inpatient area during the fifth COVID-19 wave (omicron variant) (Figure 9, red line). In contrast, the previous waves had each led to a significant increase in the number of cases in the inpatient area, despite the strict measures against COVID-19 (Figure 9, red and yellow lines).

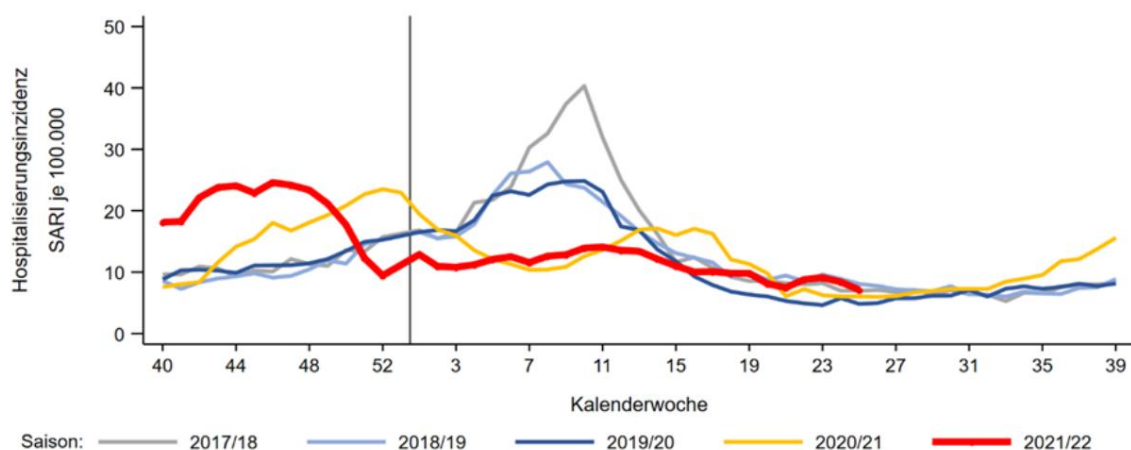


Figure 9: Weekly incidence of newly hospitalized SARI cases (ICD-10 codes J09-J22 in DRG main diagnosis), including patients who are still hospitalized, in the 2017/18 to 2021/22 seasons up to the KW 25/2022, data from 71 syndromic hospital surveillance clinics. The vertical line marks the turn of the year. In years with week 52, the value for week 53 is shown as the mean of week 52 and week 1. For the last few weeks you can register by late there are still changes.

The incidence values for SARI cases requiring intensive care are the first COVID-19 wave (dark blue line, peak in week 13/2020), the second and third waves (yellow line, peak in week 52/2020 and week 13 to 17/2021 ) and the fourth wave (red line, peak in week 48/2021) are clearly visible (Figure 10).

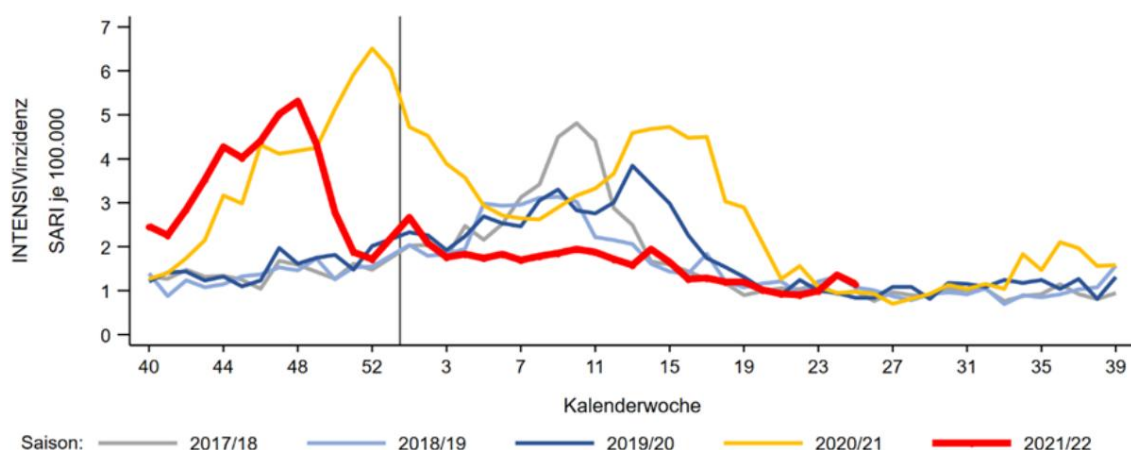
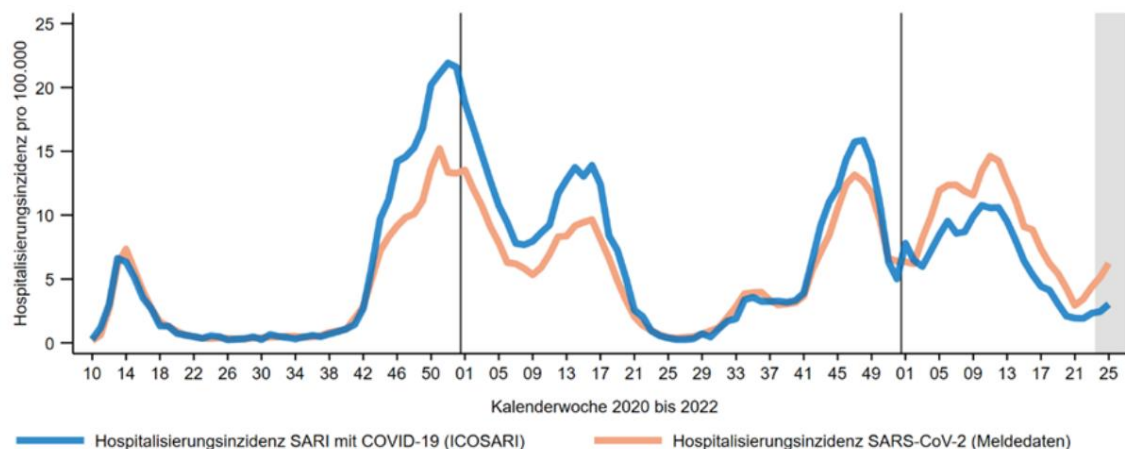


Figure 10: Weekly incidence of newly hospitalized SARI cases (ICD-10 codes J09-J22 in DRG main diagnosis) with intensive care, including patients still hospitalized, in the 2017/18 to 2021/22 seasons, to for week 25/2022, data from 71 syndromic hospital surveillance clinics. The vertical line marks the turn of the year. In years with week 52, the value for week 53 is shown as the mean of week 52 and week 1. Late registrations may result in changes for the last few weeks.

The burden of disease from SARI patients requiring intensive care was significantly higher, especially in the second and fourth COVID-19 waves, than even in very strong flu waves before the pandemic (grey line, peak in week 10/2018 during the 2017/18 flu wave). In contrast, the overall incidence of SARI cases treated in intensive care during the fifth wave was mostly below the values of the previous seasons. In week 24/2022, a slight increase in the number of SARI cases treated in intensive care was observed, the numbers are still at the low level that is usually observed during the summer months (Figure 10).

**SARI with COVID-19:** The ICOSARI system is used to calculate the incidence of cases treated in hospital with severe acute respiratory infection and COVID-19 (COVID-SARI) (<https://www.medrxiv.org/content/10.1101/2022.02.11.22269594v1>). This estimate includes cases that received an ICD-10 code for SARI in the DRG primary or secondary diagnosis, as well as a COVID-19 diagnosis. Compared to the reporting system, higher values were determined in the high incidence phases - such as the second, third and fourth COVID-19 wave. In the fifth wave, the hospitalization incidence of the reported data exceeds the COVID SARI hospitalization incidence because the reported data increasingly also includes cases reported to the RKI in which the SARS-CoV-2 infection is not the cause of the hospital admission (see also Section 1.7.4). In week 25/2022 there was a significant increase in new hospital admissions due to COVID-SARI. In week 25/2022 there were about 3.0 hospitalizations due to COVID-SARI/100,000 inhabitants (Figure 11). This corresponds to a total of around 2,500 new hospital admissions due to COVID-SARI in Germany.



**Figure 11: Weekly incidence of newly hospitalized SARI cases (ICD-10 codes J09-J22 in DRG main or secondary diagnosis) with an additional COVID-19 diagnosis (ICD-10 code U07.1), including patients who are still hospitalized, from week 10/2020 to week 25/2022, data from 71 clinics of the syndromic hospital surveillance ICOSARI in comparison to the SARS-CoV-2 hospitalization incidence from the data of the reporting system. For the area marked in gray, changes in the number of cases are to be expected in the coming weeks.**

After a short phase with stable values for the COVID-SARI hospitalization incidence in the last few weeks, there was a significant increase in the number of cases in week 25/2022, especially for the age groups under 15 years and over 60 years (Figure 12). The course of the incidence in the under 15-year-olds should be interpreted with caution due to the very small number of cases. The 80-Older people are still the most affected by severe illnesses that have to be treated in hospital. In week 25/2022 there were about 19 hospitalizations due to COVID-SARI/100,000 inhabitants in the age group over 80 years.



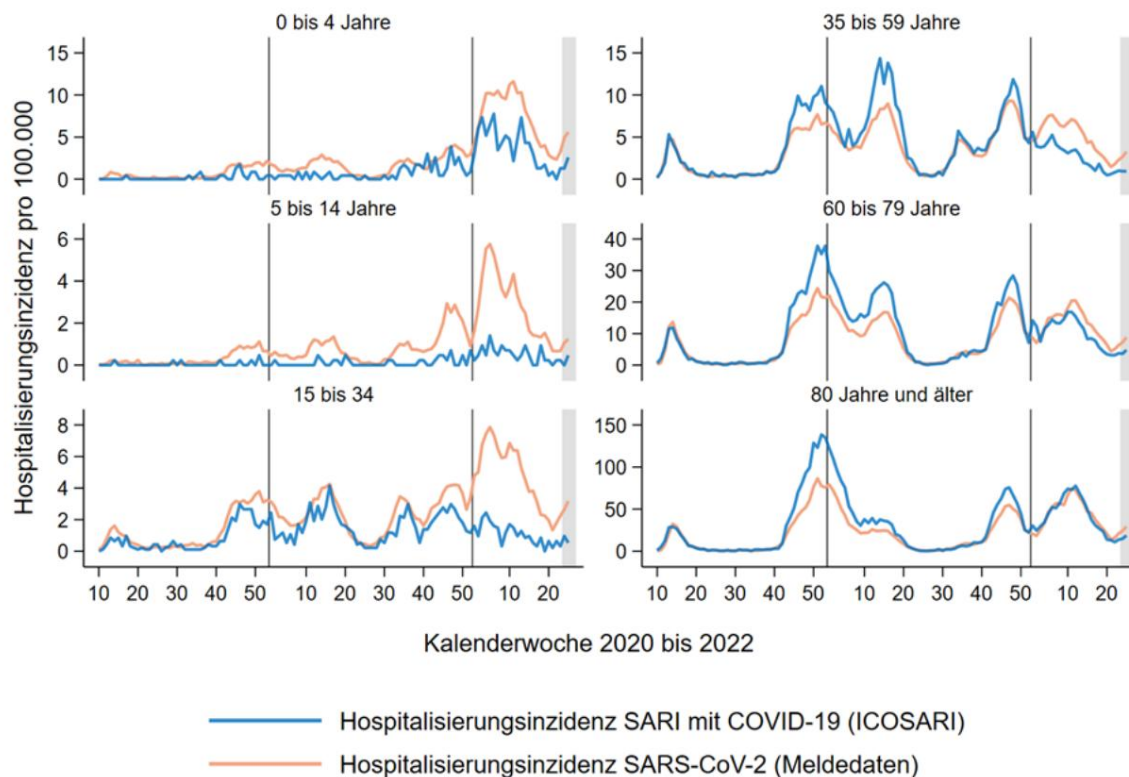


Figure 12: Weekly incidence by age group of newly hospitalized SARI cases (ICD-10 codes J09-J22 in DRG main or secondary diagnosis) with an additional COVID-19 diagnosis (ICD-10 code U07.1!), including patients who are still hospitalized, from week 10/2020 to week 25/2022, data from 71 clinics of the syndromic hospital surveillance ICOSARI in comparison to the SARS-CoV-2 hospitalization incidence from the data of the reporting system. For reasons of clarity, the y-axis is scaled differently for the age groups. For the area marked in gray, changes in the number of cases are to be expected in the coming weeks.

## 1.7. Further data sources on the aspect of hospitalization

### 1.7.1. Hospitalizations in the registration data

Clinical information was available for 8,942,112 (31.9%) of the reported Covid-19 cases. Due to the incomplete collection of clinical data, e.g. g. for hospitalization, the case numbers listed below represent a minimum figure. Since July 13, 2021 (MW 28/2021), doctors have also had to report the admission of COVID-19 cases to the hospital to the health department, not just the suspicion illness and death related to COVID-19. The corresponding data is available at [www.rki.de/covid-19-tabelle-clinical-aspects](http://www.rki.de/covid-19-tabelle-clinical-aspects).

Figure 13 and Figure 14 show the course of the hospitalization incidence in the reporting data over time. Figure 13 shows the absolute number of newly hospitalized cases in the respective reporting week, stratified by age group. The data is reported according to the registration date, i.e. the date on which the health department electronically recorded the case, but not according to the hospitalization date. It should be noted that in all age groups cases are still hospitalized one to two weeks after the diagnosis and corresponding follow-up transfers must be expected. The increase in the number of hospitalized cases, which has been apparent in all age groups since MW 01/2022, but especially among the 60 to 79 and over 80 year olds, has passed the peak in MW 11/2022. A decrease was observed between MW 11 and MW 20, but a renewed increase since MW 21. The median age of hospitalized cases fell to 56 years in mid-year 03/2022, was 73 years for several weeks and is now falling slightly again. In MW 25/2022 it was 71 years.

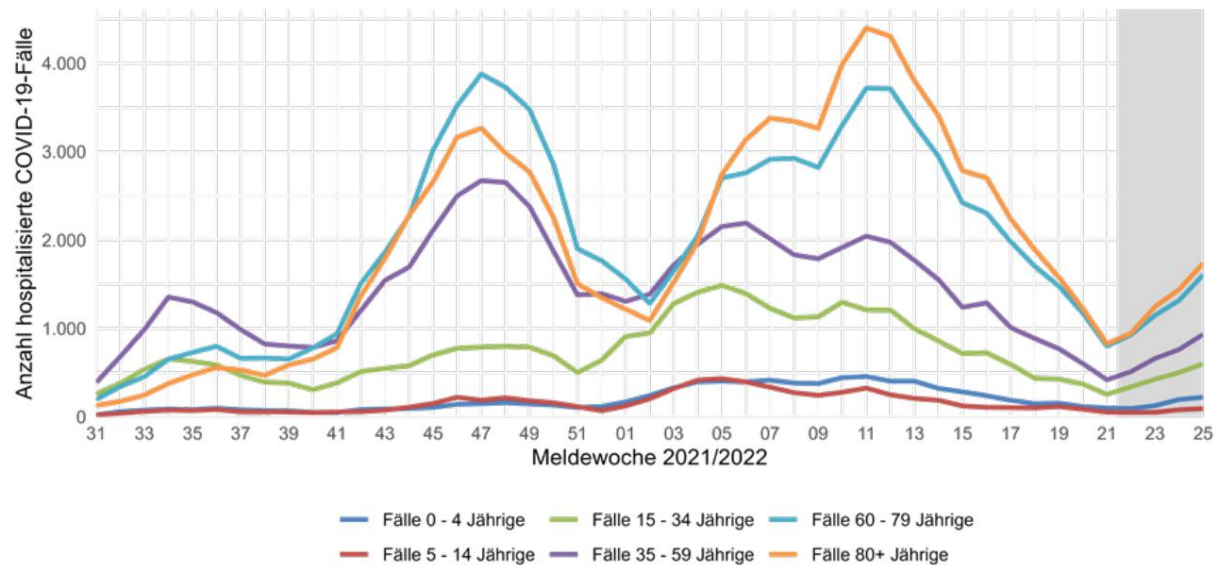


Figure 13: Representation of the number of newly hospitalized COVID-19 cases in Germany by age group from MW 31/2021 (data as of June 29, 2022, 00:00). For the area marked in gray there is still a considerable amount of post-transmissions and an increase in the number is to be expected.

Figure 14 shows the hospitalization incidence in the respective age group instead of the absolute number of hospitalized cases. A sustained increase since MW 21 can also be observed here. This increase is strongest in the age group over 80-year olds.

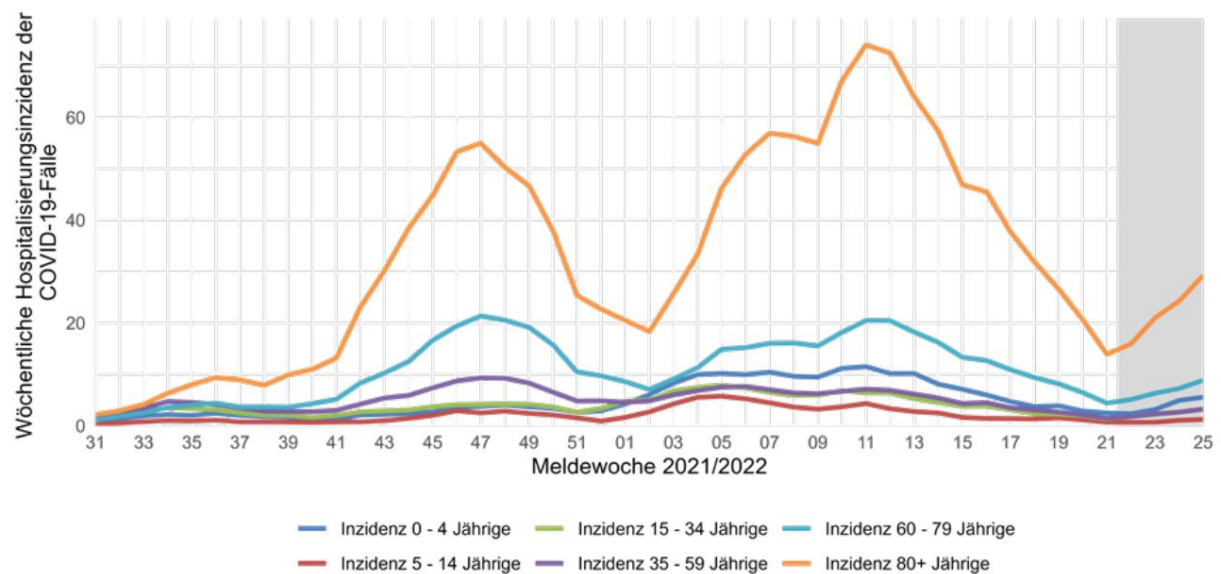


Figure 14: Weekly incidence of hospitalized COVID-19 cases in Germany by age group from MW 31/2021 (data status June 29, 2022, 00:00). For the area marked in gray there is still a considerable amount of post-transmissions and an increase in incidence is to be expected

### 1.7.2. Adjusted 7-day hospitalization incidence

There is a delay between the start of the hospital stay of a COVID-19 case and the time at which this information is received by the RKI. In order to be able to better assess the trend in the number of hospitalizations and the 7-day hospitalization incidence, the reported hospitalization incidence is supplemented by an extrapolation of the expected number of hospitalizations reported with a delay (modified variant of the nowcasting calculation for the 7-

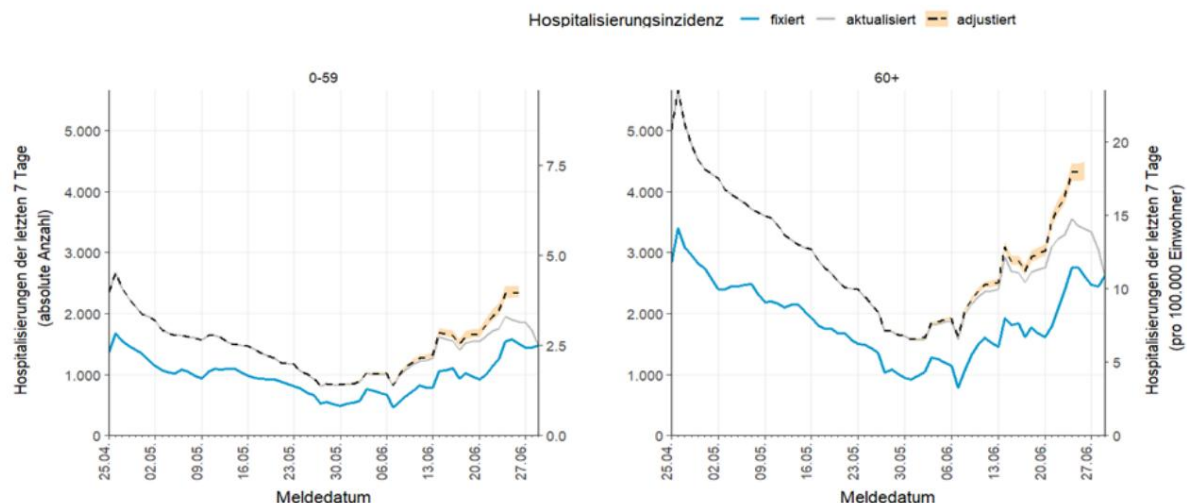
Day incidence, original calculation see here: [https://www.rki.de/DE/](https://www.rki.de/DE/Content/InfAZ/N/Neuartigs_Coronavirus/Projekte_RKI/Nowcasting.html)2)

[Content/InfAZ/N/Neuartigs\\_Coronavirus/Projekte\\_RKI/Nowcasting.html\)2](https://www.rki.de/DE/Content/InfAZ/N/Neuartigs_Coronavirus/Projekte_RKI/Nowcasting.html)2)

In Figure 15, the blue line shows the course of the number of hospitalizations (fixed values) reported on a daily basis in the age groups 0 to 59 years and over 60 years. The gray line shows the course of all hospitalizations known to the RKI with the current data (updated values). The black dashed line with the orange area shows an extrapolation that contains the course including the information on further hospitalizations to be expected in the next few days (adjusted values). The associated value of the 7-day hospitalization incidence can be read on the second y-axis on the right. Both with the 0-

After the significant decrease in the adjusted hospitalization incidence at the end of April, a renewed increase was determined for both the 59-year-olds and the 60-year-olds and older, which was probably due to the late registrations after the Easter holidays, which can also be seen in the sharp increase in the fixed values. Since the beginning of May, the adjusted incidence of hospitalization has fallen and is now rising again after a short phase of stagnation, still more strongly in the age group over 60 than in the age group from 0 to 59 years. In the last few days it seems

a slight plateau emerge. Whether this trend will stabilize can only be seen in the next few weeks be rated.



**Figure 15: Reported 7-day hospitalization incidence (grey line) and estimate of the adjusted hospitalization incidence taking into account hospitalizations reported with a delay (black dashed line with the estimation range indicated in orange) for the age groups 0-59 years and over 60 years. The scales indicate the respective absolute number (y-axis, left) and the proportion per 100,000 inhabitants (y-axis, right). The daily reported hospitalization incidence is represented by the blue line (fixed values). (Data status 06/29/2022, 00:00)**

<sup>2</sup> The results of this adjustment do not replace the daily reporting of the 7-day hospitalization incidence according to § 28a IfSG. Since December 2nd, 2021, they have also been reported Monday to Friday in the situation report and under COVID-19 Trends and data published at [www.rki.de/inzidenzen](https://www.rki.de/inzidenzen). The adjustment should allow a better classification of the current trend in the number of hospitalized and the 7-day hospitalization incidence. Our focus here is on the trend over the last few weeks, with daily fluctuations playing a subordinate role. The daily provision of the RKI-Nowcast is also available in addition to several different models for the adjusted hospitalization incidences on the comparison platform operated at the Karlsruhe Institute of Technology: <https://covid19nowcasthub.de/>

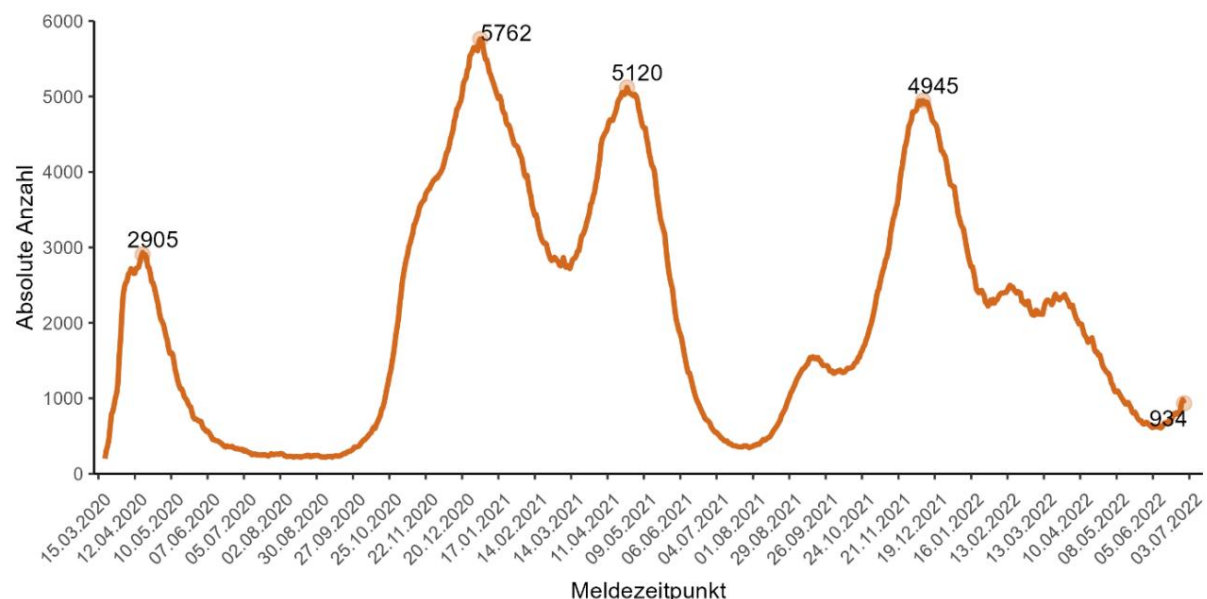
### 1.7.3. Data from the intensive care register

The RKI operates the DIVI intensive care register (<https://www.intensivregister.de>) with advice from the German Interdisciplinary Association for Intensive Care and Emergency Medicine (DIVI). Registered

Number of cases of COVID-19 patients treated in intensive care and

Treatment and bed capacities of around 1,300 acute care hospitals in Germany. The intensive care register thus enables bottlenecks in intensive care medical care to be identified in a regional and temporal comparison during the pandemic and beyond. It thus creates a valuable basis for reacting and for data-supported action control in real time. According to the [Intensive Register Ordinance](#), since April 16, 2020 reporting is mandatory for all hospital locations with intensive care beds.

Figure 16 shows the absolute number of COVID-19 cases treated in intensive care medicine reported in the intensive care register as of the respective observation day. A daily report on the situation of intensive care bed capacity in Germany is published at <https://www.intensivregister.de/#/aktuelle-lage/reports>.



**Figure 16: Number of COVID-19 cases treated in intensive care medicine reported in the intensive care register on the respective observation day (as of June 29, 2022, 00:00). When interpreting the curve in March/April 2020, it should be noted that not all reporting areas have yet been registered in the register. In general, the underlying group of COVID-19 intensive care patients can change from day to day (transfers and new admissions), while the number of cases may remain the same.**

After the fourth wave in October to December 2021, COVID-19 occupancy in intensive care units and free ICU bed capacity remained at a stable level for a long time during the fifth wave. Since April 2022, the COVID-19 occupancy in intensive care units has been steadily declining, and is now showing an increasing trend (Figure 17). The proportion of free ICU beds in the total number of ICU beds that can be operated should be above 10%, which is considered the limit of the hospitals' ability to react and which should not be undershot. This share has been stable since the beginning of the year and is currently around 15%.

In the course of a change in the vaccination query in the intensive care register, the vaccination status of the COVID-19 Patients in the intensive care unit are temporarily not made available. As soon as enough data has been collected for a stable evaluation, the numbers from the new query will be reported here as usual.

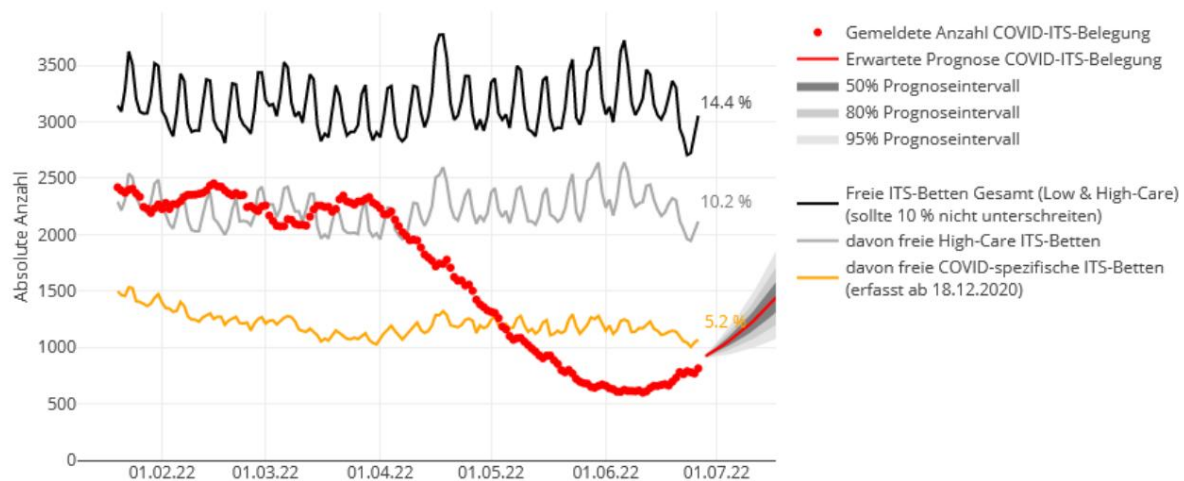


Figure 17: 20-day forecast of intensive care bed occupancy with COVID-19 patients with previous occupancy development (red dots) and history of the available free ICU bed capacity for all patients and patents (COVID and non-Covid, black line), as well of which free high-care beds (grey line) and free COVID-specific ICU beds (orange).

#### 1.7.4. Interpretation of the various aspects of disease severity and ICU burden

In order to assess the various aspects, the different perspectives of the individual survey systems must be taken into account. While in the hospitalization incidence based on the reported cases, all cases that are **newly admitted to the hospital** are considered

and have a **laboratory-confirmed SARS-CoV-2 infection**, only those cases newly admitted in the respective week are considered in syndromic surveillance in which, in addition to the COVID-19 diagnosis, a **severe acute respiratory disease** was also diagnosed. In the intensive care register, the report shows in particular the **current occupancy** of the intensive care units with patients with COVID-19. Under the very high

Infection pressure during the omicron wave became the proportion of the pandemic for the first time

Persons who had positive SARS-CoV-2 evidence but whose urgent inpatient or intensive care treatment became necessary due to another illness were higher, so that the SARS-CoV-2 infection was not necessarily the cause or the sole decisive factor for hospitalization. These cases were and are counted both in the hospitalization incidence of the notification data and in the occupancy of intensive care beds, but not in the syndromic surveillance ICOSARI. Figure 11 shows that, particularly in the age groups up to 59 years, the hospitalization incidence in the reporting data during the omicron wave was significantly higher than the incidence of COVID-SARI cases in syndromic surveillance. In contrast, in the older age groups, which make up the majority of hospitalized patients (please note the scaling), the COVID-SARI hospitalization incidence was at a comparable level to the hospitalization incidence of the reported cases.

In the overall view, the information on the incidence of hospitalization from the registration data, the COVID-SARI hospitalization incidence and the occupancy capacities in the intensive care register complement each other in order to be able to assess the situation in difficult cases and the utilization of capacities in the intensive care area. There is currently a renewed increase in hospitalized COVID-19 cases, especially in the age group 60 and over, and an increase in COVID-19 occupancy in intensive care units. However, the number of new Covid-19 patients admitted to hospital due to an acute severe respiratory infection remains low overall, with a clear upward trend in the age group over 60-

year olds (Figure 12).



## 1.8. Deaths, mortality surveillance, EuroMomo

Figure 18 shows reported COVID-19 deaths by week of death.

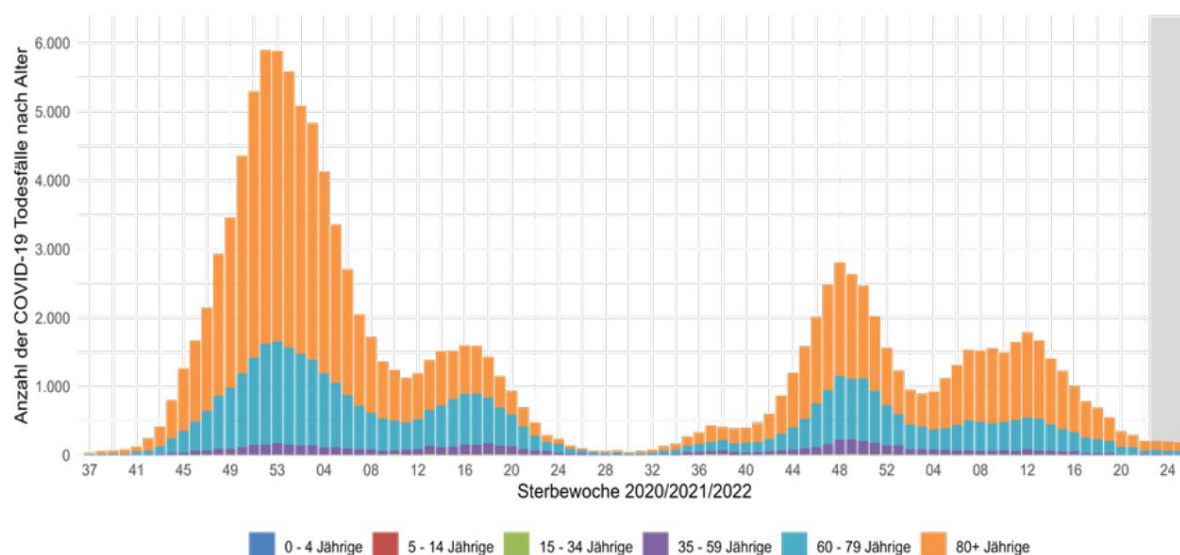
Deaths usually do not occur until 2 to 3 weeks after infection. Deaths will be reported later for the 23rd to 25th month of 2022. In the fifth wave, despite the mostly comparatively mild course of the disease, there was an increase in deaths due to the high number of infections. Between 1,100 and 1,800 deaths with information on age were transmitted weekly in the 05 to 14/2022 period, taking late reports into account. From MW 13/2022, a decline was observed here, which has flattened out significantly in the past three weeks, since MW 23. In MW 25/2022, the number of deaths with information on age was 185. Compared to the fixed value of the previous week (125 deaths) – without taking into account late reports – the value in MW 25 is already showing an upward trend.

Among the reported deaths since week 10/2020, 119,195 (85%) people were 70 years and older, the median age in week 24/2020 was 83 years. In contrast, the proportion of those over 70 in the total number of reported COVID-19 cases is around 7%. The median age of the reported deaths has changed little in previous COVID-19 waves. It was 83 in the peak weeks of the first wave, 84 in the second wave in late 2020, 78 in the third wave in spring 2021, 81 in the fourth wave in late 2021, and 84 during the peak weeks of the fifth wave years.

Further information is available at:

[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Projekte\\_RKI/COVID](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Projekte_RKI/COVID)

[19 Todesfaelle.html](#). Notes on the mortality data in EuroMOMO and Destatis can be found here in the footnote. <sup>3</sup>



**Figure 18: COVID-19 deaths reported to the RKI by week of death (week 37/2020 - week 25/2022: 130,368 COVID-19 Deaths with information on age and date of death, 06/29/2022, 0:00 a.m.). Subsequent transmissions are to be expected, particularly for the last three weeks.**

<sup>3</sup> EuroMOMO and Destatis: A total of 27 European countries or regions provide the European EuroMOMO project (European monitoring of excess mortality for public health action) with official mortality data on a weekly basis, so that on this basis the so-called excess mortality or excess mortality (regardless of the cause of death) recorded and tracked (<https://www.euromomo.eu/>). Since MW 15/2021, Germany has also been providing retrospective mortality data for all federal states. The representation takes place in the form of graphics and maps (<https://www.euromomo.eu/graphs-and-maps/>). The daily death figures are also registered on the website of the Federal Statistical Office: [https://service.destatis.de/DE/bevoelkerung/sterbefallzahlen\\_bundeslaender.html](https://service.destatis.de/DE/bevoelkerung/sterbefallzahlen_bundeslaender.html). The delay in reporting deaths is compensated for by an estimate. There is a parallelism over time between the current increase in the number of reported COVID-19 deaths and the higher number of deaths

## 2. Vaccination

### 2.1. Digital vaccination rate monitoring (DIM): Status of vaccination rates according to reporting data

The reporting of all COVID-19 vaccinations to the RKI is required by law for all service providers in Section 4 of the Coronavirus Vaccination Ordinance.

The following status results from the vaccination notification data: Up to the vaccination day June 28, 2022 (data status June 29, 2022), a total of 182,731,378 COVID-19 vaccinations were administered in Germany; 64,697,198 people (77.8% of the population) have been vaccinated at least once and 63,342,616 people (76.2%) have received primary immunization. In addition, 51,246,810 people (61.6%) have received a first booster dose and 5,738,863 (6.9%) people have received a second booster shot to date. After a maximum of 7.7 million vaccinations in week 50/2021, the number of weekly vaccinations has been declining since week 2/2022 (around 4.5 million) to week 16 (around 386,000) and has been fluctuating since week 2021 17 at a low level between around 180,000 (week 23) and 540,000 (week 17) vaccinations. Currently, the majority of vaccinations given are second boosters, while primary vaccinations are the least commonly given. The proportions of those vaccinated vary according to age: in the age group over 60 years of age, the proportion of those who have been vaccinated at least once, those who have received basic immunization and those who have had one or two booster vaccinations is highest (table with the reported vaccination rates nationwide and by state). Around 78% (around 4.1 million people) of the 5 to 11 year olds and 26% (around 1.2 million people) of 12 to 17 year olds. In the 18-59 age group, 16% (around 7.3 million people) and in the 60+ age group around 8% (around 1.9 million humans) not yet vaccinated. In the age group from 60 years, an increasing use of the second booster vaccination has been observed since week 06/2022 (Figure 19).

Table 2 gives an overview of the total number of vaccinations carried out by vaccination center nationwide and by federal state.

As of June 29, 2022, the vaccination rates of the federal states differ by up to 25 percentage points for those who have been vaccinated at least once, by up to 23 percentage points for those who have had basic immunization, by up to 20 percentage points for those vaccinated with the first booster vaccination and by up to 12 percentage points for the second booster vaccination. The highest rates for the two vaccinations of the basic immunization were achieved in Bremen and in Schleswig-Holstein for the two booster vaccinations. For all four vaccinations, the lowest rates are in Saxony ([www.rki.de/covid-19-](http://www.rki.de/covid-19-vaccination-rates)

[vaccination rates](#)).<sup>5</sup>

<sup>4</sup> The vaccination process began in all federal states in vaccination centers, mobile teams and some hospitals on December 27th, 2020. The data is transmitted in different ways: Vaccination centres, health authorities, mobile vaccination teams, hospitals, pharmacies as well as companies and occupational medicine transmit pseudonymised individual vaccination data via the data collection system for digital vaccination rate monitoring (DIM) provided by the RKI in cooperation with Bundesdruckerei. The National Association of Statutory Health Insurance Physicians (KBV) has provided a reporting portal for all vaccinations of contract doctors since April 6th, 2021 and the private medical accounting offices (PVS) have provided a portal for all private doctors since June 7th, 2021, of which aggregated data reach the RKI on a daily basis. The data transmitted via the KBV portal by 09/30/21 was replaced by the accounting data from 16 of the 17 associations of statutory health insurance physicians. It was only for Brandenburg that the data could not be exchanged, since unspecific billing numbers are used here in some cases, from which neither the vaccine nor the vaccine dose can be derived.

<sup>5</sup> Limitations: Only aggregated data with information on the postal code of the resident doctors is available Practice, about the vaccine, about the vaccine dose and only with the age classifications 5-11 years (from week 50), 12-17 years, 18-59 years and ≥60 years (in the KBV but without vaccine reference). Therefore, the vaccination process can only be reported reliably in these aggregation levels (cf. daily table with the reported vaccination rates nationwide and by state). The vaccination progress in differentiated age groups and also a representation of vaccination rates according to districts cannot be shown with the available data. A consistent regional assignment is only possible according to the vaccination center, but not according to the place of residence of the vaccinated. This assignment must also be taken into account when interpreting the federal state vaccination rates. Since the vaccination data allocated regionally according to the place of vaccination for calculating the vaccination rate

The proportions of those vaccinated vary according to age: in the age group over 60 years of age, the proportion of those who have been vaccinated at least once, those who have received basic immunization and those who have had one or two booster vaccinations is highest ([table with the reported vaccination rates nationwide and by state](#)). Around 78% (around 4.1 million people) of the 5 to 11 year olds and 26% (around 1.2 million people) of 12 to 17 year olds. In the 18-59 age group, 16% (around 7.3 million people) and in the 60+ age group around 8% (around 1.9 million humans) not yet vaccinated. In the age group from 60 years, an increasing use of the second booster vaccination has been observed since week 06/2022 (Figure 19).

**Table 2: COVID-19 vaccinations submitted to the RKI by vaccination center per federal state (data as of June 29, 2022).**

Federal State	vaccination centers,				
	Mobile Teams, hospitals, health authorities	medical practices (Contract doctors and private doctors)	Company medical practices	pharmacies	Dental practices
Baden-Wuerttemberg	10.573.761	12.452.571	566.577	9.275	57
Bayern	13.884.255	13.208.042	631.691	9.398	230
Berlin	3.768.271	4.248.325	135.858	10.631	28
Brandenburg	2.064.956	2.753.603	33.661	1.474	5
Bremen	1.062.533	611.415	45.512	517	19
Hamburg	1.845.390	2.425.598	184.059	3.594	0
Hesse	6.347.667	6.955.247	368.289	6.175	41
Mecklenburg Western Pomerania	1.572.554	1.843.801	21.957	1.000	7
Lower Saxony	7.992.813	10.038.599	369.163	13.222	215
North Rhine-Westphalia	17.140.048	23.503.514	1.009.717	54.132	75
Rhineland-Palatinate	4.006.540	4.846.640	235.386	6.763	0
Saarland	1.101.823	1.194.423	48.104	2.537	6
Saxony	3.529.494	3.702.575	99.929	4.053	43
Saxony-Anhalt	2.073.369	2.357.734	50.224	2.676	0
Schleswig-Holstein	3.143.724	3.761.077	127.853	4.328	3
Thuringia	2.358.350	1.737.180	31.657	445	28
In total	<b>82.465.548</b>	<b>95.640.344</b>	<b>3.959.637</b>	<b>130.220</b>	<b>757</b>

There are five vaccines available, some of which have been recommended to different groups of people over time (see [current recommendations of the Standing Vaccination Commission](#) [https://www.rki.de/DE/Content/Infekt/Impfen/ImpfungenAZ/COVID\\_19/Impfzettel-Zusammenfassung.html](https://www.rki.de/DE/Content/Infekt/Impfen/ImpfungenAZ/COVID_19/Impfzettel-Zusammenfassung.html)). Of the vaccine doses delivered by the end of week 25/2022, a total of 89% had been vaccinated by June 28, 2022. For the respective vaccines, the proportions were 91% for Comirnaty (BioNTech/Pfizer), 87% for Spikevax (Moderna)<sup>6</sup>, 89% for Vaxzevria (AstraZeneca), 69% for Janssen & Johnson and 8% for Nuvaxovid (Novavax).

The RKI evaluates all vaccination data that is transmitted to it in accordance with Section 4 of the Vaccination Ordinance. As in other reporting systems, a certain under-recording of the vaccination rates recorded via the digital vaccination rate monitoring is assumed. The reported DIM notification data are therefore to be understood as minimum vaccination rates. Extrapolations were made in previous

*of a federal state are related to the respective resident population, proportions of >100% can also be calculated. Furthermore, vagueness in the allocation of vaccination data must be taken into account, in particular due to the different reporting channels used by company doctors: they can either use DIM under their own ID or report via vaccination centers with their ID, or they can also transmit their data via the KBV portal.*

<sup>6</sup> Booster vaccinations with Moderna were considered as whole vaccine doses.

Weekly reports presented (see [weekly report from 11.11.2021](#) and [weekly report from December 23, 2021](#)). With the retrospective inclusion of the billing data of the health insurance companies (currently up to the data status of December 31, 2021), the completeness of the recording has increased.

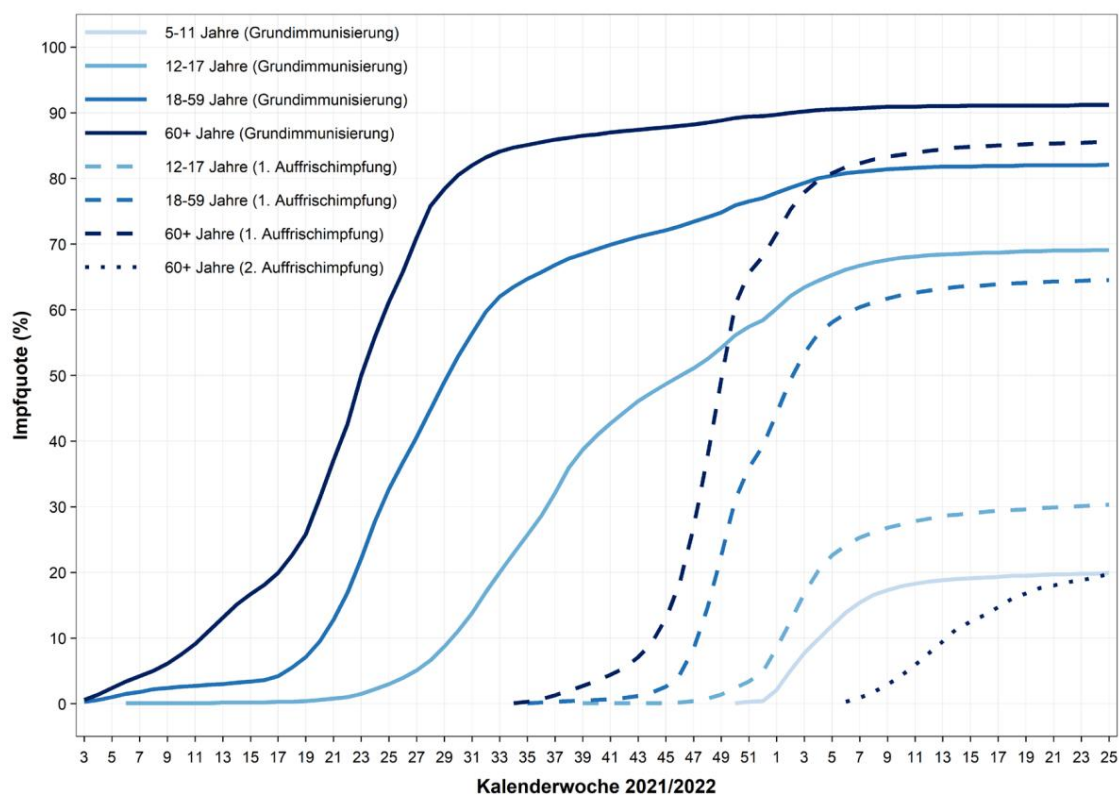


Figure 19: Vaccination rate (%) for primary immunization and for booster vaccinations by age group over time (data as of 06/29/2022).

## 2.2. Effectiveness of the COVID-19 vaccination

Since May 5th, 2022, the COVID-19 weekly report of the RKI no longer reports regular information on the effectiveness of the COVID-19 vaccination. Likewise, the underlying tables under

[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Daten/Impfeffektivitaet.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Daten/Impfeffektivitaet.html) no longer updated weekly. Instead, a separate report on the subject of COVID-19 vaccination/vaccination effectiveness will be published shortly, which will allow a more detailed consideration of individual aspects than is possible in the weekly report.

### 3. SARS-CoV-2 Laboratory Testing and Variants of Concern (VOC)

To record the number of tests, data from different data sources transmitted by university clinics, research institutions and clinical and outpatient laboratories are combined. The recording is based on a voluntary notification by the laboratories and takes place via a web-based platform (RKI test laboratory query) and in cooperation with the laboratory-based surveillance SARS-CoV-2 (an extension of the antibiotic resistance surveillance, ARS) established at the RKI, the network for respiratory viruses (RespVir) and the query of a professional laboratory association. The data collected is a voluntary and not mandatory statement by the laboratories, so that a full record of the PCR tests for SARS-CoV-2 carried out in Germany is not available at the present time. The aggregated data published here do not allow direct comparisons with those reported

case numbers.

#### 3.1. Development of test numbers and proportion of positives

The number of PCR tests recorded since the start of testing in Germany up to and including week 25/2022, the proportion of positives and the number of transmitting laboratories are shown in Table 3 shown. Up to and including week 25/2022, 260 laboratories have registered for the RKI test laboratory query or in one of the other networks listed above and report mainly weekly after the call. Since laboratories can report or correct the tests of the past calendar weeks in the RKI test number recording, it is possible that the numbers determined will change later. It should be noted that the number of tests is not the same as the number of people tested, since e.g. B. the information on multiple testing of patients can be included (Table 3). In accordance with the increase in reported cases and the development observed in syndromic surveillance, the proportion of positives has continued to rise by around 4 percentage points within the last week or 9 percentage points since the last report to almost 50% in the 25th week. Week 2022.

From week 05/2021, the test numbers and capacities will be presented in a summary graphic (Figure 20) in the management report. The complete test numbers and capacities as well as sample backlogs since the start of recording are available for download at: <http://www.rki.de/covid-19-testzahlenvor>.

**Table 3: Number of SARS-CoV-2 PCR tests in Germany (as of June 28, 2022, 12:00 p.m.); KW=calendar week**

calendar:week	number Tests	Tested positive	Proportion of positives (%)	number of transmitting Hard work
Until finally KW15/2022	125.088.607	21.970.714		
16/2022	1.071.298	539.359	50,3	214
17/2022	1.093.326	453.117	41,4	214
18/2022	895.929	368.520	41,1	209
19/2022	804.719	307.489	38,2	208
20/2022	680.331	218.399	32,1	208
21/2022	506.048	143.827	28,4	209
22/2022	603.204	196.298	32,5	206
23/2022	628.491	260.041	41,4	205
24/2022	675.192	311.760	46,2	182
25/2022	888.502	443.230	49,9	201
total	132.935.647	25.212.754		



### 3.2. Test Capacities and Reach

In addition to the number of tests carried out, voluntary information on the daily (current) PCR test capacity and range is recorded in the RKI test number recording and by a professional laboratory association. In week 25/2022, 181 laboratories provided information on this. Taking into account all necessary resources (sampling material, test reagents, staff, etc.), this results in a real test capacity of 2,994,895 tests in week 26/2022 at the time of the query (Figure 20).

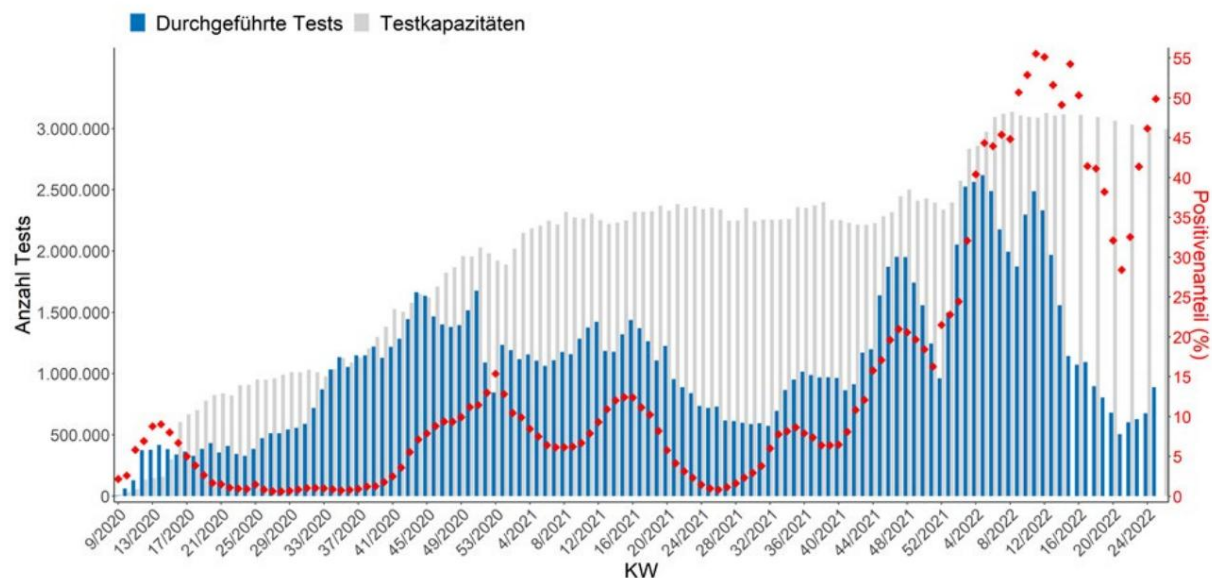


Figure 20: Number of SARS-CoV-2 PCR tests carried out and the proportion of positives as well as test capacities of the transmitting laboratories per calendar week (week), (as of June 28th, 2022, 12:00 p.m.)

### 3.3. Technical classification of the current laboratory situation in Germany

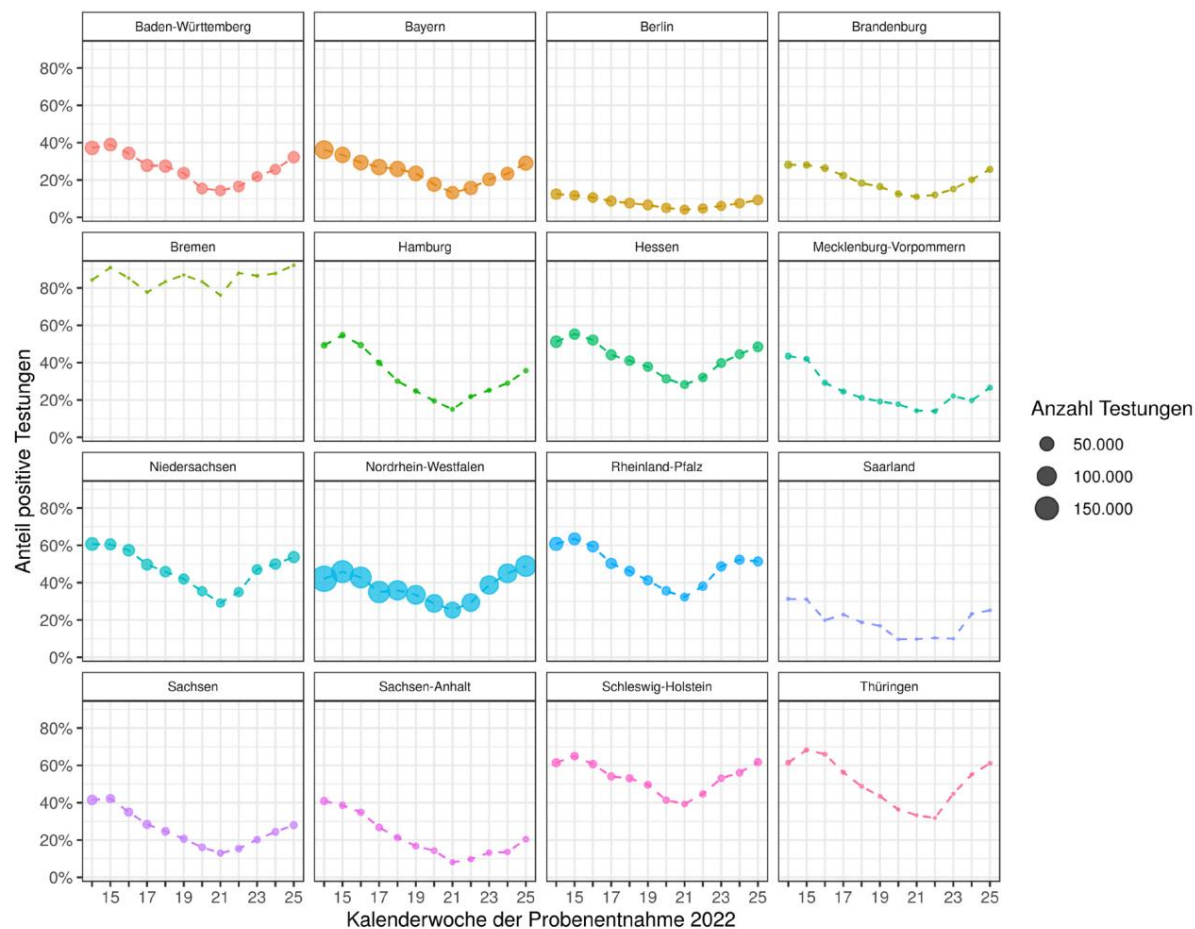
In the context of the COVID-19 pandemic, diagnostics for SARS-CoV-2 play an important role. The tests are not only indispensable for diagnostic clarification, but also play an important role in assessing epidemiological developments. Recording the tests carried out and determining the proportion of positive tests enable an assessment of the effectiveness of the test strategy. When interpreting the data, changes in the testing strategy and in the testing behavior of the population must be taken into account.

In accordance with the increase in reported cases and the observed development in syndromic surveillance, there is a further increase in the proportion of positives by 7.9 percentage points to 49.9% in the 25th week of 2022.

#### 3.3.1. Positive proportions by federal state and age groups

Further information on SARS-CoV-2 tests is collected from the 77 laboratories currently participating in the laboratory-based surveillance SARS-CoV-2, which enables stratified representations of the test numbers and positive proportions. A total of 56,468,508 SARS-CoV-2 PCR test results have been transmitted from the 77 laboratories since the start of the tests, of which 10,121,344 were positive (data status June 28, 2022). These cover around 40% of the total tests transmitted to the RKI as part of all queries and surveillance systems. Figures 21 and 22 show the results over time by state and age group. At <https://ars.rki.de/Content/COVID19/Main.aspx> includes further information on laboratory-based surveillance SARS-CoV-2 and a more detailed weekly report

further stratified representations as well as data for download.



**Figure 21: Proportion of positive PCR tests from all PCR tests transmitted as part of the laboratory-based surveillance SARS-CoV-2 by calendar week of sample collection and by federal state, taking into account the number of tests. The point size reflects the total number of samples tested per calendar week. When interpreting the data, it must be taken into account that the data is currently not representative for every federal state. The last 12 calendar weeks are shown (data status June 28, 2022; 77 transmitting laboratories).**

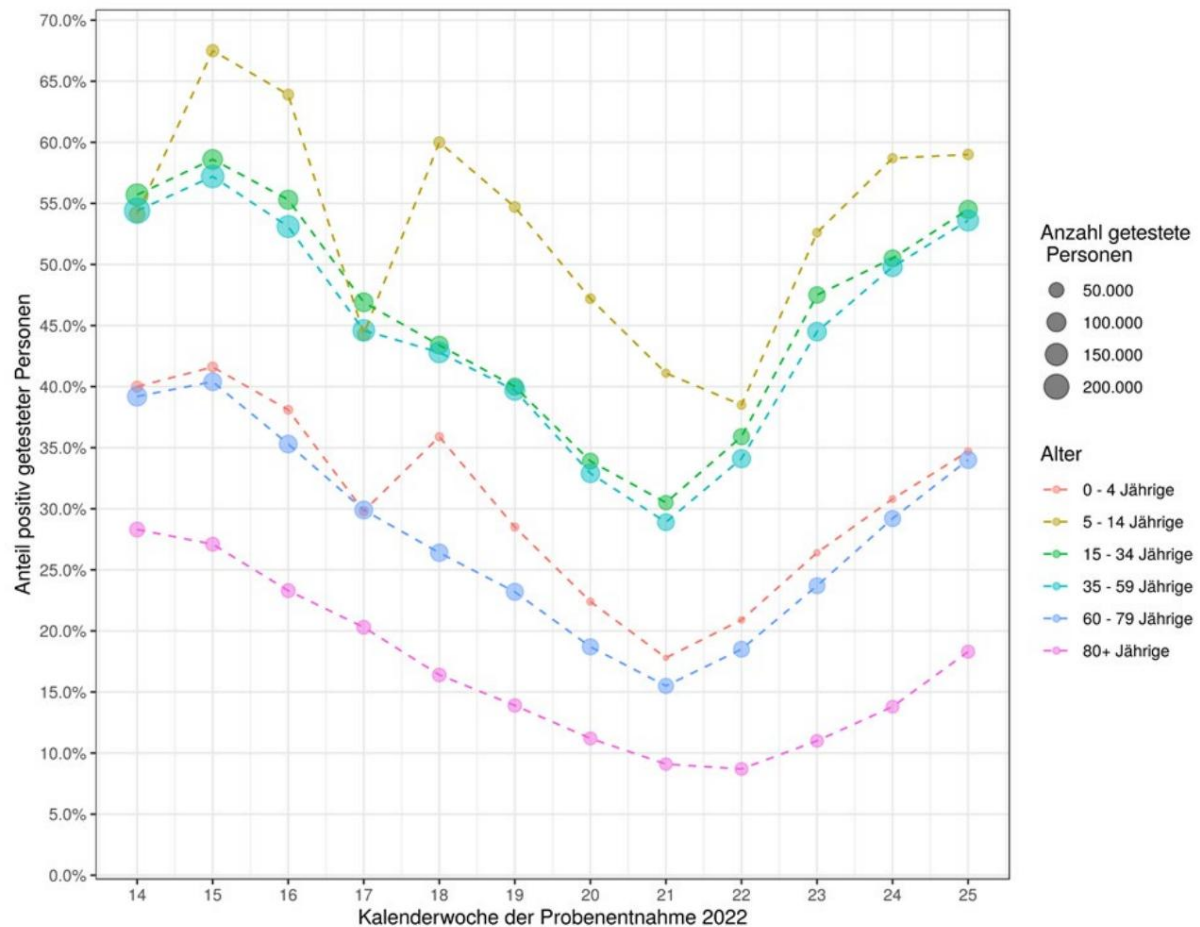


Figure 22: Percentage of people who tested positive for PCR out of all people who had been tested for PCR and who were transmitted as part of the SARS-CoV-2 laboratory-based surveillance system, by calendar week of sample collection and taking into account the number of people tested. The point size reflects the total number of people tested per calendar week. The last 12 calendar weeks are shown (data status June 28, 2022; 77 transmitting laboratories).

### 3.4. SARS-CoV-2 Variants of Concern

Since the beginning of the pandemic, various SARS-CoV 2 variants have been observed both worldwide and in Germany, including the variants of concern (VOC) Alpha (B.1.1.7), Beta (B.1.351), Gamma (P.1), Delta (B.1.617.2) and since the end of November 2021 Omicron (B.1.1.529). The definition as a VOC occurs when there is evidence of increased transmissibility, a more severe course of the disease and/or an immune evasive effect. In addition to the VOC, there is also the group of variants under observation (Variant of Interest; VOI). These have characteristic mutations associated with increased transmissibility, virulence and/or altered immune response. The RKI follows the WHO when evaluating virus variants (VOC, VOI). On the RKI website for basic [virological data](#) and [virus variants](#) you will find more [information about the SARS-CoV-2 variants and](#)

their sublines<sup>7</sup>, the nomenclature and case numbers from various data sources in Germany.

<sup>7</sup> As part of the internationally used pangolin nomenclature for SARS-CoV-2 virus variants, a number defined for individual sub-lines, including for VOC and VOI. The division into sublineages enables a more differentiated monitoring of their spread and is based on genomic changes as well as on a significant geographical accumulation. Sublines have been introduced for different virus variants, e.g. B. for the VOCs alpha (B.1.1.7; Q lines), delta (B.1.617.2; AY lines) and omicron (B.1.1.529; BA lines).

### 3.4.1. data sources

The RKI has expanded the nationwide Integrated Molecular Surveillance (IMS) systems in order to obtain a detailed overview of the occurrence and spread of specific SARS-CoV-2 mutations. In this way, new virus variants and their spread are detected at an early stage. The IMS consists of two components: (1) the whole genome sequencing of the SARS-CoV-2-positive samples and (2) the linking of the sequence data obtained with the clinical-epidemiological data, which are already forwarded to the RKI via the health authorities. As part of the IMS, the RKI evaluates the Germany-wide pooled sequence data together with the clinical-epidemiological data.

The analysis of the genome sequences includes data from the whole genome sequencing, which is carried out directly at the RKI, as well as data that is transmitted to the RKI as part of the Coronavirus Surveillance Ordinance (CorSurV). On July 1st, 2022, the CorSurv Amendment Ordinance will come into force and will allow payment for sequencing until April 30th, 2023 ([www.bundesanzeiger.de](http://www.bundesanzeiger.de) BAnz AT 28.06.2022 V1). The transmitted sequence data can in turn be assigned to two groups. **(A) Sequencing performed based on a specific clinical-epidemiological or laboratory diagnostic suspicion of anomalies, and (B) sequencing selected at random from the total occurrence of SARS-CoV-2-positive samples in the laboratories.** **Group A** contains the **event-related samples**<sup>8</sup>, **group B** forms the so-called **random sample**.

For *about half* of the whole genome sequences submitted, additional clinical epidemiological information is available from the reporting system, as it can be assigned to specific cases. The SARS-CoV-2 variant genome sequence data section

The evaluation shown is based on the above sample.

In total, the RKI currently has (data status June 20, 2022) 970,716 SARS-CoV-2

Whole genome sequences available from Germany since January 1st, 2021. For week 23/2022<sup>9</sup>

Based on the number of available genome sequences and known laboratory-confirmed infections in Germany, the proportion of SARS-CoV-2 infections that have been examined using whole genome sequencing positive samples from a total of 1.6%. Slightly more than half of this – 1.0% – is accounted for by the above sample.

In order to be able to quickly and accurately identify changes in the pathogen genome and the spread of the SARS-CoV-2 variants, a high proportion of SARS-CoV-2-positive samples should be sequenced. Integrated Molecular Surveillance (IMS) enables the early detection of new variants, but also of changes in the distribution of known variants. In particular, a high proportion of randomly selected samples that are included in the above random sample is of great importance. The random samples should be selected for the whole genome sequencing without prior suspicion of the presence of a specific variant or other peculiarities, such as clinical characteristics. Figure 23 shows the proportion of sequenced samples in the sample since January 2021, with the number of samples in each of the past few weeks amounting to several thousand.

<sup>8</sup> e.g. B. if there are indications of the presence of a VOC based on the travel history or laboratory diagnostics, reinfection, Vaccine breakthrough or evidence of an outbreak

<sup>9</sup> Due to the process-related long time it takes for the sequencing results to be transmitted to the RKI (e.g. Sending the samples to sequencing laboratories, sequencing of the samples, genome analysis) reports on the genome sequence data from the week before last. For the reporting period, those sequences are selected whose associated sampling took place in the reported week. The date of sampling corresponds approximately to the reporting date.



Figure 23: Number (green bars) and proportion (red line) of the randomly selected SARS-CoV-2 positive samples for sequencing in the COVID-19 cases of the respective calendar week in 2021/2022 (see Figure 2). For the area with a gray background, changes are to be expected due to late registrations (data status: 06/27/2022).

Both the **genome sequence data on SARS-CoV-2 variants**, i.e. **event-related samples and spot checks**, and suspected cases of VOC, which were determined and transmitted using variant-specific PCR, are included in the IfSG notification data, where they are linked to the associated clinical epidemiological data will. A large part of the genome sequence data is thus included in the IfSG reporting data.

### 3.5. SARS-CoV-2 variants distribution in Germany

The Variant of Concern (VOC) Omikron is currently the dominant SARS-CoV-2 virus in Germany. Variant. Other variants, such as the VOC Delta and before that the VOC Alpha, have been almost completely suppressed and are currently only very rarely detected.

#### 3.5.1. Genome sequence data on SARS-CoV-2 variants

The genome sequence data in this section refer to the period up to and including week 24/2022. The lines of the currently dominant VOC Omikron show different amino acid differences within the spike protein (and other virus proteins) and are recorded as BA lines. Lines BA.1 to BA.5 are shown as parent lines in Table 4 listed. A complete table from week 01/2021, in which all VOC and sub-lines are included, can be found at:

[www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Daten/VOC\\_VOI\\_Tabelle.html](http://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Daten/VOC_VOI_Tabelle.html)

Table 4: Percentages of sequenced VOC Delta Omikron BA.1 to BA.5 (incl. the respective sublines) (data status June 27, 2022).

KW 2022	The micron				
	BA.1	BA.2	BA.3	BA.4	BA.5
15	2,8 %	96,7 %	< 0,1 %	< 0,1 %	0,2 %
16	1,6 %	97,6 %	< 0,1 %	0,1 %	0,2 %
17	1,1 %	97,7 %	0 %	0,1 %	0,7 %
18	0,5 %	97,0 %	0 %	0,3 %	1,7 %
19	0,3 %	95,0 %	< 0,1 %	0,7 %	3,5 %
20	0,2 %	91,2 %	< 0,1 %	1,3 %	6,8 %
21	0,2 %	82,5 %	< 0,1 %	2,7 %	14,3 %
22	< 0,1 %	62,6 %	0 %	4,5 %	32,5 %
23	0 %	41,5 %	0 %	5,9 %	52,2 %
24	< 0,1 %	26,8 %	0 %	7,4 %	65,7 %



Table 4 lists the Omicron lines BA.1 to BA.5 including the respective sub-lines. The individual representation of all omicron sublines in Figure 24 shows the strong increase in the proportion of BA.5, which has been the dominant variant in Germany since week 23/2022; its share is 66% in week 24/2022. After BA.2 and BA.2.9, the proportion of sub-line BA.2.12.1 has also been declining since week 24/2022 and is now 4%. The proportion of BA.4 has increased to 7%.

Thus, the shares of the Omicron sublines in Germany follow the trend in many other countries.

**10** Compared to BA.1 and BA.2, the spike proteins of BA.4 and BA.5 exhibit the amino acid exchanges L452R and F486V, which are associated with increased transmissibility and/or immune escape. At the same time as these variants became widespread, a renewed increase in the number of infections has been observed since week 21/2022. The epidemiological data available to date do not suggest that infections with BA.4 or BA.5 cause more severe disease courses or proportionately more deaths than infections with BA.1 and BA.2.

In addition to the omicron sublines, recombinants of different virus variants also occur sporadically. A recombination produces a virus whose genetic material is made up of genome information from at least two different virus variants that have infected a host cell at the same time. So z. B. the recombinant virus line XD, the spike gene sequence is from omicron (BA.1), while the rest of the genome is from delta (AY.4). Other lines are due to recombination between BA.1 and BA.2 (e.g. XE, XG) or BA.1.1 and BA.2 (e.g. XM). Since week 23/2022, when determining the virus lines, sequences have been automatically assigned to recombinant lineages. The low total number of recombinant sequences in the sample<sup>11</sup> shows that recombinants still only account for a very small proportion of infections in Germany. Their number in the sample was highest in week 18/2022 with 40 samples and a share of 0.5%. In week 24/2022, 4 recombinant lines were found (0.1%). A precise list of the proportions and evidence of recombinants can also be found at [www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Daten/VOC\\_VOI\\_Table.html](http://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Daten/VOC_VOI_Table.html) Find. (Data as of 06/27/2022). The recombinant lines are under observation, so far there are no epidemiological indications of a change in transmissibility, virulence and/or altered immune response compared to the original variants.

<sup>10</sup> <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19--22-june-2022>

<sup>11</sup> *In the previous weeks, the numbers of all detected recombinants, including those outside the random sample, were listed. The limitation to sampling evidence results in smaller numbers for individual recombinants in this report.*

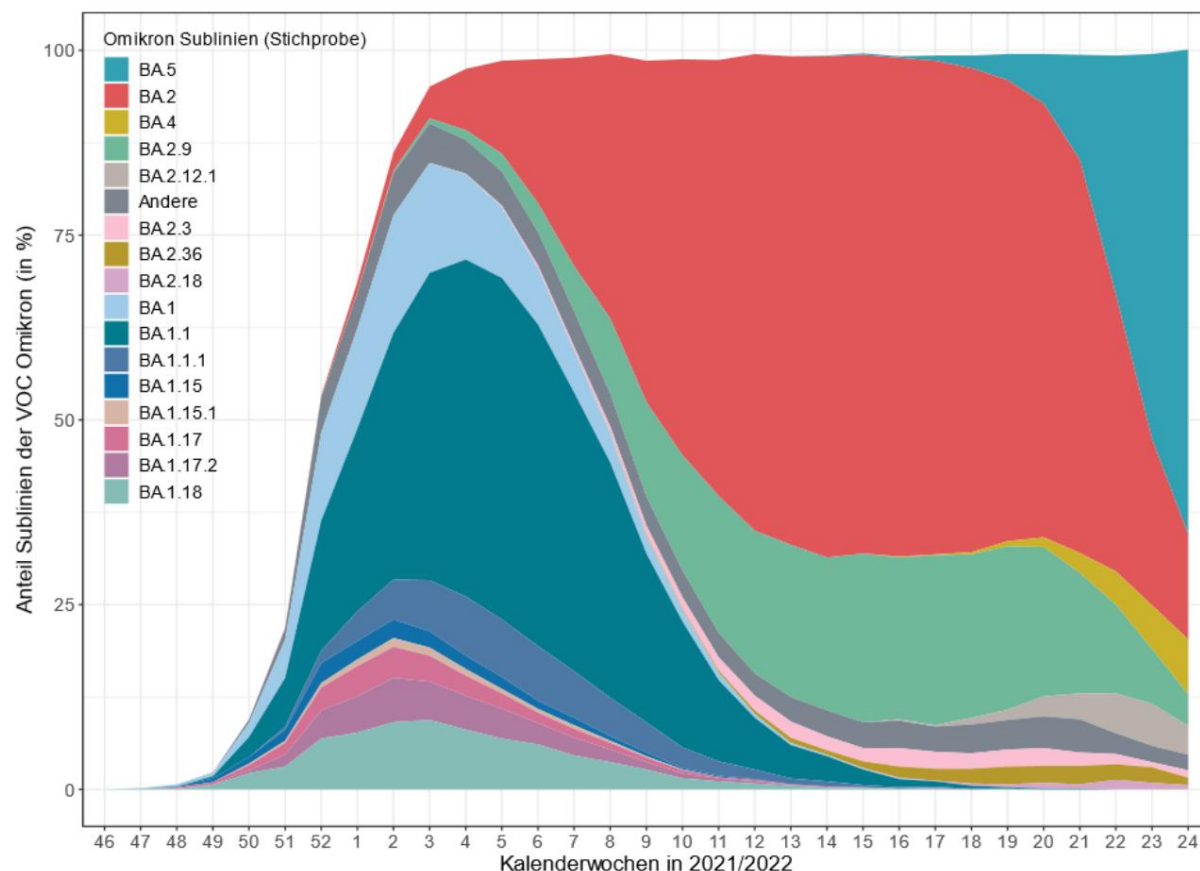


Figure 24: Percentages of the Omicron sublines with a share of >1% each, based on the genome sequences from the sample, sorted in descending order according to their share in week 24/2022. All other variants and sub-lines are in the complete table from week 01/2021 at [www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Daten/VOC\\_VOI\\_Table.html](http://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Daten/VOC_VOI_Table.html) contain.

### 3.5.2. IfSG reporting data on SARS-CoV-2 variants

With the changes in the Coronavirus Test Ordinance (TestV) of February 11, 2022, variant-specific PCR tests are no longer reimbursed. Since then, the number of transmitted VOC results has decreased significantly since week 06/2022. This has a particular effect in federal states with a small population and leads to greater fluctuations in the calculation of the VOC proportions, so that a comparison between the federal states is no longer meaningful. The transmitted cases according to VOC and federal states have been since

04/07/2022 no longer published.

At [www.rki.de/covid-19-VARIANTS](http://www.rki.de/covid-19-VARIANTS) you can find more information about Omikron and all VOCs. In addition, the RKI provides [assistance in deriving variant-specific PCR tests from characteristic amino acid exchanges and deletions in SARS-CoV-2](#) to disposal.

## 4. Recommendations and measures in Germany

Documents and information on recommendations and measures can be found at [www.rki.de/covid-19](https://www.rki.de/covid-19).

### 4.1. Current

- Updated on 06/30/2022: Technical recommendations for extended infection control measures for end-of-life care in nursing and health care facilities and exceptions to the obligation to isolate  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Infektionsschutz\\_Sterbebegleitung.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Infektionsschutz_Sterbebegleitung.html)
- Updated on 06/29/2022: Risk assessment on COVID-19  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Risikobewertung.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Risikobewertung.html)
- Updated on June 23, 2022: Overview of seroepidemiological SARS-CoV-2 studies  
[https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/AKStudien/AKS\\_Karte.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/AKStudien/AKS_Karte.html)
- Federal press conference on June 17, 2022 on the corona situation in summer  
Federal Health Minister Karl Lauterbach and RKI Vice President Lars Schaade (06/17/2022) [https://www.youtube.com/watch?v=yQ1Q9A\\_ya84](https://www.youtube.com/watch?v=yQ1Q9A_ya84)
- Update 6/7/2022: COVID-19 and Vaccination: Answers to Frequently Asked Questions (FAQ)  
<https://www.rki.de/SharedDocs/FAQ/COVID-Impfen/gesamt.html>

## 5. Appendix

### 5.1. Notes on data collection and evaluation

The data presented in this management report represent a snapshot. Information on cases can be determined later during the course of the disease and added to the reporting system.

Complete recording is not possible for all variables.

The health authorities may determine additional information, assess the case and initiate the necessary infection control measures. The data will be transmitted electronically by the health department to the responsible state authority and from there to the RKI no later than the next working day. The data is updated at the RKI once a day at midnight.

Due to the data input and data transmission, there is a time delay from the time the case becomes known to the time it is published by the RKI, so that there may be deviations in the number of cases from other sources.

Since August 26, 2021, the data from the population statistics of the Federal Statistical Office with the data status of December 31, 2020 have been used to calculate the incidences. The 7-day incidence is calculated on the basis of the reporting date, i.e. the date on which the local health authority became aware of the case and recorded it electronically. For today's 7-day incidence, cases reported within the last 7 days are counted.

The difference from the previous day, as shown in the management report and dashboard, refers to the date when the case was first published in the RKI's reporting.

It may be that e.g. B. Due to a delay in transmission, there are also cases that have a reporting date of more than 7 days ago. At the same time, the difference also takes into account cases that were subsequently deleted due to data quality checks, so that the 7-day incidence cannot be deduced from this difference. The reporting week corresponds to the calendar week according to the rules of the international standard ISO 8601 (corresponds to DIN 1355). It starts on Monday and ends on Sunday. The reporting weeks of a year are numbered consecutively, starting with the first week that contains at least 4 days of the year in question. Reporting years may have 52 or occasionally 53 weeks. The assignment to the reporting week is determined by the day on which the health department officially becomes aware of a case. The term "MW" for reporting week is used for the data from reporting systems listed here. The designation "KW" for calendar week is used for independent surveillance systems and those in which different data sources flow together.