COVID-19 SURVEILLANCE
FREQUENTLY ASKED QUESTIONS

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1. General context

1.1. WHAT IS THE ROLE OF SCIENSANO DURING THE COVID-19 EPIDEMIC?

The World Health Organization (WHO) and the European Union (EU) require each Member State to have a structure capable of dealing with any health crisis. To this end, Belgium has set up a strong structure with 3 components:

1. Risk Assessment Group (RAG)
2. Risk Management Group (RMG)
3. National Focal Point (NFP)

Sciensano (the Belgian institute for health) coordinates the RAG which is in charge of assessing risks to public health in a national and international context. The RAG analyses any signal that may have an impact on health. The RAG is composed of permanent members who are public health experts, supported by specific experts who are invited according to the type of signal such as an infectious disease, an environmental problem, etc. The RAG proposes prevention and control measures to the RMG, which is composed of the health authorities and decides on the measures to be applied. The NFP, including amongst others the Federal Service for Public Health, ensures the implementation of measures in consultation with the various entities. The NFP acts as a relay for communication with European and international institutions. More information on the role of Sciensano in the context of emergency and response can be found on our website.

At the request of the health authorities, Sciensano also coordinates the development of the procedures to be implemented by general practitioners, hospitals, patients and laboratories in the context of the COVID-19 epidemic. It is the Risk Management Group that validates the content of the procedures and then they become operational. These procedures can be found on our website (in Dutch • in French • in German).

Finally, Sciensano has a legally determined surveillance task in the context of public health as laid down by the federal law of 25 February 2018 (in Dutch • in French). As part of this task, Sciensano has put a surveillance system in place to monitor the COVID-19 epidemic in Belgium and to report on the data that are collected.

1.2. WHICH DATA DOES SCIENSANO COLLECT FOR THE COVID-19 SURVEILLANCE?

In order to get comprehensive information to monitor the COVID-19 epidemic, Sciensano brings together data streams from different sources. Sciensano collects data on lab-confirmed COVID-19 cases (see section 3), testing (see section 4), hospitalized COVID-19 patients (see section 5) and COVID-19 deaths (see section 6).
1.3. HOW DOES SCIENSANO ENSURE DATA QUALITY IN TIMES OF A HEALTH CRISIS?

*Question added 07/04/2020 | Last updated 07/04/2020*

In times of a health crisis, Sciensano continuously monitors the situation in the field and sets up relevant data collection procedures. The data collected need to be checked and consolidated in order to get them reliable. Also, data import by the data providers can’t always be done immediately, so it can take a while before a dataset is complete and “stable”.

1.4. IS THERE A GENERAL RULE WHEN INTERPRETING THE COVID-19 DATA?

*Question added 07/04/2020 | Last updated 24/09/2020*

We take a kind of data “snapshot” every day. In such a context, it is important to be careful when interpreting absolute numbers (see also the delay in reporting as referred to in question 1.3). There is a tendency to focus on these numbers in terms of “risk” whilst in order to monitor the evolution of the COVID-19 epidemic, it is necessary to follow trends instead of absolute numbers.

During the press conference of the Home Affairs crisis centre, the interfederal COVID-19 spokesmen communicates a number of clear key figures on the COVID-19CoVID-19 epidemic and discusses the important trends of that moment.

1.5. WHERE CAN I FIND THE DATA COLLECTED BY SCIENSANO?

*Question added 07/04/2020 | Last updated 24/09/2020*

The risk managing authorities receive daily an epidemiological report. That way they can base their actions and decisions on accurate and up-to-date information.

Based on these reports, the interfederal COVID-19 spokesmen discuss the epidemiological situation during the press conference of the Home Affairs crisis centre.

The epidemiological report (in Dutch • in French) is also publicly available on our website.

You can also stay up to date with the latest figures via:

- raw data and the corresponding codebook
- dynamic graphs
1.6. WHAT KIND OF DATA IS AVAILABLE IN THE COVID-19 OPEN DATA PORTAL?

Question added 07/04/2020 | Last updated 24/09/2020

You can consult specific datasets via our website (free of charge). These are updated daily during the night.

The following datasets are published as open data:

- confirmed cases by date, age, sex and province
- confirmed cases by date and municipality
- cumulative number of confirmed cases by municipality
- hospitalizations by date and provinces
- mortality by date, age, sex, and province
- total number of tests performed by date

1.7. FOR WHICH PURPOSES ARE THE SURVEILLANCE DATA USED?

Question added 07/04/2020 | Last updated 07/04/2020

The authorities and the Risk Management Group use these data to manage this health crisis. Additionally, mathematical modelers use these data to predict the future course of the epidemic taking into account the measures taken. We also share our data with the European Centre for Disease Control (ECDC) and the World Health Organization (WHO) so that they can draw an accurate picture of the international situation.
2. Epidemiological terminology

2.1. WHAT IS THE DIFFERENCE BETWEEN INCIDENCE, PREVALENCE AND OTHER BASIC EPIDEMIOLOGICAL CONCEPTS?

Question added 07/04/2020 | Last updated 07/04/2020

In our reports, we use different epidemiological measures to characterize the current COVID-19 pandemic and its evolution. We use these terms in a vulgarized way to be understandable by the general public. Hence, our definitions may differ from the classical textbook definitions of these measures. Overall, we report 5 distinct measures:

- **Number of new cases**: the number of new confirmed cases, hospitalizations, or deaths reported (daily update).
- **Incidence**: the number of new cases, hospitalizations, or deaths reported during a certain period (for example: last 24 hours), relative to the population size.
- **Cumulative number of cases**: the total number of confirmed cases, hospitalizations, or deaths reported since the beginning of the outbreak or a specific starting point.
- **Cumulative incidence**: the total number of confirmed cases, hospitalizations, or deaths reported since the beginning of the outbreak or a specific starting point, relative to the population.
- **Prevalence**: the number of cases present at a given moment. It corresponds to taking a snapshot of the situation at a specific moment in time. For instance, we report the prevalence of occupied hospital beds, i.e., the total number of hospital beds occupied by COVID-19 patients at a given moment.

2.2. WHAT IS THE MOVING AVERAGE AND HOW IS IT CALCULATED?

Question added 30/03/2021 | Last updated 30/03/2021

In order to obtain a better visualization of the curves we want to avoid daily fluctuations. Therefore, a smoothed curve is created based on the moving average over 7 days on the different indicators. This moving average is calculated for a day D as the arithmetic mean of the indicator over the period D-6 to D.

To find out how (positive or negative) an indicator is evolving, its change (in percentage) compared to the value of the previous week is calculated. To do so, we calculate the difference between the moving averages, on day D and day D-7, divided by the moving average on day D-7.

However, it is very important to mention that the moving averages and evolutions reported on day D are based on consolidated data, thus until D-4 (see question 1.3/3.5 above). This means that the moving average presented in our graph is calculated for the period D-10 to D-4.

The evolution of the average for the aforementioned period is calculated for the period D-17 to D-11 (for example, the average reported on 28/10 is, in fact, calculated based on the data from 18/10 to 24/10. The evolution reported on 28/10 is calculated by comparing the average on 24/10 (data from 18/10 to 24/10) with the average on 17/10 (data from 11 to 17/10).
The graph below shows the number of daily cases and the moving averages. The graph showing the corresponding evolution is placed underneath. The moving average (green line) shows a 3-day time delay compared to the raw data. This is due to the fact that the average value of the interval was not imputed at the center of the interval but at the end of it. The yellow line shows the moving average if it was imputed at the center of the interval.

The curves smoothed by average over 7 days and the evolutions are calculated to illustrate trends. The critical points of the curves (inflection points, maximum, minimum, etc.) should therefore not be associated to specific dates.

2.3. WHAT DATES DEFINE THE WAVES OF THE COVID-19 EPIDEMIC IN BELGIUM?

The first wave of the epidemic took place in Belgium from March 1 to June 22, 2020. The second wave of the epidemic began on August 31, 2020 and is currently still ongoing. The period between June 22nd and August 31st has been defined as an interwave period.

2.3.1. Why is it important to set specific dates to mark the start and the end of an epidemic wave?

Determining a date that marks the start and the end of an epidemic wave is essential for epidemiological analyzes and for a harmonized description of the different surveillance systems.
2.3.2. How have these dates been defined?

The start of the COVID-19 epidemic and therefore the start of the first wave, is set on the date of the first case diagnosed in Belgium, i.e. March 1st, 2020.

The end of the first wave of the epidemic was defined by the number of confirmed cases which was at its lowest level on June 22nd 2020.

The start of the second wave was defined by the analysis of the evolution of the number of new cases and the number of hospitalizations. The week of August 31 was the first week, after the end of the first wave, during which the evolution of both the number of new cases and the number of hospitalizations remained positive throughout the week. These two indicators subsequently remained positive over a significant period of time. For more information on how the date of onset of the second wave of the epidemic was defined, please see the corresponding explanatory note (NL/FR).

3. Data on lab-confirmed COVID-19 cases

3.1. HOW DO WE COLLECT DATA ON LAB-CONFIRMED COVID-19 CASES?

Question added 07/04/2020 | Last updated 19/01/2021

According to the COVID-19 case definition and the recommendations for testing (Dutch • French • German), persons are diagnosed on the basis of a laboratory test carried out by the laboratory of the National Reference Centre (KU Leuven) or by a peripheral clinical laboratory, by the national testing platform, or by the network of university laboratories. The diagnostics include PCR tests, antigen tests as well as rapid antigen tests. Patients with a positive laboratory result are confirmed cases.

Data collection includes the number of tests performed, positive and negative results, as well as basic demographic data (age, gender, postcode) collected via application forms sent to Sciensano by the different laboratories performing COVID-19 diagnostics.

Since the 9th of April 2020, the national testing platform has been operational. This platform carries out tests for nursing homes, other residential collectivities and triage centers.

The data on lab-confirmed COVID-19 cases are summarized in the daily reports (Dutch • French), dynamic graphs and are available through the open data portal.

3.2. WHICH DATA DO WE USE TO REPORT LAB-CONFIRMED CASES AND PERFORMED TESTS?

Question added 30/09/2020 | Last updated 19/01/2021

As is typical for intervention epidemiology, Sciensano adapts its data collection in function of the evolution of the epidemic and the needs for the crisis management. Therefore, COVID-19 data used to report have evolved over time.
At the beginning of the epidemic (February 2020), we reported new cases based on the notification by the regional health authorities to Sciensano. This notification was done by structured forms through the system of mandatory declaration of infectious diseases which has been in place for years.

During this period of the epidemic, the National Reference Center for respiratory pathogens (NRC) was the only laboratory in Belgium performing PCR tests for SARS-CoV-2. From the end of February, some other laboratories started to perform PCR tests, but during this first period the positive samples from these laboratories were forwarded to the NRC for confirmation.

Cases notified by the mandatory declaration system were linked to a positive PCR test from the NRC. In some cases, e.g. when a positive sample, originating from another laboratory, was confirmed by the NRC, the notification of the regional health authorities reached Sciensano more quickly than the confirmation result from the NRC. Thus, during this period we used the mandatory notifications in combination with the NRC laboratory test results, to complete the dataset used to report confirmed cases.

By 15 March 2020, the number of tests performed and the number of confirmed cases importantly increased. Regional health authorities stopped using the structured forms and prospective reporting was mainly based on laboratory test results.

During the first weeks of March, more and more Belgian clinical laboratories implemented the analysis for SARS-CoV-2. From 15 March 2020, these laboratories started to notify Sciensano directly. Simultaneously, as it was no longer mandatory, most laboratories stopped to forward positive samples to the NRC for confirmation. By 30 March 2020, more than 40 laboratories were performing PCR and antigen tests and providing the results to Sciensano. In this way the database for confirmed cases was built up.

On 9 April 2020 the National testing platform was put in place in order to increase the testing capacity. Testing was performed among others by pharmaceutical and university laboratories. The National platform has mainly been carrying out tests for samples taken in nursing homes, other residential collectivities and triage centers. Results from the National platform were therefore added to those notified by the NRC and the other clinical laboratories.

In addition to the described data flow, on 5 May 2020, all laboratories (NRC, clinical laboratories and National testing platform) were asked to send their COVID-19 data also to the Healthdata.be platform, the department of Sciensano for data standardization. A new database for COVID-19 was developed over the following months. During this time, a double flow of data was crucial for comparison and validation of this new database.

Since September 26, only data from the new database from the Healthdata.be platform is used for reporting.

As of 16 December 2020 patients with a positive rapid antigen tests are also counted as a confirmed case.
3.2.1. What is the Healthdata.be platform?

The Healthdata.be platform is a standardization system for health-related scientific data flows developed by Sciensano and funded by INAMI-RIZIV.

The Healthdata.be platform allows health professionals to collect data in a standardized and completely digitalized way. The resulting databases can then be transferred to Sciensano scientists for surveillance purposes and are subsequently used to inform health policy makers.

Different sources of data related to COVID-19 (laboratory data, contact tracing, serology, hospital data among others…) have been progressively integrated in the Healthdata.be platform. For more information on Healthdata.be, please click here.

3.2.2. What are the advantages of the Healthdata.be platform?

Firstly, it allows to collect data via a single data flow. This lowers the workload for laboratories as they can transfer their data at once.

Secondly, a single data flow implies that the data is stored in a unified database, making it possible to link all data from a single patient through a unique identifier (national register number). This improves the efficiency and accuracy of the data management. In order to protect patients identity and privacy, data is (pseudo)anonymized and highly secured control mechanisms are in place.

Lastly, the healthdata.be platform is also used by other services within Sciensano. Therefore, data from different sources could be combined for more in-depths analyses through the unique identifier provided agreement of the privacy commission.

3.3. HOW DO WE ASSURE THAT WE ONLY TAKE THE NEW CASES INTO ACCOUNT?

*Question added 30/10/2020 | Last updated 30/03/2021*

Persons might be tested more than once (see question 4.3). To assure that only the new cases are counted, a deduplication process is performed.

Until October 22 2020 duplicates of reported positive test results were removed based on date of birth/gender/postal code and only the first positive test was taken into account as a new confirmed case (see also question 4.2).

Since October 23 2020, the deduplication process has changed. The combination of age/gender/postal code to identify duplicates is no longer used because now the national register number is available (see question 3.2.2). Moreover, a timeframe of 90 days is used as a reference period. This reference period is based on the RAG advice of March 29, 2021 that states that an interval of at least 90 days is needed to consider a second positive PCR test as a potential reinfection.

Duplicates are thus removed based on the national register number if this person already had another positive test within the last 8 weeks. In this case only the first positive test result within this timeframe is retained.
3.4. WHY IS IT HARD TO COMPARE CASE NUMBERS FROM DIFFERENT COUNTRIES?

*Question added 07/04/2020 | Last updated 23/06/2020*

Each country has its own testing strategy to determine who should be tested for COVID-19. This strategy evolves and can be adapted to the epidemiological evolution and available resources.

In Belgium, for example, from 11 March 2020, only hospitalized persons with acute respiratory complaints, even if they are mild, as well as health personnel and symptomatic people (up to 5 people) were tested in residential communities such as nursing homes.

In addition, since 10 April 2020, the staff and residents of residential care centres have been systematically tested as part of a specific screening strategy targeting nursing homes only.

On 22 April 2020, the testing strategy was extended and since that date, anyone requiring hospitalisation, including day hospitalisation (first time), can be tested. On top of that, any person entering a residential community for the first time (e.g. nursing homes, homes for disabled, youth centres, prisons, etc.) or any resident of that residential community with compatible symptoms can also be tested.

On 15 May 2020, the testing strategy was extended once again in the context of the deconfinement strategy. From then on, all persons with a possible COVID-19 infection will be tested, as well as persons who had a high-risk contact with a COVID-19 case and who are themselves in professional contact with people who are at risk of developing a serious form of the disease.

Since 12 June 2020, all other high-risk contacts of a COVID-19 case are also tested. (links to case definition/testing: [Dutch](#) • [French](#) • [German](#)). The implementation of testing strategies and the overall epidemiological timelines differ between countries. Therefore a direct comparison of case numbers between two countries remains difficult.

3.5. WHY IS THE REPORTED NUMBER OF CONFIRMED CASES ALWAYS LOW FOR THE LAST REPORTED DAY (I.E. ‘TODAY’)?

*Question added 07/04/2020 | Last updated 23/06/2022*

There are two important reasons for this apparent underestimation:

1. Firstly, in order to produce the daily reports and open data, we take the situation at 4PM. The data for the last day in the time series are therefore always incomplete.

2. Secondly, the reported data for the last 4 days always require progressive consolidation. The data are mainly displayed on the date the sample was taken. The analysis in the laboratory obviously takes time, as do the subsequent reporting and processing of the data. Therefore, the number of positive samples taken ‘today’ is only integrated in the data in the course of the following days.

Both issues imply that the data reported for the last 2 days will be updated in future iterations of the daily reports and open data. In other words, our database is dynamic and subject to continuous updating and improvement of the already reported data.
3.6. WHY DO THE MAPS WITH NUMBER OF CASES VERSUS THE ONES WITH INCIDENCE/1000 POPULATION LOOK SO DIFFERENT?

*Question added 07/04/2020 | Last updated 01/05/2020*

The maps with the (absolute) number of cases per municipality make it easy to see where the largest number of cases are. However, these results are also strongly influenced by the population density of the different municipalities. Indeed, it is easier for larger municipalities, with larger numbers of inhabitants, to accumulate a larger number of COVID-19 cases.

To directly compare the burden of disease between different municipalities with different numbers of residents, we therefore also calculate and map the number of new cases in function of the number of residents. We currently calculate incidence rates per 1000 inhabitants. These maps can give an indication of where the “risk” of infection is highest.

3.7. WHY ARE THERE ALWAYS LESS CASES REPORTED DURING THE WEEKENDS?

*Question added 07/04/2020 | Last updated 24/09/2020*

We observe that less cases are being reported over the weekends (see figure in the lighter green). This can be due to several factors:

1. First of all, patients may be reluctant to go to the general practitioner or the hospital during the weekend and rather wait until Monday.

2. Secondly, less staff may be working in the hospitals and in the diagnostic labs on weekends, which may delay the processing of samples and the reporting of results.

We mainly see this effect in the number of reported cases, less so in the number of hospitalizations, and almost not in the number of deaths.

3.8. ARE SEROLOGICAL RESULTS ALSO INCLUDED IN THE NUMBER OF CONFIRMED COVID-19 PATIENTS?

*Question added 23/06/2020 | Last updated 23/06/2020*

Persons with only a positive serological test are not included in the figures of confirmed cases, as a serological test examines the presence of antibodies and does not indicate an acute infection. A positive serological test confirms that the person has had a COVID-19 infection. In most cases these are older infections and have already been cured. Therefore, these test results are not included in the reporting of new cases.
4. Data on the tests performed and the positivity ratio

4.1. WHAT IS THE POSITIVITY RATIO AND HOW IS IT CALCULATED?

*Question added 18/09/2020 | Last updated 18/09/2020*

The positivity ratio describes which proportion of all the performed tests are positive for a certain time period (e.g. per day or per week). Therefore, to calculate it, we divide the total number of positive tests by the total number of tests for a certain time period.

Example: When, in a certain time period, among 100 persons, there are 5 positive tests and everybody got tested only once, the positivity ratio is 5% and there are 5 new cases.

*It is important to bear in mind that the testing strategy has changed a lot since the beginning of March (also see question 3.4). As a result, comparing positivity ratio over time should be done with caution.*

4.2. WHY IS THE POSITIVITY RATIO IN THE EPIDEMIOLOGICAL REPORT NOT EQUAL TO THE NUMBER OF DIAGNOSED CASES DIVIDED BY THE TOTAL NUMBER OF TESTS FOR THAT SAME TIME PERIOD?

*Question added 18/09/2020 | Last updated 28/10/2020*

1. Since March 15 the laboratories are participating in the reporting of PCR tests. It can be noted that the number of positive tests is larger than the number of cases. This is because a positive PCR test is not counted as a new case when there had been a positive test for this person within a reference period (*see question 3.3*). Therefore, duplicates have been removed and only the first positive test of a person is taken into account. Depending on the testing strategy, the proportion of people with a previous positive test varies. Stricter application of the testing strategy will result in fewer people being tested, as was the case at the beginning of the epidemic. This reduces the chance of a person testing positive twice and thus the respective share in the total number of tests.

Example: In a given time period, 100 people are tested of which 1 person has already been tested positive at least once. If 5 of those 100 tests are positive, the positivity ratio is 5%. However, there are only 4 new cases because several positive results come from the same person.

2. For the time period until March 15, the number of new cases is higher than the number of positive tests. This is explained by the fact that at the beginning of the epidemic, new cases were notified by the regional health authorities to Sciensano. They used the system of mandatory declaration of infectious diseases that has been in place for years. It was not possible to retrospectively link all of these declarations back to a positive PCR test. These possible cases were counted as confirmed cases. As the PCR test result was not available for these cases, they were not included in the calculations of the positivity rate.
4.3. FOR WHAT REASONS CAN A PERSON BE TESTED SEVERAL TIMES? AND HOW BIG IS THE SHARE OF THESE MULTIPLE TESTS?

Question added 18/09/2020 | Last updated 18/09/2020

There are several situations in which a test is indicated, for example when developing possible COVID-19 symptoms, when returning from an orange or red zone, after a high-risk contact with a confirmed case of COVID-19 or in the context of screening in residential collectivities. On one hand, a person may find himself in several of these situations, on the other hand, he may be tested several times in the same situation.

Preliminary analyses of the data available in Sciensano's database (up to September 17) indicated that 24% of the patients that were tested actually had been tested more than once. Among them, 14% tested positive more than once.

4.4. WHY IS THE NUMBER OF POSITIVE TESTS IN THE OPEN DATA TABLE “TESTS” NOT THE SAME AS THE NUMBER OF CASES IN “CASES_AGESEX”?  

Question added 30/09/2020 | Last updated 30/09/2020

The number of positive tests (TESTS) refers to the total number of tests that yielded a positive result. Sometimes the same person undergoes multiple tests, and can therefore yield multiple positive tests (see question 4.3). In order to obtain the number of cases (CASES_AGESEX) we perform a deduplication process, after which only the first positive test of a person is taken into account. i.e. number of unique individuals with at least one positive tests (see question 4.2).

Moreover, the number of positive tests are aggregated by date of laboratory diagnosis (or date of sampling if date of diagnosis was not available), while the number of cases are aggregated by date of symptoms onset (or, if not available, date of diagnosis or notification). A person does not always have the possibility to get tested on the first day of symptoms. Moreover the result, and thus the diagnosis, is not always known on the same day of the sampling. Therefore the test result of a person diagnosed with COVID-19 might be included as a positive test (TESTS) on a different date than the inclusion as a case (CASES_AGESEX). This reflects the fact that indicators on performed tests are used for monitoring laboratory capacity, while the number of cases is an epidemiologic indicator. As a result of this difference, sometimes the number of new cases will be higher than the number of positive tests and sometimes, for a given date, it could be lower. Therefore, they shouldn’t be compared, as they do not refer to the same dates.
5. Data on hospitalized COVID-19 patients

5.1. HOW DO WE COLLECT DATA ON HOSPITALIZED COVID-19 PATIENTS?

Question added 07/04/2020 | Last updated 30/03/2021

Two separate surveys provide us data about hospitalization:

- All Belgian general hospitals should provide aggregated data on the number of hospitalized and deceased COVID-19 patients through a daily online survey (Surge Capacity survey). Psychiatric and rehabilitation hospitals do not register in this surveillance. Participation to this surveillance is mandatory for all general hospitals (Royal Decree of 30.04.2020) and can therefore be considered as containing exhaustive data on the number of COVID-19 patients within Belgian general hospitals. It is meant to follow the daily evolution of COVID-19 patients in Belgian hospitals and contains data on both prevalence (number of patients currently in the hospital, number of patients currently in ICU, number of patients receiving ventilation support and ECMO [extracorporeal membrane oxygenation]) and incidence (number of new admissions, number of discharges, number of deaths). Since 24 March 2020, this database is the official reference to follow up COVID-19 deaths in hospitals.

  You can find this information in the daily report (Dutch • French), the Epistat dashboard and the open data portal.

- Additionally, all hospitals in Belgium provide case-based data on their hospitalized patients with a confirmed COVID-19 infection (Clinical Hospital Surveillance) through an online survey comprising 3 questionnaires: one on admission information, one on discharge information and a third in case the patient is admitted in ICU. This data collection is not exhaustive but is representative for the population of hospitalized COVID-19 patients in Belgium. In the Clinical Hospital Surveillance information is collected on demographic data, comorbidities (underlying diseases), symptoms at admission, medication and treatments received during hospitalization and complications from COVID-19. These data are used to examine patient profiles, to monitor these over the course of the epidemic and to examine the association of these profiles with development of severe disease, admission in ICU and/or death. Information obtained from the Clinical Hospital Surveillance can be found on the Epistat dashboard, the weekly report and in the thematic reports published on the Epidemiological situation page of the Sciensano COVID-19 webpage.

More information regarding the methodology of both hospital surveillance systems can be found in the following publication:

5.2. WHY IS THE DIFFERENCE BETWEEN THE NUMBER OF HOSPITALIZED PATIENTS BETWEEN 2 CONSECUTIVE DAYS NOT THE SAME AS THE DIFFERENCE BETWEEN NEW INTAKES AND DISCHARGES TODAY?

Question added 07/04/2020 | Last updated 30/03/2021

We will use the daily report of 28/03 to answer this question. The report can be downloaded in Dutch or French.

This apparent discrepancy has many reasons, and the relative importance of each specific reason will vary from day to day. Important to note is that incidence (new intakes, “NEW IN”) and prevalence (occupied beds, “TOTAL IN”) are queried separately; we thus do not (and cannot) mathematically derive one from the other:

a) A difference in prevalence is not only the result of new intakes and discharges, but also of new hospital deaths.

b) Approx. 99% of hospitals report each day, but the subset of reporting hospitals may vary from day to day; even one (large) hospital reporting or not can already give noticeable differences.

c) New ‘confirmed’ hospitalized patients might not always be reported as ‘new intakes’ if the patient was already hospitalized as a ‘suspected’ patient because the test result is not available at the moment of reporting. They would however be counted in the prevalence from the moment that the test result turns out positive. We are working with the hospitals to increase consistency in reporting in order to count patients who were hospitalized but got a positive test result at a later time as new confirmed COVID-19 patients. The same applies to internal hospital outbreaks of COVID-19 infections among already hospitalized patients.

d) In light of the advice published on April 22, 2020 on the extension of test indication criteria (all patients admitted in hospital could be tested, irrespective of the reason of admission), since April 30 2020 patients are stratified according to pathology. Patients admitted for non-COVID-19 reasons but that are tested positive in a screening context are registered separately and are not counted in the daily new patients that are daily reported (“NEW IN”). It is however possible that these patients are isolated on a COVID-19 unit and thus counted in the prevalence count (“TOTAL IN”).
5.3. WHAT EXACTLY IS MEAN BY THE TOTAL NUMBER OF HOSPITAL ADMISSIONS?

Question added 29/01/2021 | Last updated 30/03/2021

The number of new COVID-19 patients that is daily monitored and reported in the reports, dashboard and open data (“NEW IN”) contains the new laboratory-confirmed COVID-19 patients over the last 24 hours, admitted because of COVID-19 and not referred from another hospital. Also patients admitted previously for COVID-19 but getting a positive test result during the last 24 hours are counted in this number. Patients admitted because of another pathology and being tested positive in a screening context are registered separately and are not included in this number.

5.3.1. What exactly is meant by the total number of hospital admissions?

Question added 17/06/2020 | Last updated 30/03/2021

We will use the daily report of 09/03/2021 to answer this question.

1. Kerncijfers - Trends

<table>
<thead>
<tr>
<th>Aantal gerapporteerde patiënten</th>
<th>In totaal</th>
<th>Dag gemiddelde gedurende de voorlaatste periode van 7 dagen</th>
<th>Dag gemiddelde gedurende de laatste periode van 7 dagen</th>
<th>Evolutie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bevestigde COVID-19 gevallen</td>
<td>790 008</td>
<td>2 418</td>
<td>2 336**</td>
<td>-3%</td>
</tr>
<tr>
<td>Opnames in het ziekenhuis</td>
<td>58 246**</td>
<td>148,6</td>
<td>146,7**</td>
<td>-1%</td>
</tr>
<tr>
<td>Sterfgevallen</td>
<td>22 292</td>
<td>23,6</td>
<td>26,3*</td>
<td>+12%</td>
</tr>
<tr>
<td>In ziekenhuizen</td>
<td>12 724</td>
<td>19,0</td>
<td>23,9</td>
<td>+26%</td>
</tr>
<tr>
<td>In woonzorgcentra</td>
<td>9 396</td>
<td>4,6</td>
<td>2,3</td>
<td>-50%</td>
</tr>
</tbody>
</table>

Between 15/03/2020 (the date after which more than 99% of hospitals participate in data collection) and 08/03/2021, 58 246 COVID-19 symptomatic patients confirmed by the lab were admitted to the hospital. When interpreting this figure, it is important to consider the following information:

- It concerns only the lab-confirmed patients who were hospitalized because of COVID-19. Patients who were hospitalized because of another cause but tested positive in a screening context are registered separately since 30/04/2020 and are not included in this figure.

- Patients admitted previously for COVID-19 but receiving a positive test result during the last 24 hours (new ‘confirmed’ hospitalized patients) should also be counted in this number. However, depending on the hospitals’ internal data systems, patients for whom no lab confirmation was (yet) available at the time of reporting are not consistently reported at the moment the test result turns out positive, leading to an underestimation of the number of newly confirmed COVID-19 patients. It only concerns the new patients for whom a lab confirmation was available at the time of reporting. Patients for whom no lab confirmation was (yet) available at the time of reporting were reported as new hospitalizations under the category ‘CT confirmed or possible cases’ in the survey.
5.4. HOW ARE NEW HOSPITALIZATIONS CATEGORIZED BY PROVINCE?

*Question added 30/03/2021 | Last updated 30/03/2021*

The hospitals register by their recognition number. A recognition number can contain multiple hospital campuses/sites. The recognition number is linked to a zip code and thus the province of the main campus/site. In an exceptional case not all campuses/sites lie in the same province. This is the case for one recognition number that belongs to Brussels Capital Region but has a campus/site in Brabant wallon. As we do not have data per hospital campus, it is impossible to correctly break down the data per province in this case.

Within the Surge Capacity Surveillance, the number of hospitalisations is aggregated per hospital. Given the lack of individual patient information within this surveillance, new admissions are classified according to the province of the hospital where the patient was hospitalised. We estimated from the individual patient data collected through the non-exhaustive Clinical Hospital Surveillance that 87% of patients are hospitalised in a hospital located in the province where the patient lives.
6. Data on COVID-19 deaths

6.1. HOW DO WE COLLECT DATA ON COVID-19 DEATHS?

*Question added 07/04/2020 | Last updated 01/05/2020*

Sciensano collects and combines data on all deaths due to possible or confirmed COVID-19 through several sources:

- daily reporting from the hospitals to Sciensano (see question 5.1).
- daily reporting from nursing homes to the regional authorities.
- mandatory declaration for general practitioners to the regional authorities.

6.2. HOW ARE DEATHS REPORTED IN BELGIUM IN COMPARISON TO OTHER COUNTRIES? HOW CAN WE COMPARE THESE NUMBERS?

*Question added 07/04/2020 | Last updated 19/01/2021*

Each country has its own reporting strategy of COVID-19 deaths, linked to its ability to implement out-of-hospital data flows.

In Belgium, deaths in hospitals are reported by hospitals through the "hospital surge capacity survey". Deaths for which the COVID-19 infection has been confirmed by a laboratory test or on the basis of a CT scan of the thorax with suggestive clinical presentation of COVID-19 are reported as "deaths of confirmed case". Deaths from patients who were not tested for COVID-19 but who met the clinical criteria for COVID-19 as determined by a clinician, are reported as "deaths of possible cases" (links to case definition/testing: Dutch • French • German).

Deaths outside the hospital (nursing homes and others) are reported by the regional authorities and refer to confirmed and possible COVID-19 cases. At the beginning of the epidemic, the vast majority of people who died outside the hospital setting were possible COVID-19 cases.

Comparing mortality data between countries has some limitations. This comparison of COVID-19 deaths between different countries must take into account the total population of each country. Another limitation of this comparison is that for the COVID-19 deaths registration Belgium uses a broad definition (as it includes confirmed as well as possible cases, and hospitalized as well as extra-hospitalized cases) while other countries have narrower registration criteria (link to description of COVID-19 death surveillance among European countries, ECDC).

In light of the different international methods for the surveillance of COVID-19 deaths, excess mortality is a better indicator to monitor the severity of the epidemic. In Belgium, Sciensano carries out all-cause mortality monitoring through the Be-MOMO project (Belgian Mortality Monitoring). Mortality during the first wave of the COVID-19 epidemic was shown in the weekly epidemiological reports. Another interesting point of view is the comparison of the excess in all-cause mortality by week in the different European countries made by EuroMOMO. More information on the relationship between COVID-19 mortality and all-cause mortality can be found in the publication "All-cause mortality supports the COVID-19 mortality in Belgium and comparison with major fatal events of the last century".
6.3. ARE DEATHS IN NURSING HOMES ALSO INCLUDED IN THE COVID-19 DEATH STATISTICS?

Question added 07/04/2020 | Last updated 19/01/2021

Yes, these are included in the dataset with the total number of deaths.

The surveillance of deaths of confirmed COVID-19 cases in hospital does not reflect the true magnitude of COVID-19 mortality in our population, our goal is to have mortality statistics that are as complete as possible and, therefore, to include COVID-19 deaths occurring in hospital and elsewhere (e.g. in nursing homes, other residential communities, or at home), as well as confirmed and possible COVID-19 deaths.

6.4. HOW IS THE NUMBER OF DEATHS IN NURSING HOME RESIDENTS OBTAINED?

Question added 18/12/2020 | Last updated 19/01/2021

As described above, information is available on the number of COVID-19 deaths in hospitals, nursing homes and the community (via mandatory reporting). Deaths of nursing home residents are recorded as individual deaths in all three regions. Until the 2nd of June the Flemish regional authority provided aggregated information on these deaths to Sciensano. A retrospective survey was carried out by the Flemish agency for health (Agentschap Zorg en Gezondheid - VAZG) to retrieve individual data (age, gender and date of death) for the deaths that occurred between March 18 and June 2. Individual data could be obtained for a majority of cases. On August 26, these individual data were integrated in the database meaning that individual-level data on deaths is now available for the whole period. An update of the analyses was published in the report: COVID-19 mortality – Update of the database – August 26 2020 (NL/FR)

Deaths are classified according to the date of the death. The deaths in nursing homes are notified by the regional authorities; these are reported with 2 days delay in the dataset of COVID-19 deaths by Sciensano.

Residents in nursing homes or in other residential collectivities dying in the residential care institution or in hospitals are reported by the regional authorities. Moreover, since 19/06, the hospitals indicate whether or not the person who died due to COVID-19 in the hospital was a nursing home resident

Every week, hospital data are combined with nursing home data to determine the total number of deaths among nursing home residents as accurately as possible. The linking of these two databases takes place on Wednesdays and is published in the weekly report on nursing homes on Fridays.

There are limitations to this linking of databases. Given the date of birth is missing in the nursing home surveillance in the Walloon region, linking these databases is difficult for this region. For the Flemish region only the total count of deaths from all causes of death is known for the deaths of nursing home residents in the hospitals. Therefore, a correction is needed to estimate the number of nursing home residents that died of COVID-19 in the hospital in the Flemish region

The daily epidemiological reports publish the deaths by place of death. Due to the linking of data sources, it is also possible now to show the number deaths related to COVID-19 among residents of residential care facilities according to whether they died in a nursing home, in the hospital or at home.
6.5. ARE DEATHS OUTSIDE HOSPITALS AND NURSING HOMES ALSO INCLUDED IN THE COVID-19 DEATH STATISTICS?

*Question added 07/04/2020 / Last updated 01/05/2020*

Yes, deaths that take place at home and in all other settings are reported by the physician to the regional authorities and subsequently transmitted to Sciensano and included in the COVID-19 statistics, as far as the reporting is complete.

6.6. DO THE DATA ON COVID-19 DEATHS INCLUDE CONFIRMED CASES AND POSSIBLE CASES?

*Question added 07/04/2020 / Last updated 27/05/2020*

Yes, data on COVID-19 deaths include both cases confirmed by a laboratory test or CT scanner of the thorax and possible cases. Potential cases include patients who did not receive a diagnostic test for COVID-19 but met the clinical criteria for COVID-19 as assessed by the physician (links to case definition/testing: [Dutch](#) • [French](#) • [German](#)).

Mortality statistics are sought to be as complete as possible. Because the surveillance of hospital deaths does not reflect the true extent of COVID-19-related deaths in a population, we also include COVID-19 deaths that occurred outside the hospital (e.g. in nursing homes).

As regards out-of-hospital deaths, only deaths from confirmed COVID-19 cases were reported before the 30th of March 2020. Before the start of the specific screening strategy aimed at nursing homes, the vast majority of out-of-hospital deaths were reported as potential COVID-19 cases. This extension with the possible COVID-19 cases has also been done retroactively for all deaths reported before the 30th of March 2020.

As of 5 May, deaths from possible in-hospital cases are also included in the mortality statistics. This extension also includes retrospectively the deaths of possible hospital cases reported before this date.

6.7. WHY CAN THE NUMBER OF DEATHS FOR A SPECIFIC DATE DECREASE?

*Question added 22/04/2020 / Last updated 26/08/2020*

The mortality database is dynamic. Every day improvements are made following datacheck with regional authorities. It happens that dates of death or dates of birth could incorrectly be encoded in the questionnaires and, after verification with hospitals and nursing homes, these dates are corrected afterwards. More specific information about the deaths in nursing homes in Flanders were added to the database on August 26 (see [question 6.4](#)). As a result, there may be a case that is moved to another date of death or a case that is deleted if it is found to be a duplicate.
7. Data from the Influenza Surveillance System

7.1. HOW DO WE COLLECT DATA ON INFLUENZA-LIKE ILLNESSES?

Question added 07/04/2020 | Last updated 03/04/2020

The sentinel network of general practitioners continuously records consultations in general medicine for influenza-like illnesses and acute respiratory infections. The network has around 120 general practitioner offices spread throughout Belgium. It records for each episode age group, vaccination status, outcome and immediate hospitalization. In a subset of these patients, a clinical sample is collected and virologically tested by the National Reference Centre (NRC) for Influenza. From this subgroup, we also record additional clinical data (symptoms, risk factors and comorbidities, vaccination, treatment and severity indicators).

Additionally, six sentinel hospitals participate in this surveillance. Since the 2011-2012 respiratory season, this network has recorded all episodes of hospitalized severe acute respiratory infections (SARI) that occur during the period of high influenza activity. The surveillance starts as soon as the first signs of influenza virus circulation are detected by the NRC for Influenza, and ends at least 3 weeks after the incidence of influenza-like syndromes (collected via the sentinel network of general practitioners) again drops below the epidemic threshold. For each episode, the patient's demographic characteristics, symptoms, risk factors and comorbidities, vaccination status, treatment, severity and clinical outcome are registered during the hospital stay. In addition to this clinical data recording, the hospital collects a nasopharyngeal sample from each patient, which is virologically tested by the NRC for Influenza.

We carry out both surveillances in close collaboration with the NRC for Influenza, which performs microbiological tests on nasopharyngeal samples collected from each patient for the influenza virus and, since March 2020, SARS-CoV-2.

The results of the influenza surveillance can be found on our website.

They are also included in the weekly COVID-19 report (in Dutch • in French) which is also available on our website.

8. Mobility

8.1. WHERE DO THE MOBILITY DATA COME FROM?

Question added 30/03/2021 | Last updated 30/03/2021

The mobility data analyzed in the report are based on aggregated (anonymized) data sent to Sciensano by the telephone operator Proximus and from aggregated data made available in open access by Google. The raw data from Proximus are the number of journeys outside the postal code of origin (place of residence) proportionally to the number of Proximus clients living in this postal code.

Google creates the Community Mobility Reports in open access that aim to provide insights on the movement trends for different categories of places and on time spent at home. This aggregated data is collected from Google users who have turned on the Location History via their mobile device (phone or tablet). The aggregated data from Google is available via this link.
8.2. HOW IS THE MOBILITY DATA PROVIDED BY PROXIMUS PROCESSED?

Question added 30/03/2021 / Last updated 30/03/2021

Concerning the raw mobility data from Proximus (number of journeys outside the postal code of origin (place of residence)), following steps are taken before publishing:

- Calculation of the averages of the number of journeys per province and at national level.
- Subsequently calculation of a moving average over 7 days (to avoid weekend effects).
- Conversion of the results in percentages. The reference period is the pre-pandemic situation from 10 to 23 February 2020 (weeks 7 and 8 2020).
- If data should be missing for a given day, even though that is unlikely, a value is determined based on the average for the corresponding week.

8.3. WHAT CATEGORIES OF PLACES ARE USED BY GOOGLE AS MOBILITY INDICATORS?

Question added 30/03/2021 / Last updated 30/03/2021

- Residential: time spent at home.
- Workplaces: number of journeys to a workplace.
- Retail and recreation: number of journeys to places such as restaurants, cafés, shopping malls, amusement parks, museums, libraries and cinemas.
- Transit stations: number of journeys to places such as metro, bus and train stations, taxi services, ports, car rental services and rest areas.

For the categories “residential” and “workplace”, information is collected if Google users registered configure these places as such in their navigation app.

8.4. CONCERNING THE GOOGLE MOBILITY DATA, DOES A CHANGE IN ONE OF THE INDICATORS AUTOMATICALLY LEAD TO A CHANGE IN ANOTHER INDICATOR?

Question added 30/03/2021 / Last updated 30/03/2021

No. Each mobility indicator provided by Google has its own baseline. Furthermore, only a limited set of places is analyzed. A change in the trend of one mobility indicator does not therefore automatically lead to a change, proportional or not, in the trend of the other mobility indicators.

For example, if we note a decrease in the time spent at home, it is not guaranteed that an increase (or an increase of the same magnitude) will be observed in the number of journeys to the workplace at the same time.

Furthermore, changes in time spent at home (percentages) are generally more discrete than changes in journeys to places (number of journeys).
9. Molecular surveillance

9.1. WHAT IS MOLECULAR SURVEILLANCE?

The term "molecular surveillance" in the context of COVID-19 refers to the genetic characterisation of circulating viruses from PCR-positive samples, and thus the monitoring of the different circulating variants. This genetic characterisation is done by sequencing the whole genome of the virus (WGS), or by analysing specific regions that are of interest.

The identification of new variants can only be done by whole genome sequencing. However, once a variant is known, its genetic features can be targeted by specific analyses using simpler techniques.

Analysis of the genetic diversity of circulating viruses and its evolution over time is essential to understand the dynamics of the epidemic and to adapt measures accordingly.

9.2. HOW IS MOLECULAR SURVEILLANCE ORGANISED IN BELGIUM?

In Belgium, molecular surveillance, especially for whole genome sequencing, is organised by different clinical laboratories that collaborate within the WGS platform. Part of the positive samples are sequenced by the NRC since the beginning of the COVID-19 epidemic, but molecular surveillance has been expanding since December 2020.

It is impossible to sequence all positive samples diagnosed in Belgium, which is why molecular surveillance focuses on basic surveillance on the one hand, and active surveillance on the other.

Basic surveillance aims to sequence 5% of positive samples diagnosed in Belgium, taken at random from sentinel laboratories in order to represent all positive samples in the country (i.e. samples from the different regions of the country, from patients presenting the whole clinical spectrum). The results from the baseline surveillance should reflect the genetic diversity of the viruses circulating in the country.

Within active surveillance, sequenced samples are selected because they are of particular interest, such as a selection of travelers’ samples from red zones, outbreaks of unexpected course, or certain samples with particular PCR results, possible re-infections, etc... The results of active surveillance allow for better monitoring of genetic variation in these specific contexts.