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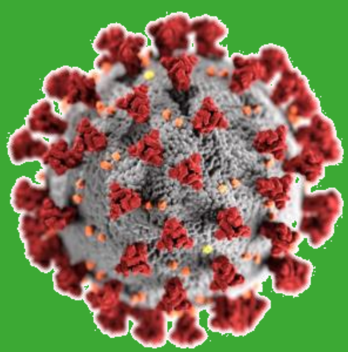
COVID-19 CLINICAL HOSPITAL SURVEILLANCE REPORT



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Epidemiology and public health – Epidemiology of infectious diseases

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L. DE MOT, Q. ROBALO, Y. DOCKX, M. VANDROMME, R. DE PAUW, B. SERRIEN, N. VAN GOETHEM, J. CHUNG, K. BLOT

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KEY FINDINGS

- Since the end of March up to now, the number of hospitalizations is still steadily decreasing.
- The largest group of the hospitalized COVID-19 patients in May 2023 is still made up by 80+'ers, closely followed by the group of 60-79 year olds. Overall, the distribution of these two groups fluctuate over the previous months, with the end of May being characterized by a increase of patients with an age above 80 years old (Figure 4).
- Concerning the **comorbidities**, it is still clear that largest group in May is those having two or more comorbidities. Comparable to the age groups, the distribution of these categories has also been fluctuating over the last months. Here, the beginning of May is also being characterized by a decrease in patients have two or more comorbidities, while the end of May the percentage of this group is increasing again. (Table1, Figure 8).

Recent findings (since after the summer of 2022):

- In the **final weeks of the year 2022**, a plateau phase was reached in the ninth wave as described by the number of COVID-19 hospital admissions (Figure 2, Table1) based on the number of COVID-19 cases and the degree of SARS-COV-2 discovered in the wastewater (weekly report, COVID-19 dashboard).
- The **median C reactive protein (CRP)** detected in the serum of hospitalized patients demonstrated an increase in October, November and December of 2022 (Figure 2) and this trend was also observed in ICU patients (Figure 16). This winter period was characterized by high circulation of respiratory viruses (such as influenza virus and respiratory syncytial virus (RSV)), which hospitals experienced under the form of pressure. A possible hypothesis for the CRP increase detected in COVID-19 patients is that there could be potential coinfections at play resulting in increased reaction of their immune system, resulting in more inflammation. There could also be an increased uptake of patients with COVID-19 and their registered, **increased CRP serum levels** could then be due to the initial (e.g. influenza or RSV) infection that they were admitted for. Supporting this hypothesis, in these final 3 months of 2022 there was an increase in the proportion of **infections that did not originate in the community** (Figure 10). In September – December more than 25% of all hospitalized COVID-19 patients had an infection that could not with certainty be attributed to an infection that started outside of a healthcare facility.
- There was a proportional increase in COVID-19 hospitalizations of younger patients of age category 0-5 years old in October and November of 2022 (Figure 4). This vulnerable population was targeted most by the RSV epidemic that was ongoing at that time, so in general more children were being hospitalized. The vigilant observation procedures for kids with fevers and the still active testing strategy for SARS-COV-2 infections in hospitals could have been one reason for this proportional increase in young COVID-19 patients.
- Also in the seventh, eighth and ninth wave the **older age categories** were affected most in terms of risk to be hospitalized for COVID-19 as the majority of all hospitalized COVID-19 patients was over 60 years old (Figure 4). During the ninth wave specifically, not only was the absolute number of hospitalizations higher than during the eight wave (Table 1, Figure 1), there were also more

80+'ers hospitalized compared to the previous wave (Figure 5). Interestingly, the proportion of patients with **cardiovascular disease** has been larger in October and December of 2022 than in previous waves. About 40% of all hospitalized patients had cardiovascular disease in the ninth wave (Figure 6).

- The increase in the number of hospitalizations that was observed by the end of September mainly originated from increased viral circulation in the community (Figure 2 and 10). With this increase in absolute number of hospitalizations (Table 1), the number of definite **healthcare-associated SARS-CoV-2 infections** among hospitalized patients was proportionally **low** compared to previous months (Figure 10). This is in line with what was observed during rises at the start of previous waves (e.g. November 2021; July 2022). In **October 2022**, the **increase in hospitalizations** appeared to have **slowed down**. Additionally, the case fatality rate (CFR) had slightly decreased in those two months.
- In September, there was a proportional increase in patients of older age (the median age was 76 years) (Figure 4 and 5), male patients (Figure 3), and patients with cancers and cardiovascular disease (Figure 6) compared to the patient profile observed in the summer. In October the proportion of the patients with these characteristics seemed to return to what was observed before the rise of the eight wave (Figure 5). About 20-25% of all hospitalized patients had no comorbidities in this eight wave (Figure 8).

TRENDS OVER TIME

Summary findings Omicron period (Nov 2021 – 2022):

- Omicron was first detected in Belgium in November 2021. The three most recent waves, i.e. the 5th , 6th, and 7th wave were defined by predominant viral circulation of different Omicron sub-lineages (p4-5 fact sheet). The peaks of the **5th wave (BA1), 6th wave (BA2) and ongoing 7th wave (BA5)** were reflected by three peaks in the number of hospital admissions. In these three waves there were **less hospitalizations and ICU admissions** of COVID-19 patients, both subsequently and in comparison to when Delta was predominant (Figure 1 and 12).
- The lower level of disease severity since Omicron emerged is also reflected **on the patient level** by a decrease of C-reactive protein (CRP) marker for inflammation in patients at admission and a decreased case fatality rate (CFR) (Figure 2).
- The median **age** of hospitalized patients and **proportion of patients with at least 2 comorbidities** have **increased** (Figure 2 and 8) since Omicron emerged and has then remained constant since April 2022. The median age was 73 years old during the Omicron period compared to 64 and 68 years old during the 3rd and 4rth Delta waves respectively. The prevalence and changing epidemiology of comorbidities is usually a reflection of the changing age of hospitalized patients (e.g. as the average age increases, so will the proportion of comorbidities). Comorbidities that were specifically represented more among the Omicron hospitalized population were cancer, cardiovascular disease, chronic renal disease, or cognitive disease, while obesity or immunodeficiency were proportionally represented less compared to the profile of patients admitted during the 3rd and 4th waves (Figure 6 and 7). The same trend was observed in the ICU for all these comorbidities, with in particular a strong proportional increase in uptake of patients with cardiovascular disease and strong proportional decrease in obese patients (Figure 19 and 20). The comorbidities for which an increase was observed are known to be strongly associated to age, while obesity is more prevalent across a broader age range (Figure 20).
- The combination of less strict social restriction measures in society and hospitals, high transmissibility of Omicron, and immune escape by different sub-lineages resulted in higher viral circulation in 2022 compared to 2021. There was an **increase in hospitalizations of children aged 0-5 years** (both symptomatic cases and cases detected after screening) since Omicron emerged (Figure 4). This can be explained by a standard hospital policy to admit children with a fever combined with a period of high viral circulation characterized by more cases with fever. In times of high viral circulation, these hospital procedures translated in a stay in the hospital for observational purposes. Nonetheless, the length of stay in the hospital was short (median length of stay of 2 days during the Omicron period) and there were **no deaths** during all of the 5th, 6th and 7th wave in these young, hospitalized children. This indicates that these children were **not** hospitalized for the reason of suffering from **severe disease**. Furthermore, there has been no evidence that Omicron infections in pediatric patients resulted in an increased risk of severe COVID-19 disease compared to when infected with previous variants (p48 fact sheet).

- During the previous waves, it has been shown that men are more predisposed to end up in the hospital with COVID-19 and to require ICU admission (Figure 3 and 17). While this pattern of **gender distribution** is still observed in the ICU (Figure 17), hospitals in general appear to be equally occupied by men and women with COVID-19 since the beginning of 2022 (Figure 3). More recently, the proportion of women in the hospitals is even slightly increased compared to that of men. This relates to the older age of the hospitalized population after Omicron (Figure 4).
- During the 5th, 6th and 7th wave the proportion of **nursing home residents** in the hospital was increased (~10% of all hospitalized patients) compared to low percentages during the 3rd and 4th wave (<5%), however it remained lower than what was observed during the 1st and 2nd waves (up to 25%) (Figure 9 and 21).
- Since the start of 2022, ~25% of all hospitalized COVID-19 patients originated from a **health-care associated SARS-CoV-2 infection** (Figure 10). This is a higher proportion than what was observed during previous waves before the emergence of Omicron and the same trend was seen in the ICU (Figure 23). Caveats are that these proportions are 1) based on lower absolute numbers of hospitalizations than before Omicron and 2) include infections acquired in nursing homes outside the hospital as well as probable and iatrogenic infections (so unconfirmed if nosocomial origin). Of all **symptomatic** COVID-19 patients in the hospital during the Omicron period, ~3% were definite healthcare-acquired (i.e. developed COVID-19 symptoms 14 days after admission), while this was less than 1% during the 3rd wave and ~2.5% during the 4th wave (Figure 10).
- During the peaks of the 5th, 6th and 7th wave, approximately 1 out of 6 patients out of all hospitalized COVID-19 patients was admitted to the **ICU**, while during the peak of the 3rd wave, approximately 1 out of 4 hospitalized patients was admitted into ICU (Figure 12). During the Omicron period, the ICU was mainly occupied by patients of the age category 60-80 years (55.2%) and 80+ patients (20%) (Figure 18). Before Omicron (during the 3rd and 4th wave), more beds in the ICU were occupied by younger patients of age category 40-60 years (30%) in addition to patients of age category 60-80 (55%) with a smaller percentage of 80+ elderly (8%) (Figure 18). The median age of a patient during the Omicron period was 69 years old compared to 63 years old during the 3rd wave and 66 years old during the 4th wave. Since Omicron emerged, ICU patients have required less invasive ventilation with a continuous decrease from ~40% that were invasively ventilated at the end of 2021 to ~20% since May 2022 (Figure 24 and 25). Similarly, the length of stay in the ICU was shorter than before Omicron (Figure 27). The median length of stay during the Omicron period was 4 days compared to 9 days and 8 days during the 3rd and 4th wave respectively. Thus, despite older age of ICU patients during the Omicron period, there was a shorter time of stay in the ICU and decreased use of invasive ventilation. This is in line with previous findings that Omicron is associated with a milder disease profile in all age categories (p48 fact sheet). These favourable observations in the ICU are likely also a result of the protective effects of the primary vaccination schedules and the booster campaigns in vulnerable and elderly populations.

Summary findings 2021 (before Omicron emerged):

- 2021 was partly characterized by vaccination of the Belgian population in different phases; i.e. prioritising groups to receive a primary vaccination schedule in the following order: 1) nursing home residents and personnel, 2) inhabitants of collective care institutions, 3) health care workers, 4) elderly of 65 years and older, 5) people between 45-65 years old with comorbidities, 6) people with indispensable jobs for society and economic jobs, and 7) the general population. The **number of deaths** has been **decreasing** since the start of the vaccination campaign in January 2021.

- The (protective) effects of subsequently vaccinating vulnerable groups were reflected in changes in the profile of hospitalized patients over time. In the **first part of 2021** the CFR, median age and proportion of patients with more than 2 comorbidities decreased steeply until the summer of 2021 (Figure 2). This reflects the prevented hospitalizations of older people, as well as nursing home residents and people with comorbidities with a higher risk of severe disease and death (higher frequency among older people as well), because these people received their vaccines first, since January 2021. **After the summer of 2021** vaccine uptake was high, especially among patients most at risk to be hospitalized. The demographic profile became similar as before the vaccination campaign, potentially influenced by waning immunity among elderly who received their primary schedule often six or more months earlier, but with lower disease severity evidenced by a lower CFR.
- Compared to the 1st and 2nd wave, the proportion of hospitalized **nursing home residents** was low during the 3rd and 4th wave (Figure 9). Again, this can be related to the high uptake of the primary vaccination schedule among nursing home residents at that time (thematic report vaccination in Belgian nursing homes). Additionally, they were a priority group for early administration of a 3rd dose in October 2021. The continuously low proportion during the 4th wave could therefore reflect either the continued protective effect of a primary vaccination schedule or the 3rd shot against severe disease.
- The proportion of hospitalized patients with **healthcare-associated SARS-CoV-2 infections** (probable and definite, i.e. diagnosed >7 days after hospital admission) decreased during the 3rd wave and increased again during the 4th wave (Figure 10). The decrease coincides with the start of the vaccination campaign in January 2021 targeting hospital-affiliated healthcare workers and the vulnerable elderly population as well as the distribution of booster doses for those aged 65+ and heath care workers in October and November 2021 respectively. The increase in the summer of 2021 could possibly be related to waning immunity (as boosters were not yet distributed), less strict social restriction measures, and is also influenced by local hospital infection prevention measures.
- Of the patients that were hospitalized during the 3rd and 4th wave, 1 out of 4 had to be admitted to the **ICU** (Figure 12). This proportion did not change much throughout 2021 and invasive ventilation was continuously utilized throughout 2021 (although it was less used than during the first 2 waves and reached a plateau since the vaccination campaign) (Figure 24 and 25). The incidence rate of ICU admissions differed between unvaccinated and people that received a primary vaccination schedule. (For more information on vaccination status, please refer to the cumulative incidences and absolute numbers of hospitalizations, ICU, deaths of the last 14 days per vaccination status, age, and region in annex 6.6 of the COVID-19 weekly report.)

Summary findings 2020:

- The 1st and 2nd wave of the COVID-19 pandemic in 2020 were characterized by a **high number of deaths** among which many nursing home residents, vulnerable elderly and people with comorbidities in the context of a **lack of availability of vaccines**.
- From the 2nd wave onwards, **dexamethasone** has become standard of care for hospitalized patients with COVID-19 and hypoxemia (p53 fact sheet). Dexamethasone has been shown to improve outcomes in clinical trials with less patients requiring ICU admission as a result of critical illness. As a result, ICU patients admitted from the 2nd wave and onwards were those that had clinically deteriorated under first-line treatment and thereby there were proportionally more patients with severe disease (higher serum CRP and case-fatality rate, Figure 2).
- **ICU** patients admitted in the 1st wave were more frequently invasively ventilated and stayed longer in the ICU compared to those admitted during the 2nd wave (Figure 24 and 25). Changes during the 2nd wave could be a result of changing practices and development of protocols as clinicians acquired more experience and scientific evidence on how to treat critically ill COVID-19 cases.

1. INTRODUCTION

Note : From May 16th the data collection, which is done via the FPS Public Health (FOD Volksgezondheid, SPF Santé publique) as of 2nd of March, is simplified following the transition to management level 1. Hospitals report prevalence on one day a week and some variables are removed from the survey, such as those related to the origin of the patients and the discharges. Important to mention is that a part of the data that previously, due to an IT issue, could not be sent by the Vivalia hospital network in Luxembourg, are now included retrospectively. These data span the second half of 2022.

Note : Due to low sample size, interpretation of data of the month of June is not advisable.

The surveillance of COVID-19 hospitalized patients is based on 2 components:

- The Surge Capacity Surveillance: This exhaustive surveillance collects daily aggregated information on COVID-19: such as number of hospital admissions, hospital discharges, hospital-wide and intensive care unit (ICU) bed occupancy, and mortality. Reporting to this surveillance is compulsory. Its aim is to describe the occupancy levels of hospitals and intensive care by patients with COVID-19.
- The Clinical Hospital Surveillance: This non-exhaustive surveillance collects clinical data on patient level upon hospital admission, hospital discharge and ICU discharge. These data are collected in three separate forms. The ICU discharge form was only implemented from the 14th of September 2020. The aim of this surveillance is to study the demographics and outcomes of hospitalized patients with COVID-19.

This automated periodical report describes the findings of the Clinical Hospital Surveillance from the beginning of the epidemic in February 2020 up to the present. Included patients are diagnosed by polymerase chain reaction (PCR) test, chest computed tomography (CT) scan or rapid antigen test. When presenting the patient demographics and outcomes, they are stratified into two groups: all hospitalized patients and a subgroup of patients admitted to ICU.

The Clinical Hospital Surveillance is not exhaustive, but does capture approximately 2/3rds of all hospitalized Belgian COVID-19 patients. The surveillance system collects detailed information through an admission, discharge and ICU form, which takes time to fill in (1 week). Delays in data registration lead to incomplete data for the most recent weeks. Clinical information is obtained through forms separately filled in at admission and at discharge. This means that demographic information (age, sex, comorbidities) is registered earlier than clinical outcomes (ICU transfer, invasive ventilation, death), because the patient has yet to complete their hospitalization. Demographic information on hospitalized patients is registered after approximately 1-2 weeks. Clinical outcomes, such as ICU admission or death, are only registered at hospital discharge, approximately 2-4 weeks after hospital admission.

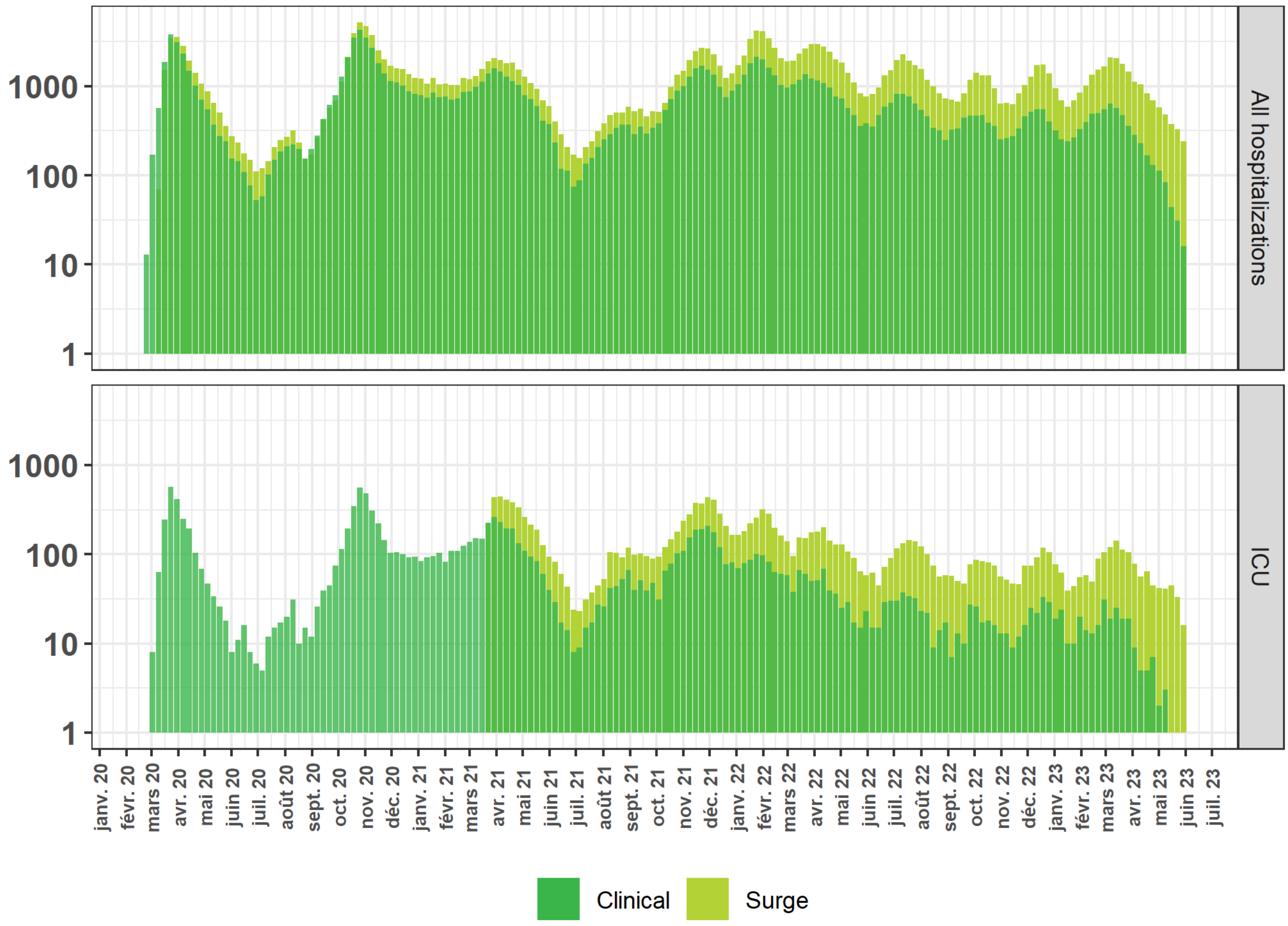
Whether the patient was admitted into ICU is registered in the discharge form. Because of this, demographic information on ICU patients is only available at the moment of hospital discharge. Furthermore, as ICU patients remain hospitalized for 2-3 weeks, their profile may only be available approximately 4 weeks after their initial hospital admission. To avoid misinterpretation of trends over time we do not report ICU data for the most recent 3 weeks. Caution should be exercised when interpreting the most recent reported weeks as they are liable to change as more data is registered over time.

Because this clinical data is received with a delay, the results for the most recent weeks are liable to change as more data is collected. Furthermore, specific data (such as ICU transfer, complications, outcomes and death) are only available when the patient is discharged from the hospital. This can bias the results of the most recent weeks since either patients that die earlier or are discharged alive earlier are represented.

The time periods have been divided into a first wave (February to June 21st 2020), first interwave (June

22nd 2020 – 31st of August 2020), second wave (August 31st 2020 to February 14th 2021), third wave (February 15th 2021 - 27th June 2021), second interwave (28th June 2021 - 3rd October 2021), fourth wave (4th October 2021 - 26th December 2021), fifth wave (27th December 2021 – 27th February 2022), sixth wave (28th February 2022 - 29th May 2022), seventh wave (30th May 2022 - 12th September 2022), eight wave (12th September 2022 - 20th November 2022), ninth wave (21st November 2022 - 22nd January 2023), and tenth wave (23 January 2023 - onward)

Figure 1: Sample sizes in the database based on admission date (i.e. number of daily admissions).[1]



[1] The Surge Capacity Surveillance started collecting the new number of ICU admissions only from 25-03-2021 onwards.

Table 1: Sample sizes in the database based on admission date (i.e. number of daily admissions).

Week	All hospitalizations	ICU
2022-11-21	333	12
2022-11-28	462	16
2022-12-05	514	25
2022-12-12	549	22
2022-12-19	553	33
2022-12-26	403	29
2023-01-02	319	19
2023-01-09	253	24
2023-01-16	239	10
2023-01-23	266	10
2023-01-30	332	20
2023-02-06	393	14
2023-02-13	486	13
2023-02-20	501	16
2023-02-27	547	31
2023-03-06	634	19
2023-03-13	570	25
2023-03-20	474	19
2023-03-27	359	19
2023-04-03	282	9
2023-04-10	230	5
2023-04-17	167	5
2023-04-24	130	7
2023-05-01	113	2
2023-05-08	84	3
2023-05-15	44	
2023-05-22	31	
2023-05-29	16	

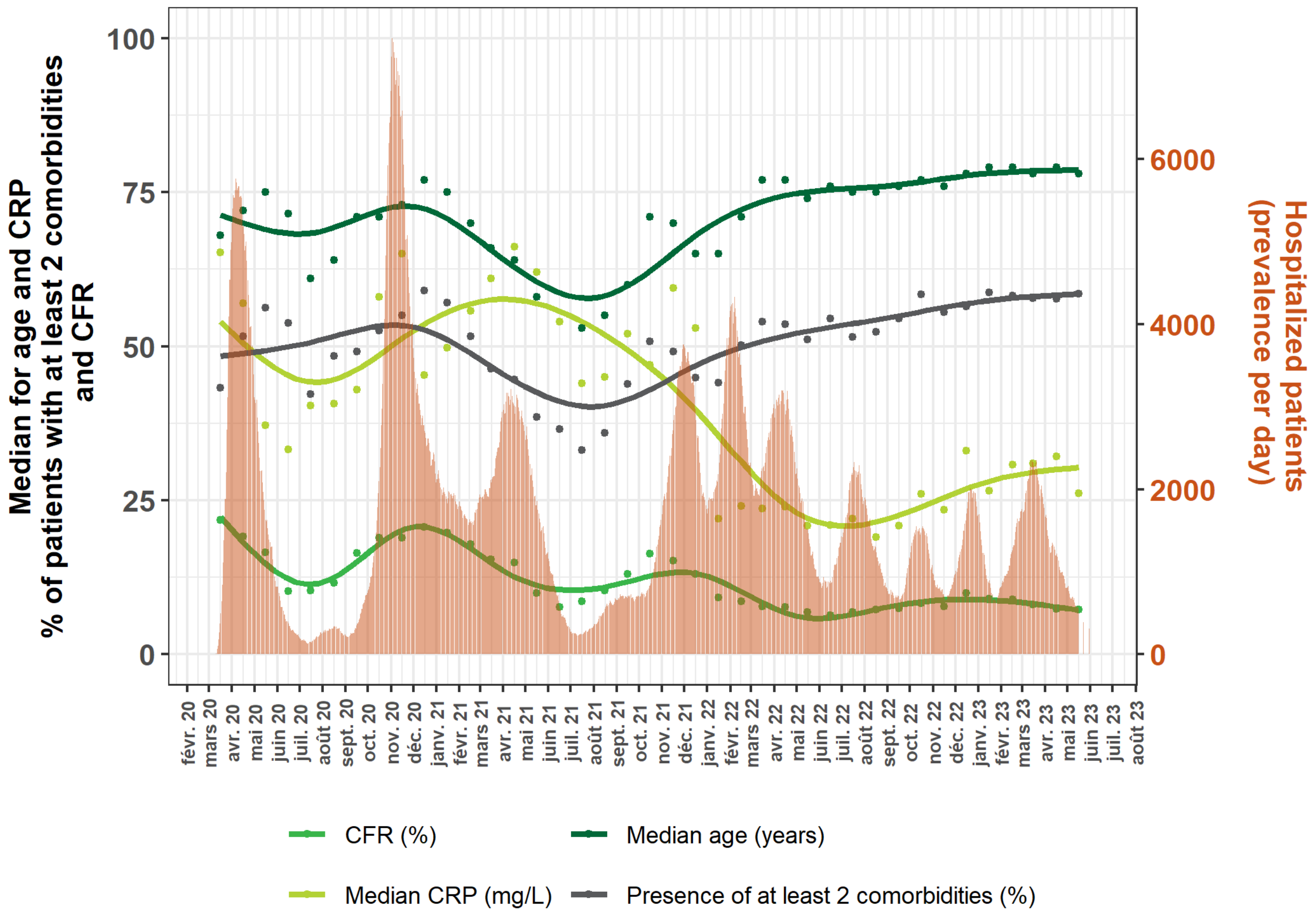
2. HOSPITALIZED PATIENTS

2.1. HOSPITAL AT A GLANCE

Figure 2: Hospital at a glance.

This ‘At a glance’ figure provides an overview of the crude case fatality rate and its relation to specific markers over time:

- Hospital occupancy in Belgium
- Median age of patients at hospital admission
- Serum C-reactive protein (CRP) at admission as a marker of inflammation
- Proportion of admitted patients with at least 2 comorbidities at admission
- Case-fatality rate (CFR)



2.2. HOSPITALIZED PATIENT DEMOGRAPHICS

Figure 3: Gender distribution (all hospitalized patients), per week.

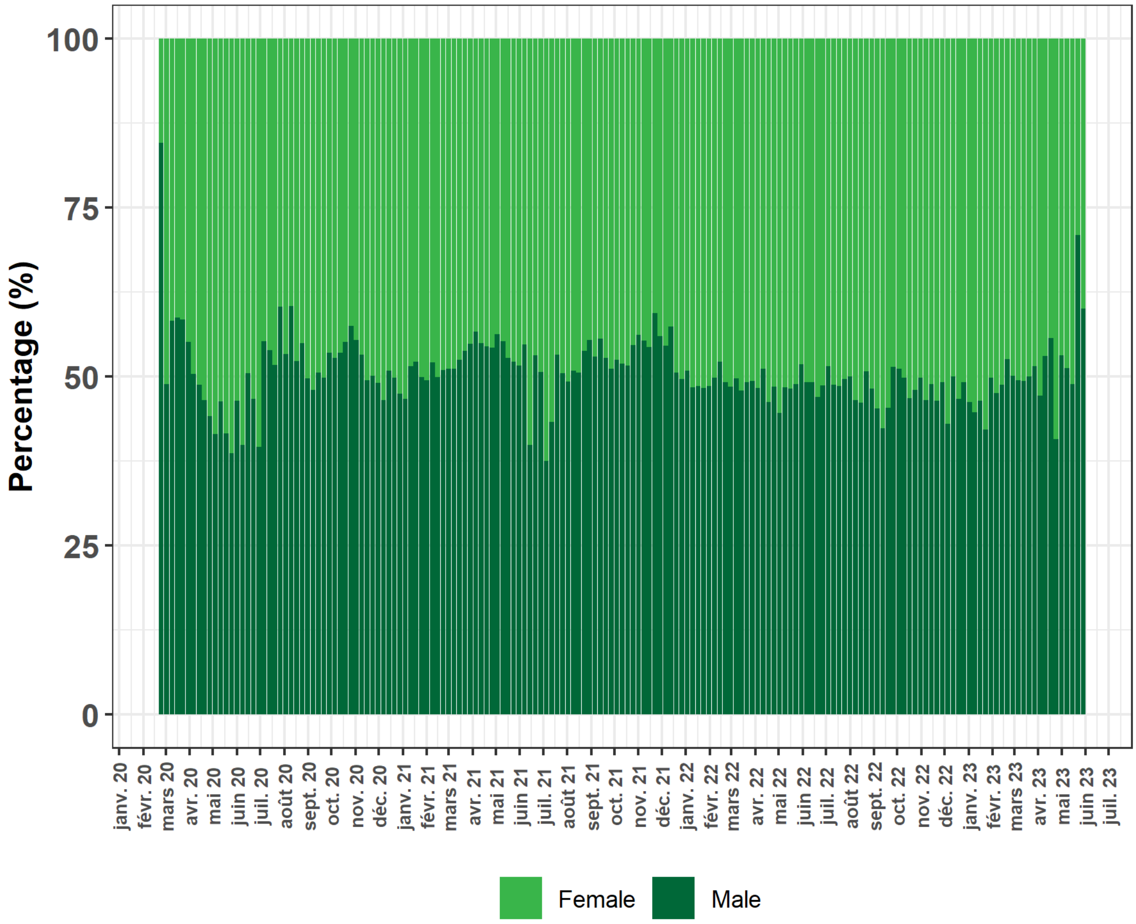


Figure 4: Distribution of age categories (all hospitalized patients), proportionally, per week.

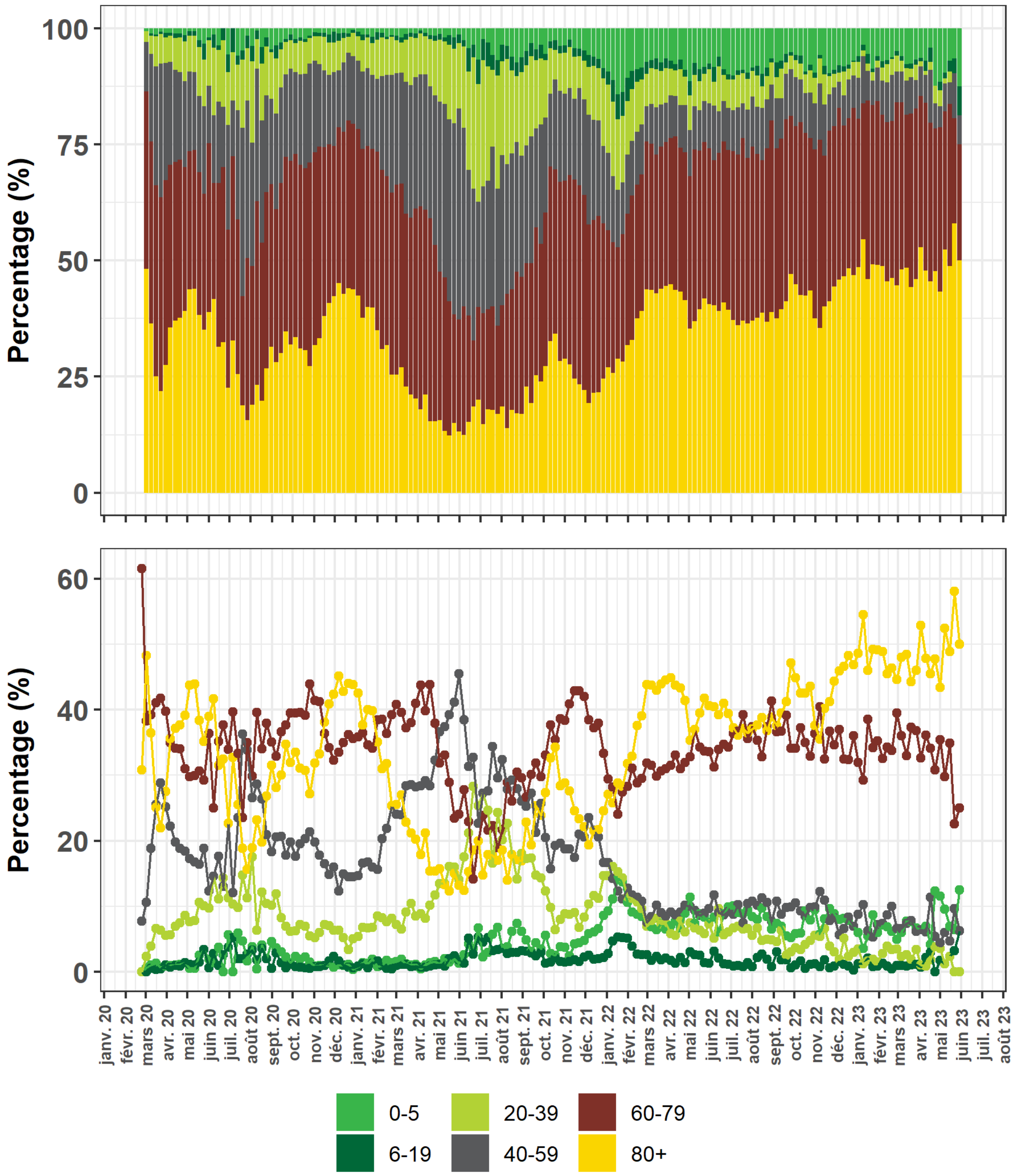


Figure 5: Distribution of age categories (all hospitalized patients), in numbers of patients, per week. These patient numbers are calculated based on the proportional age distribution (above), projected on the number of patients reported in the surge capacity surveillance.

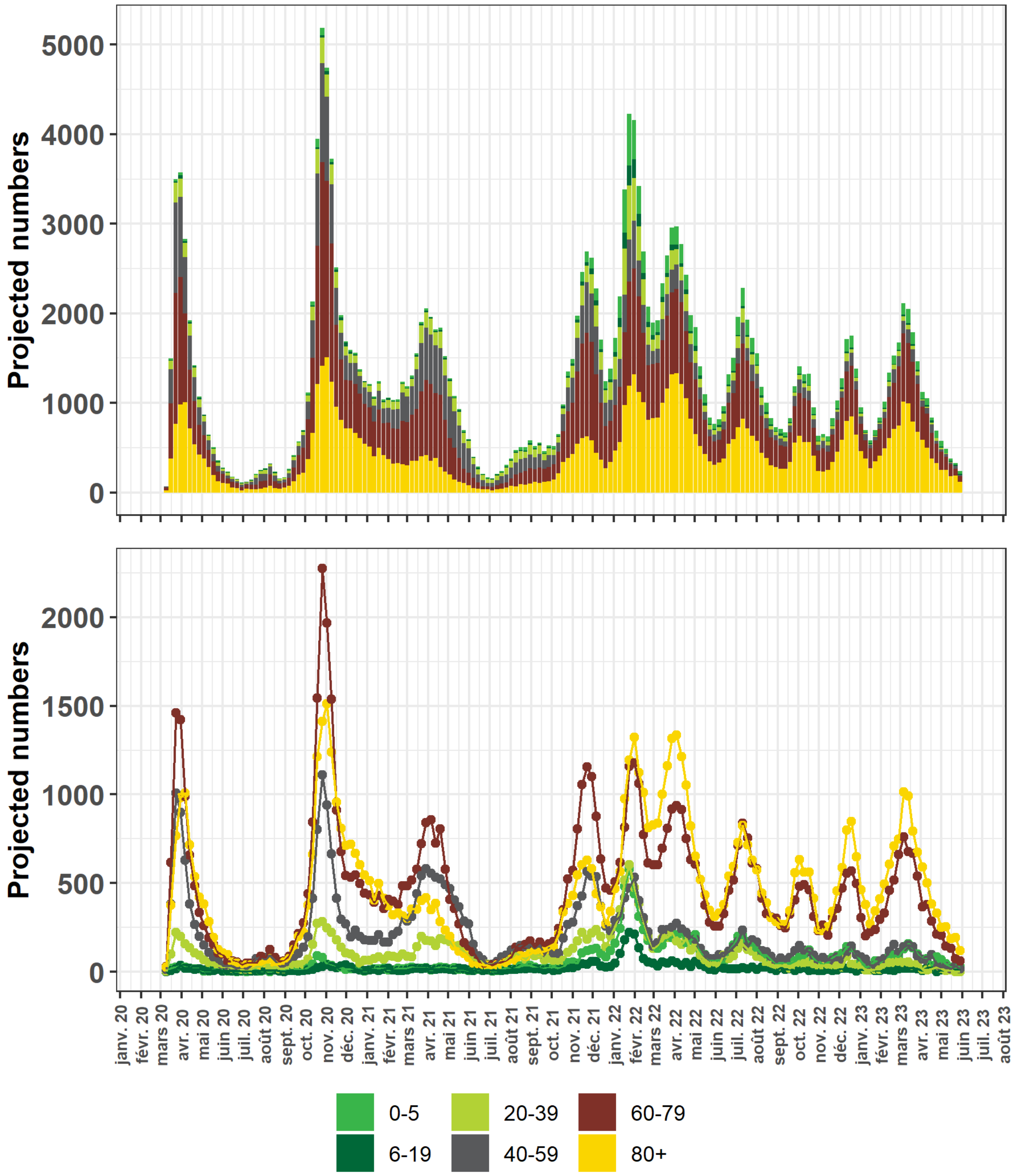
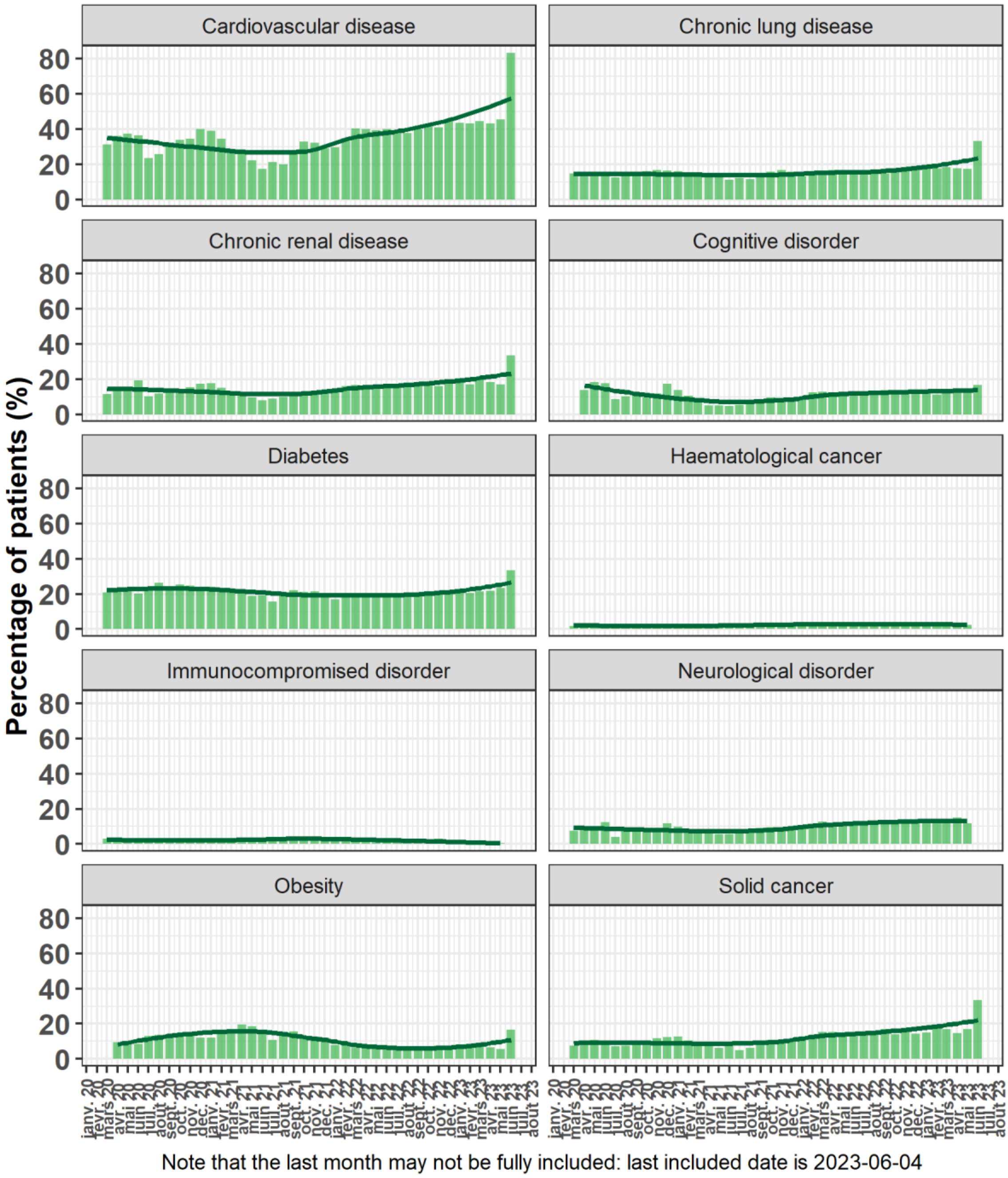
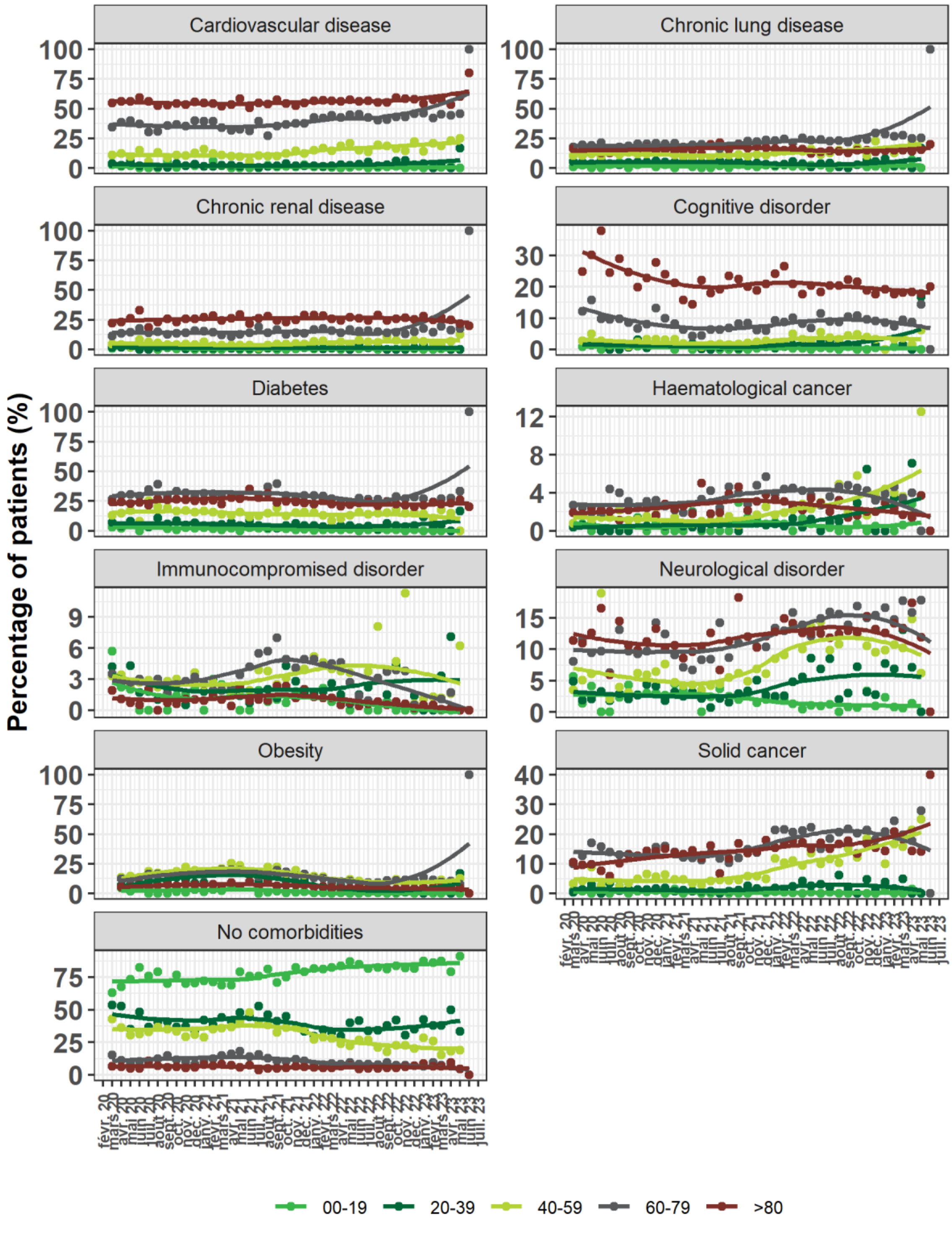


Figure 6: Comorbidities distribution (all hospitalized patients), per month.[2]



[2] The trend line is based on a smoothing function, and thus does not represent the observed data. Comorbidity trends per month can be viewed individually in the interactive EpiStat COVID-19 dashboard (https://epistat.wiv-isp.be/covid/covid-19.html)

Figure 7: Comorbidities distribution (all hospitalized patients) per age category, per month.

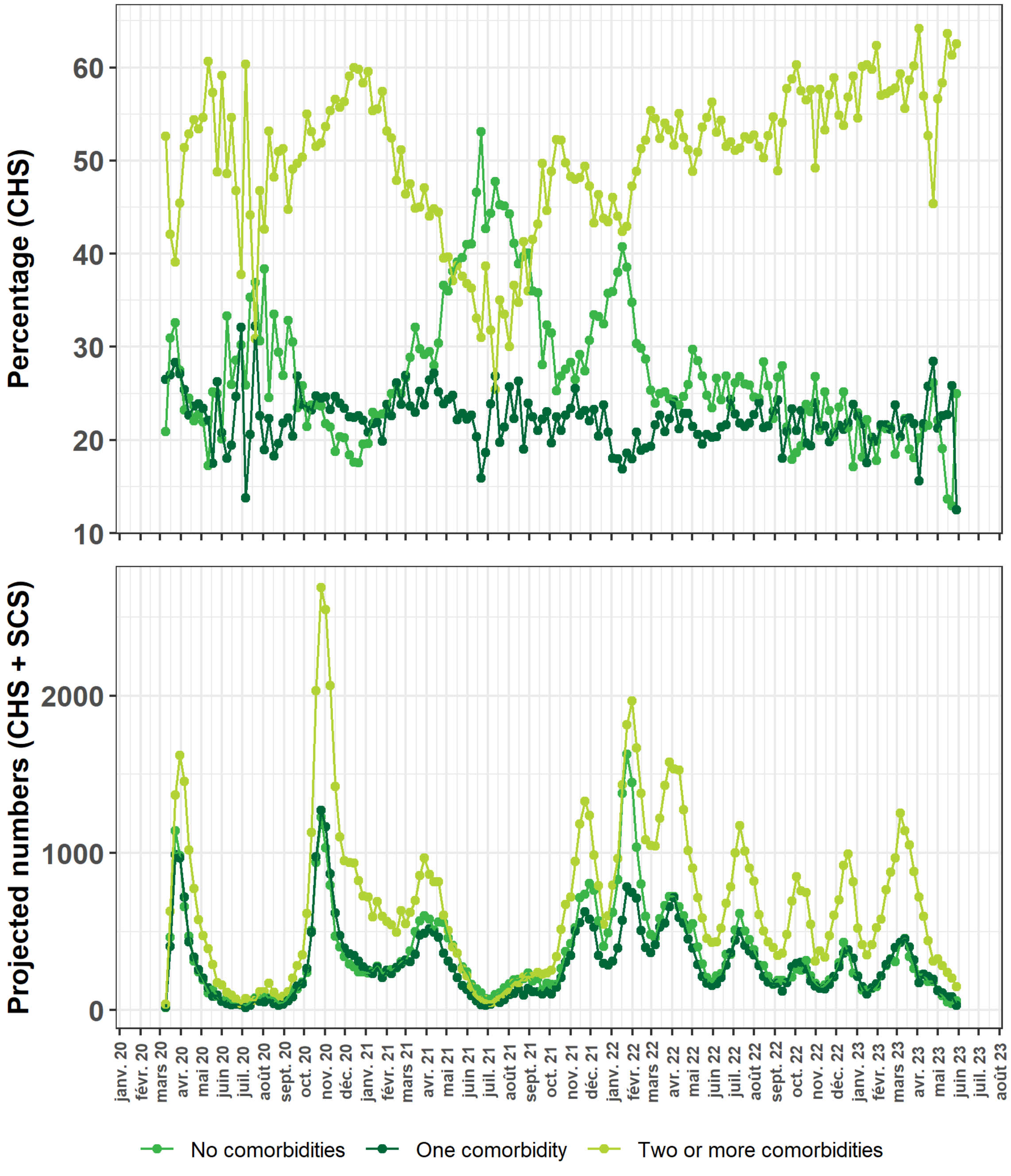


Note that the last month may not be fully included: last included date is 2023-06-04

2.3. PATIENT PROFILE

Patient profile per vaccination status i.e. figures on hospitalized breakthrough cases were omitted from this report. Information on the impact of vaccination has been centralized in section 3.4 Vaccination of the COVID-19 weekly report (In Dutch: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Weekly_report_NL.pdf, in French: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Weekly_report_FR.pdf). Here, a more stable estimate for vaccine effectiveness is reported in addition to vaccine coverage in Belgium. Please refer to sections 10.7 and 10.8 of the FAQ document to inquire about the methodology (in Dutch: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_NL_final.pdf, in French: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_FR_final.pdf).

Figure 8: The proportion of number of comorbidities per hospitalised patient, from the Clinical Hospital Surveillance (CHS) and the projection of these proportions on the total number of hospitalised patients reported in the Surge Capacity Surveillance (SCS).[3]



[3] The following comorbidities are considered in this plot: cardiovascular disease, high blood pressure, diabetes, chronic renal disease, chronic liver disease, neurological disorder, cognitive disorder, immunocompromised disorder, chronic lung disease, solid cancer, haematological cancer, transplant, obesity.

Figure 9: Distribution of nursing home vs non-nursing home residents (all hospitalized patients), per week.

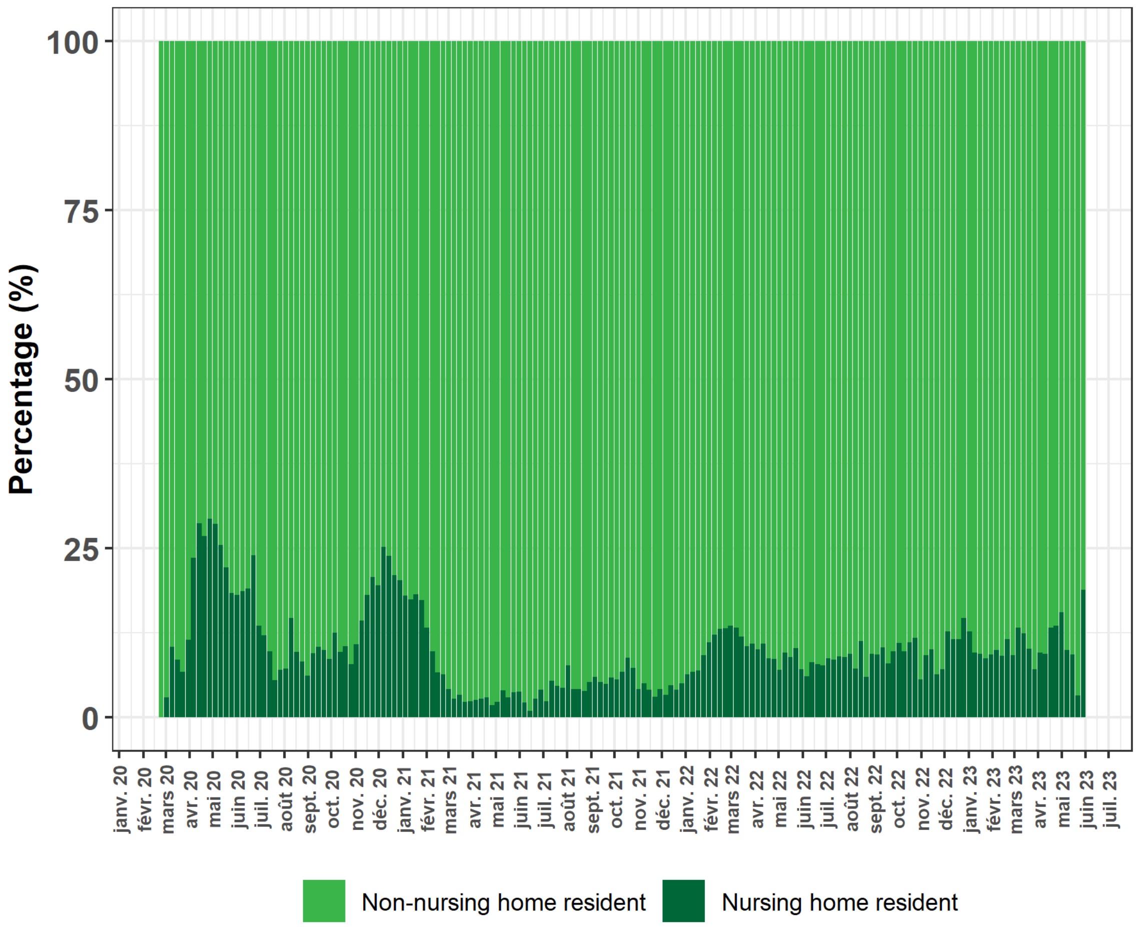
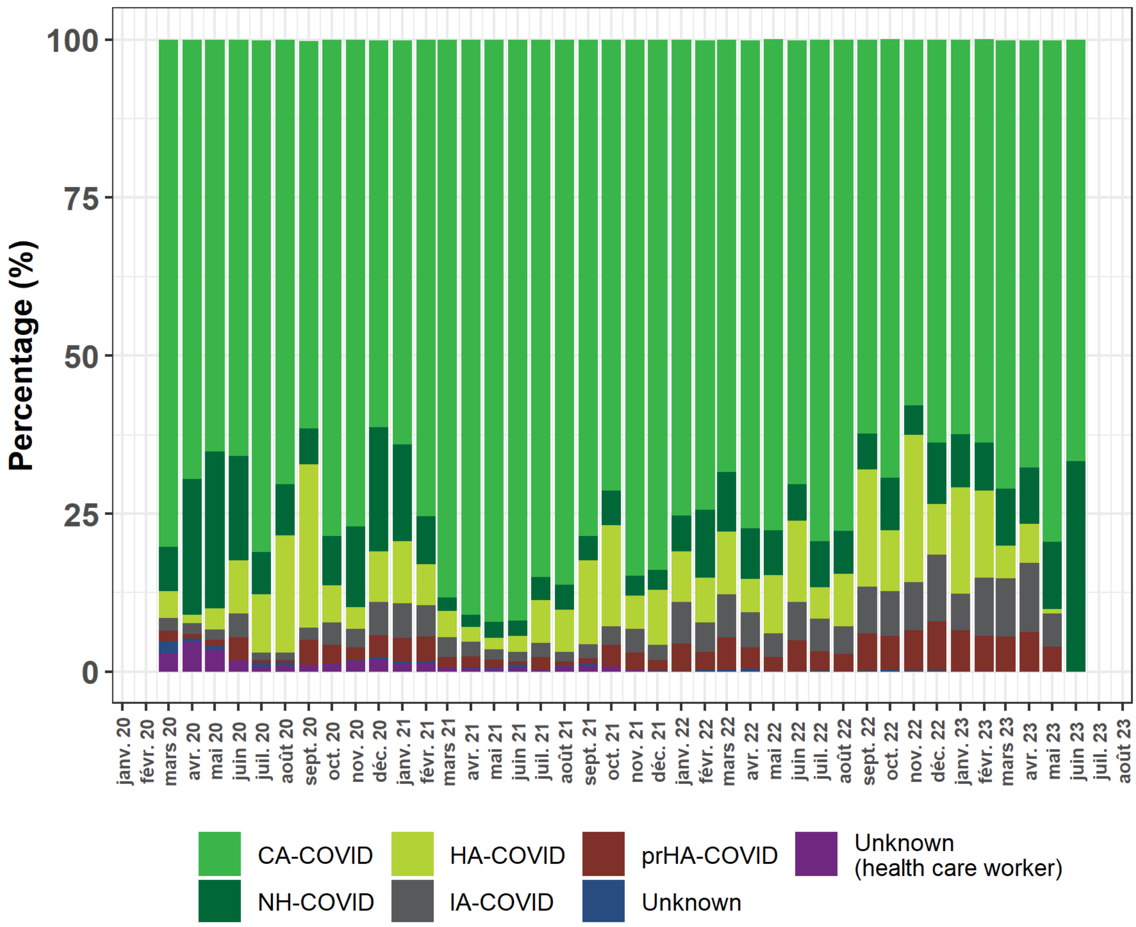


Figure 10: Distribution of healthcare-associated SARS-CoV-2 infections (all hospitalized patients), per week.[4]



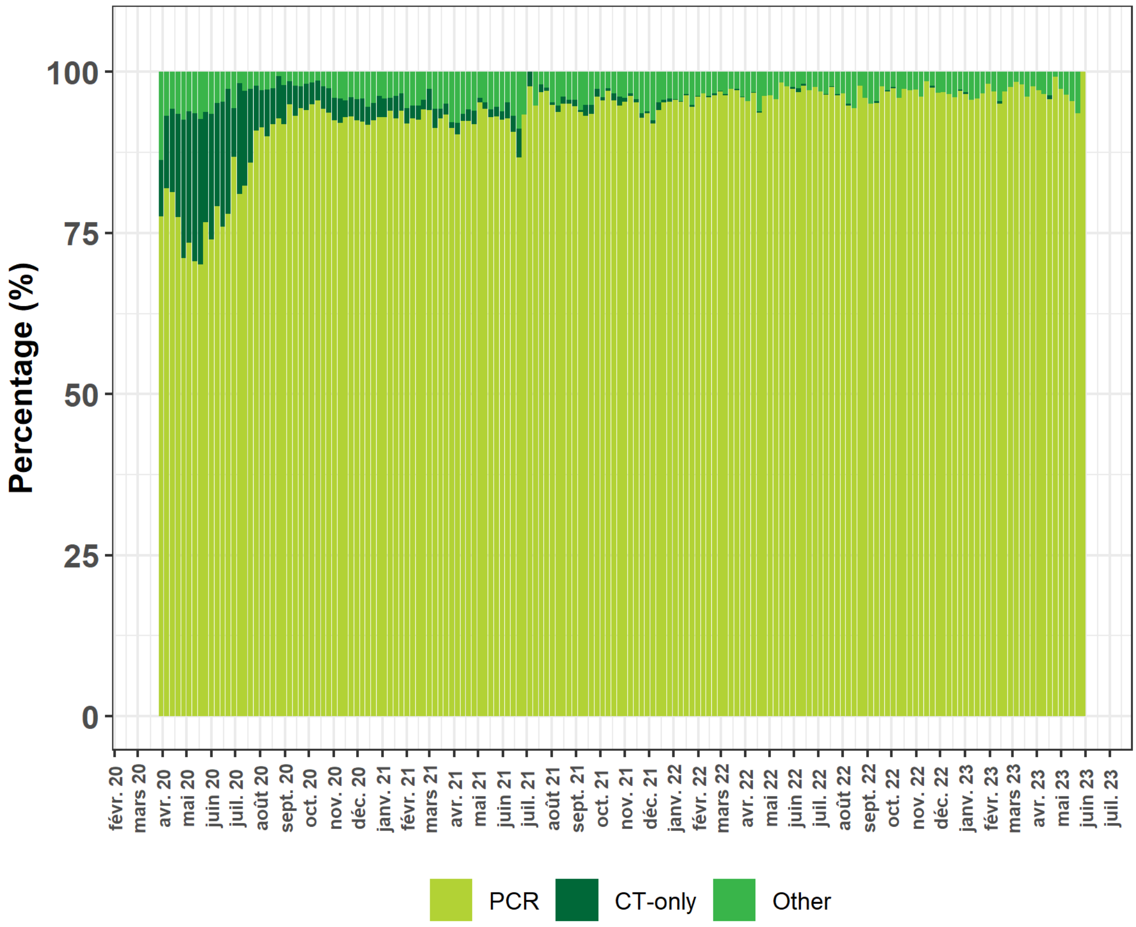
Time-to-infection after hospitalization was defined as days between hospital admission and date of symptom onset. In a small minority of cases the date of symptom onset was missing, in which case the date of diagnosis was used instead.

- CA-COVID: Community-associated COVID: up to 2 days after admission.
- NH-COVID: Nursing home-associated COVID: nursing home resident with symptom onset up to 2 days after admission.
- HA-COVID: Definite healthcare-associated COVID infection: >14 days after admission.
- prHA-COVID: Probable HA-COVID: on days 8-14 after admission.
- IA-COVID: Indeterminate-association COVID: on days 3-7 after admission.

These definitions are based on the European Centers for Disease Control and Prevention classification criteria (https://www.ecdc.europa.eu/en/covid-19/surveillance/surveillance-definitions). At the moment of writing these are pragmatic definitions that account for a median incubation period of 6 days (interquartile range 4 – 9 days). However, the validity of this classification system has not yet been extensively researched.
Because the surveillance does not ask whether there was a strong suspicion in case of COVID infections that develop at days 3-7 after hospital admission, these cannot be classified as community or healthcare-associated.

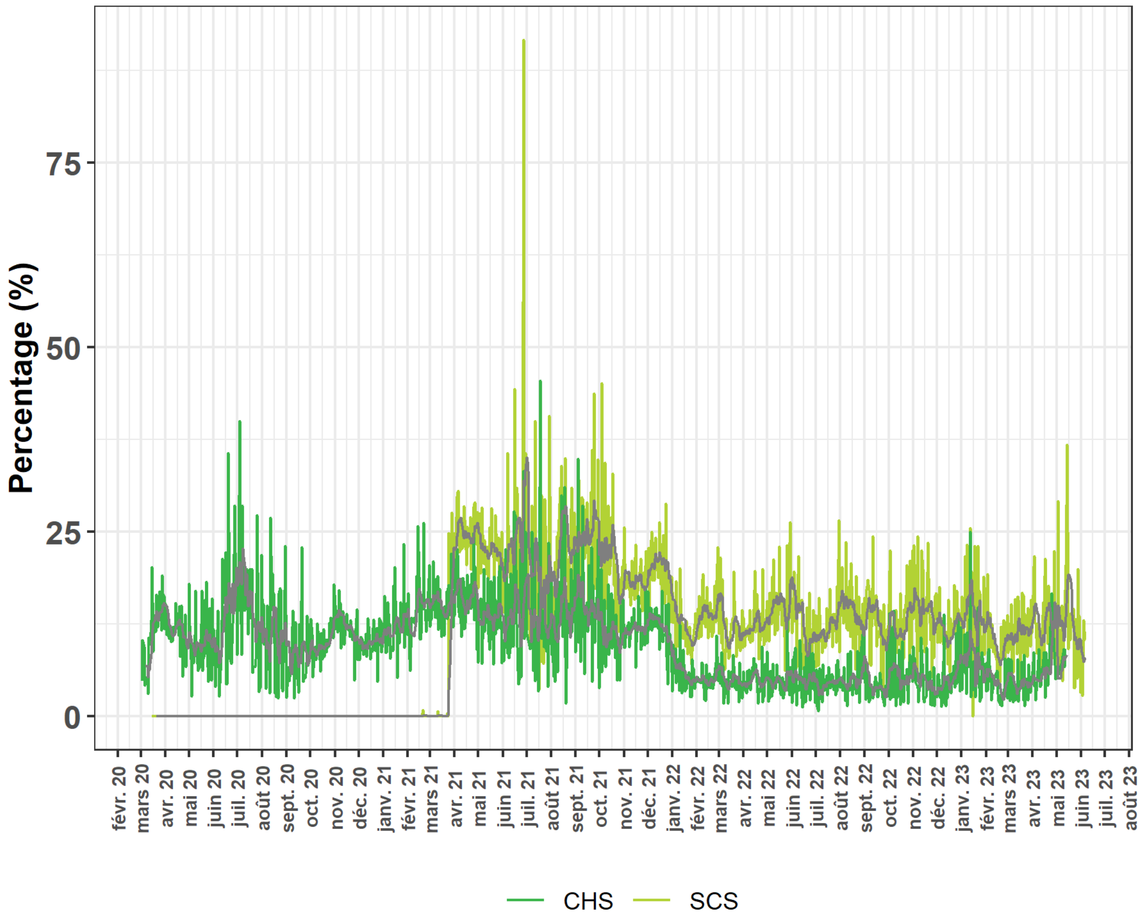
[4] The data collection of infections in health care workers has been discontinued since 14-11-2021. This explains why the percentage appears as 0 for the 'Unknown (health care worker)' category since that time point.

Figure 11 : Method of COVID-19 diagnosis, per week.[5]



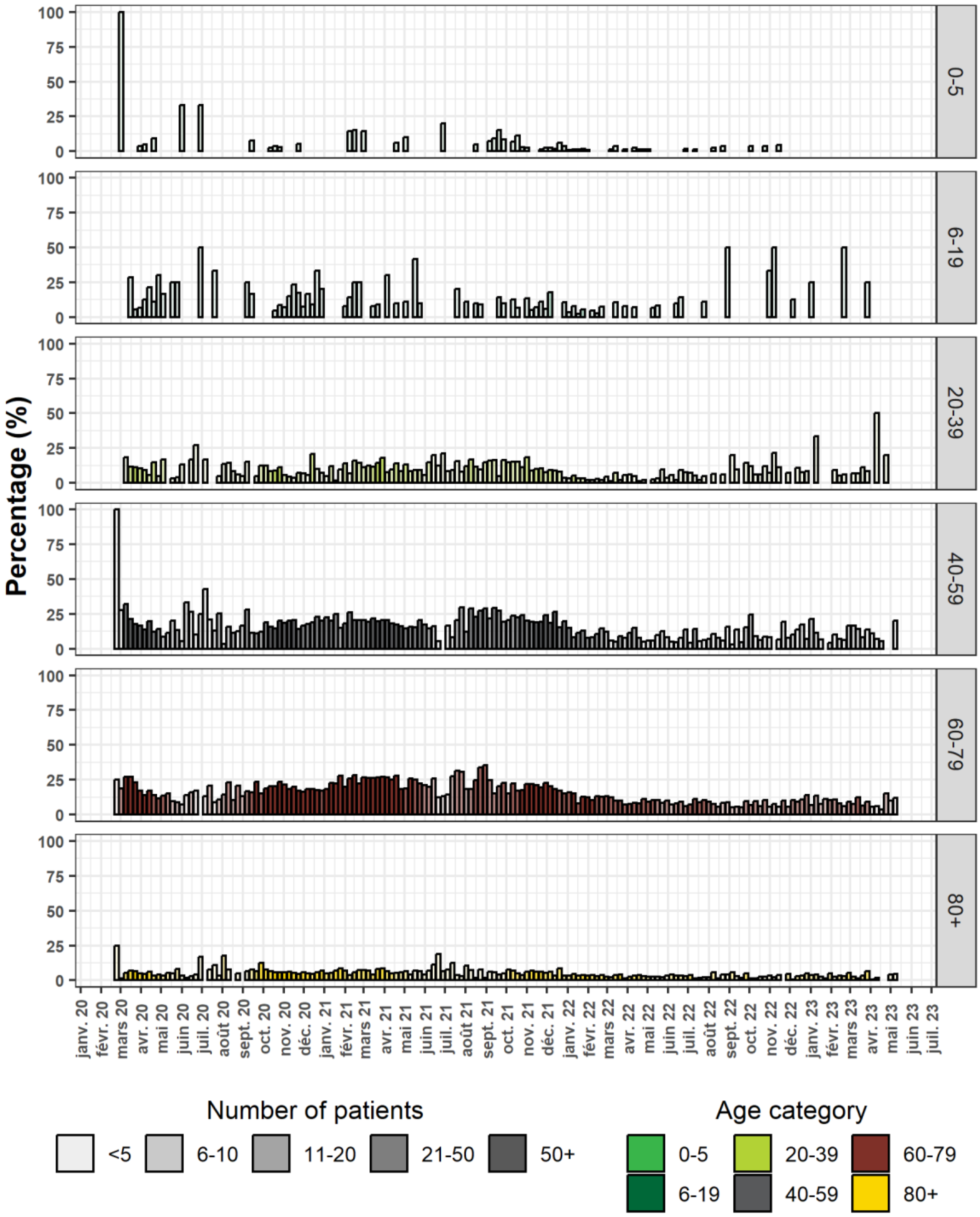
[5] PCR includes all patients that were diagnosed by PCR, CT-only includes patients that were only diagnosed with CT, and other includes patients diagnosed by rapid Ag test in combination with or without CT.

Figure 12: ICU admissions among all hospitalized patients over time.



The COVID Clinical Hospital Surveillance (CHS) does not collect information in real-time, which leads to a bias towards lower % ICU admission rates in the most recent weeks. On top of this, the inclusion criteria are different compared to the Surge Capacity Surveillance (SCS) which leads to different proportions of ICU admissions. The Surge Capacity includes only those patients that are hospitalised due to a SARS-CoV-2 infection and not those that were identified due to systematic screening.

Figure 13: ICU admissions among all hospitalized patients per age category over time.



The most recent weeks are biased towards lower % ICU admissions because ICU patients require time to be discharged and registered in the surveillance.

Figure 14: Time between hospital admission and transfer to ICU, per week.

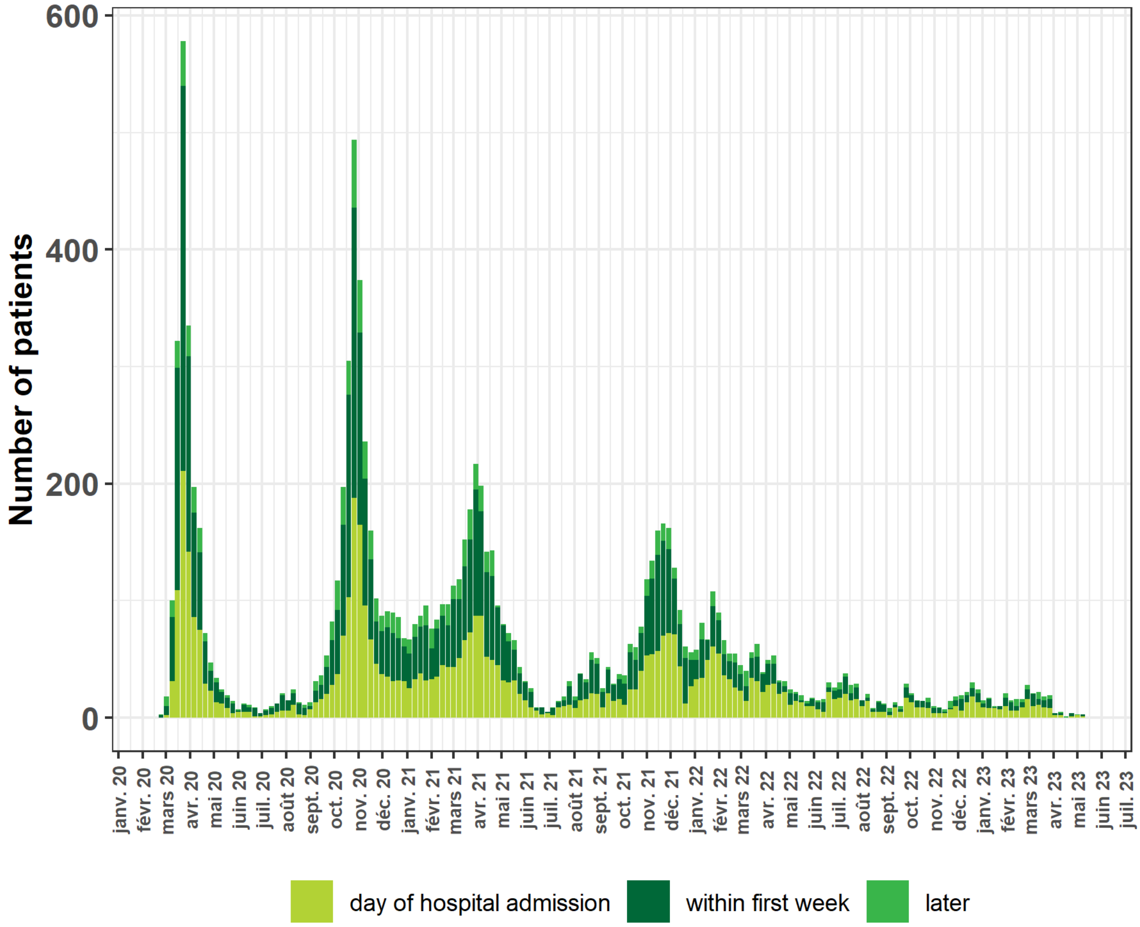
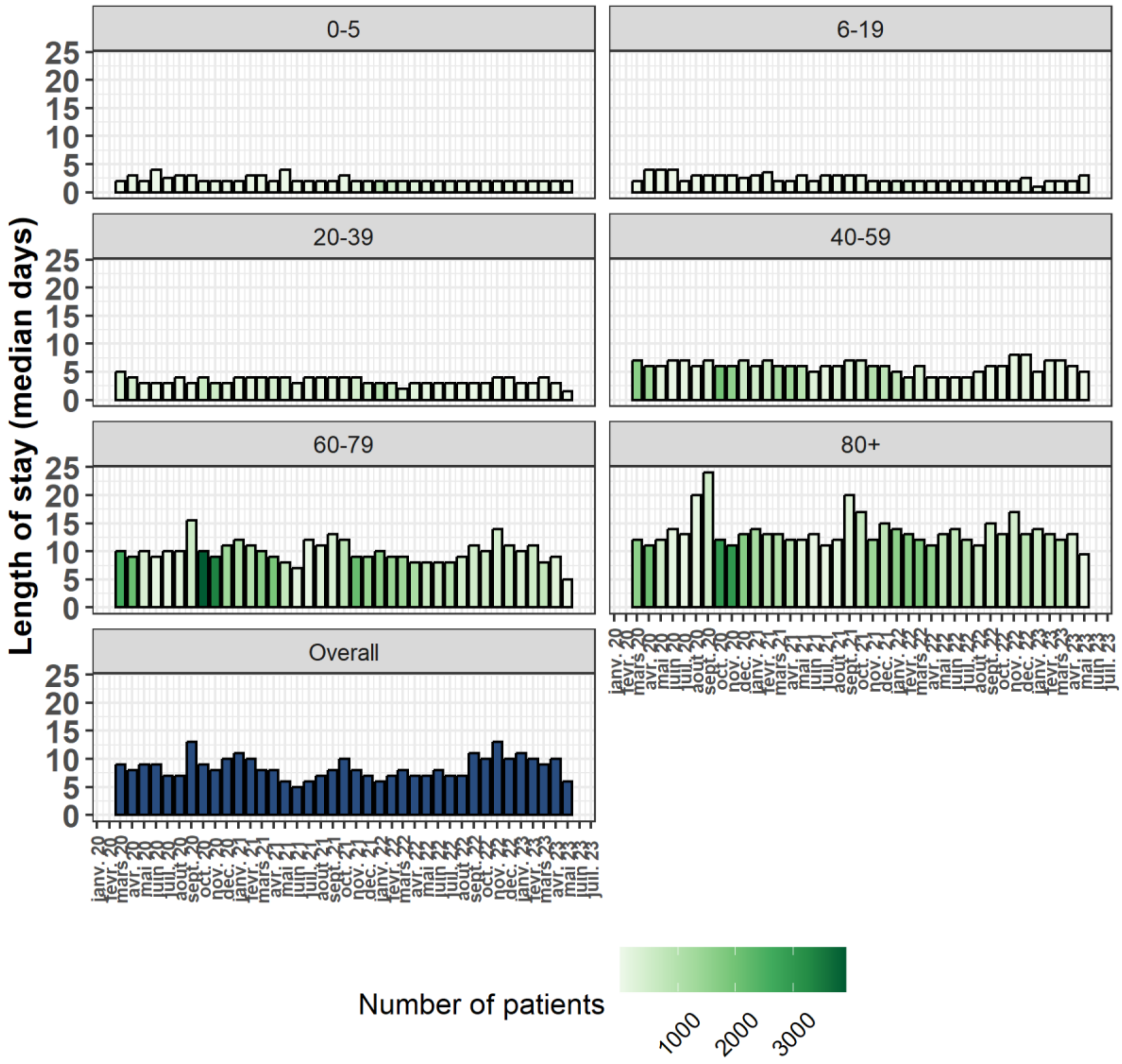


Figure 15: Length of hospital stay, per month.



Note that the last month may not be fully included: last included date is 2023-06-04

The most recent weeks are biased towards shorter length of stay because patients that are discharged or die earlier are registered sooner in the surveillance.

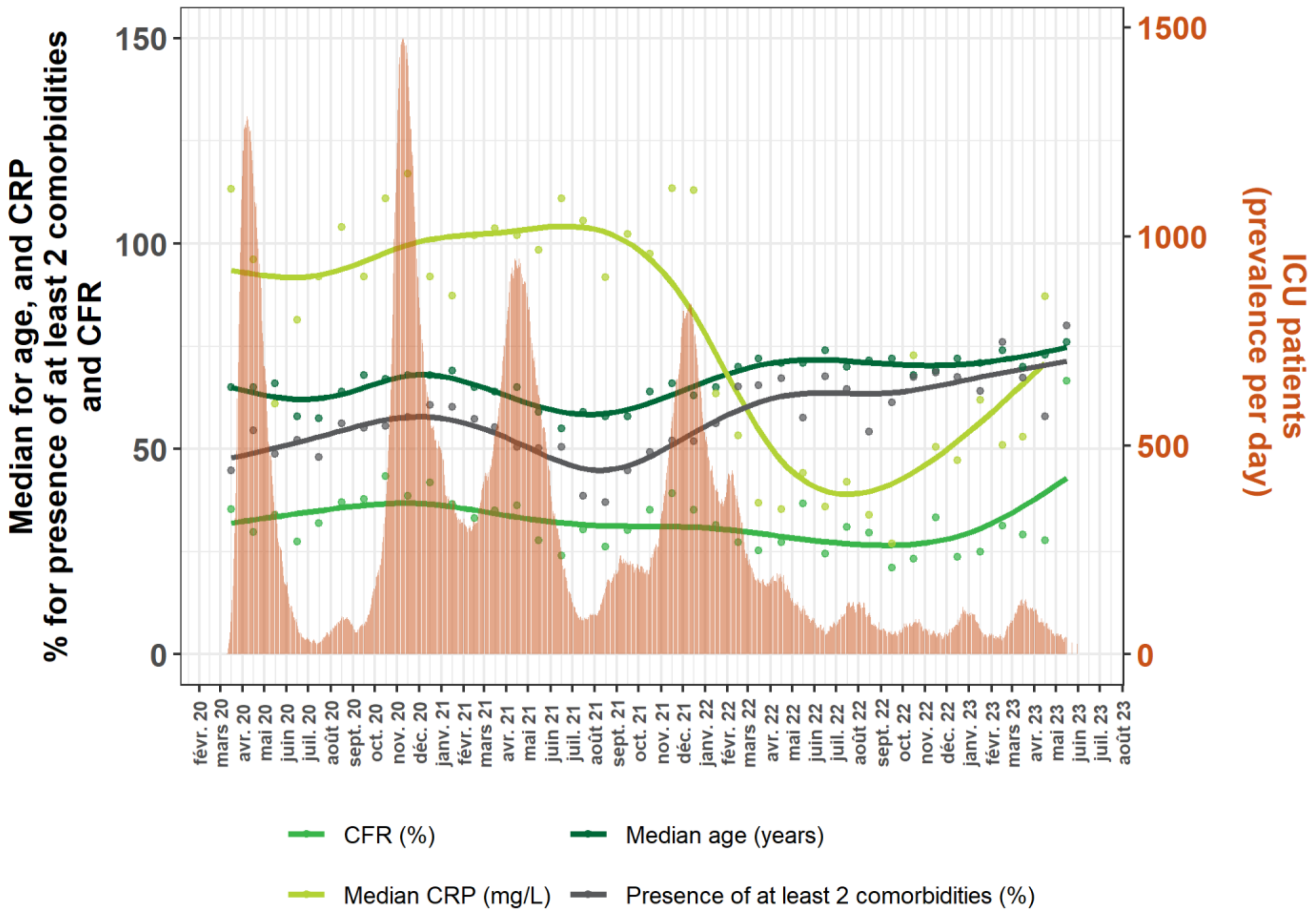
3. PATIENTS IN INTENSIVE CARE (ICU)

3.1. ICU AT A GLANCE

Figure 16: ICU at a glance.

This ‘At a glance’ figure provides an overview of the crude case fatality rate among ICU-admitted patients and its relation to specific markers over time:

- Number of ICU patients in Belgium
- Median age of patients at hospital admission
- Serum C-reactive protein (CRP) at hospital admission
- Proportion of admitted patients with at least 2 comorbidities at admission
- Case-fatality rate (CFR)



3.2. ICU PATIENT DEMOGRAPHICS

Figure 17: Gender distribution (ICU patients), per week.

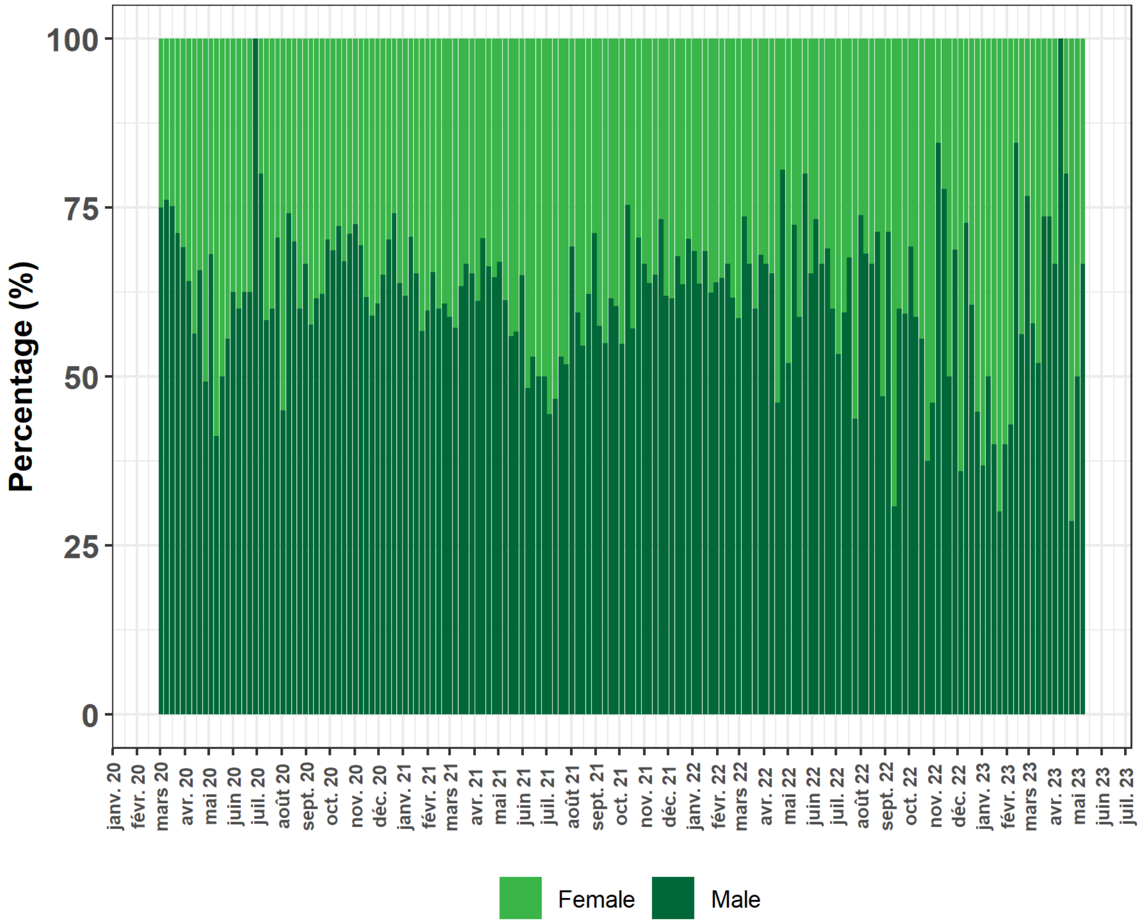


Figure 18: Distribution of age categories (ICU patients), per week.

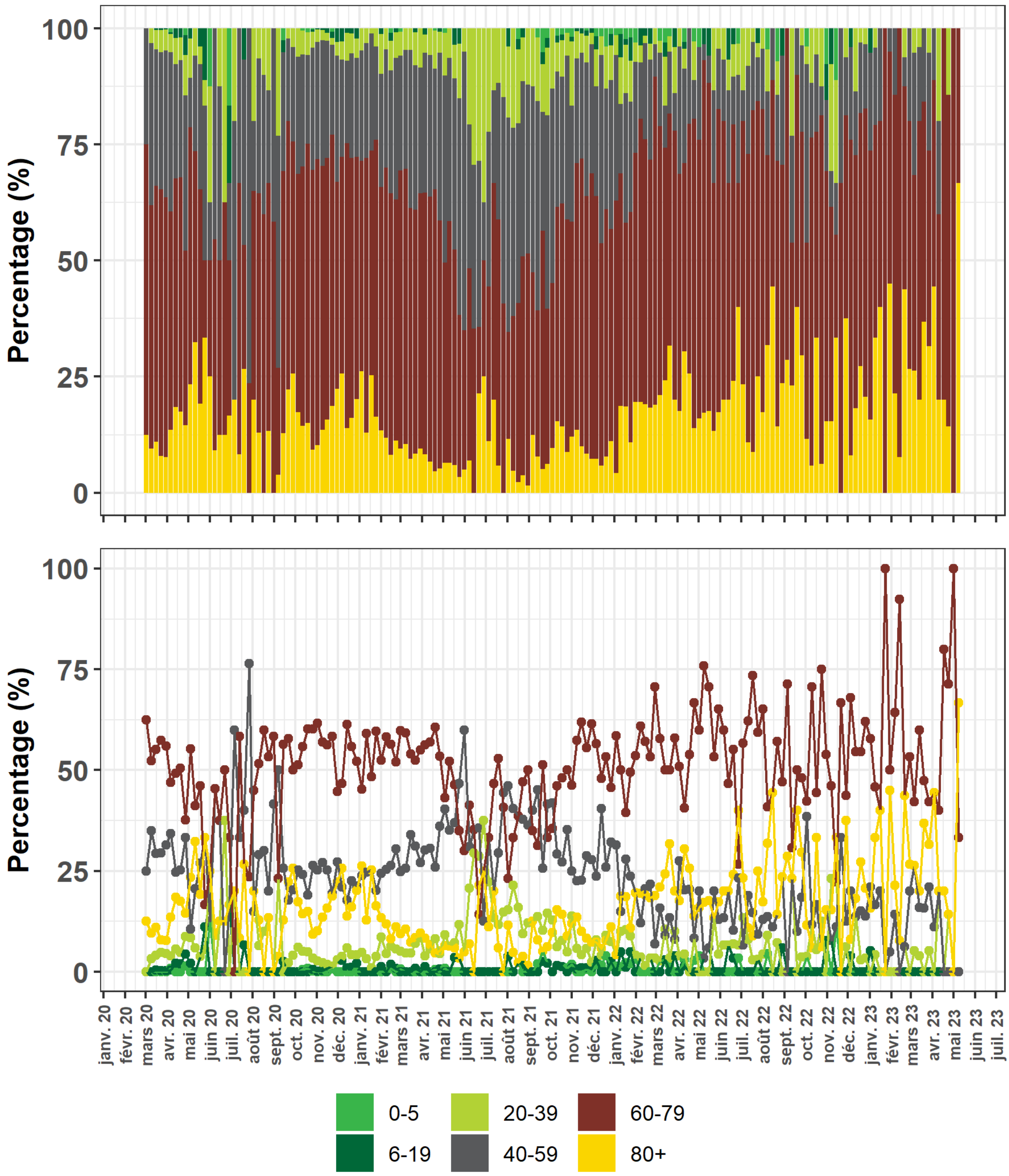
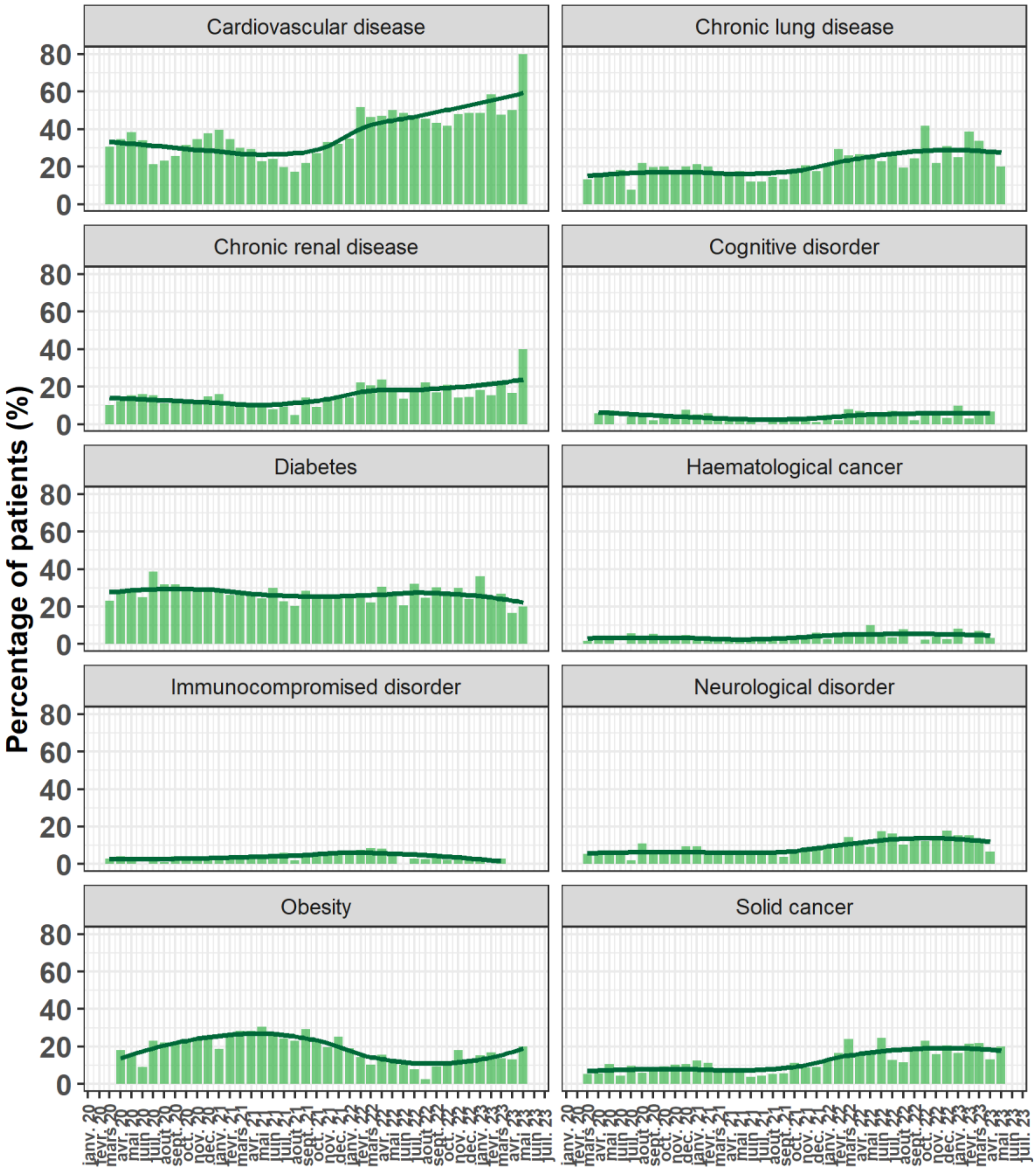
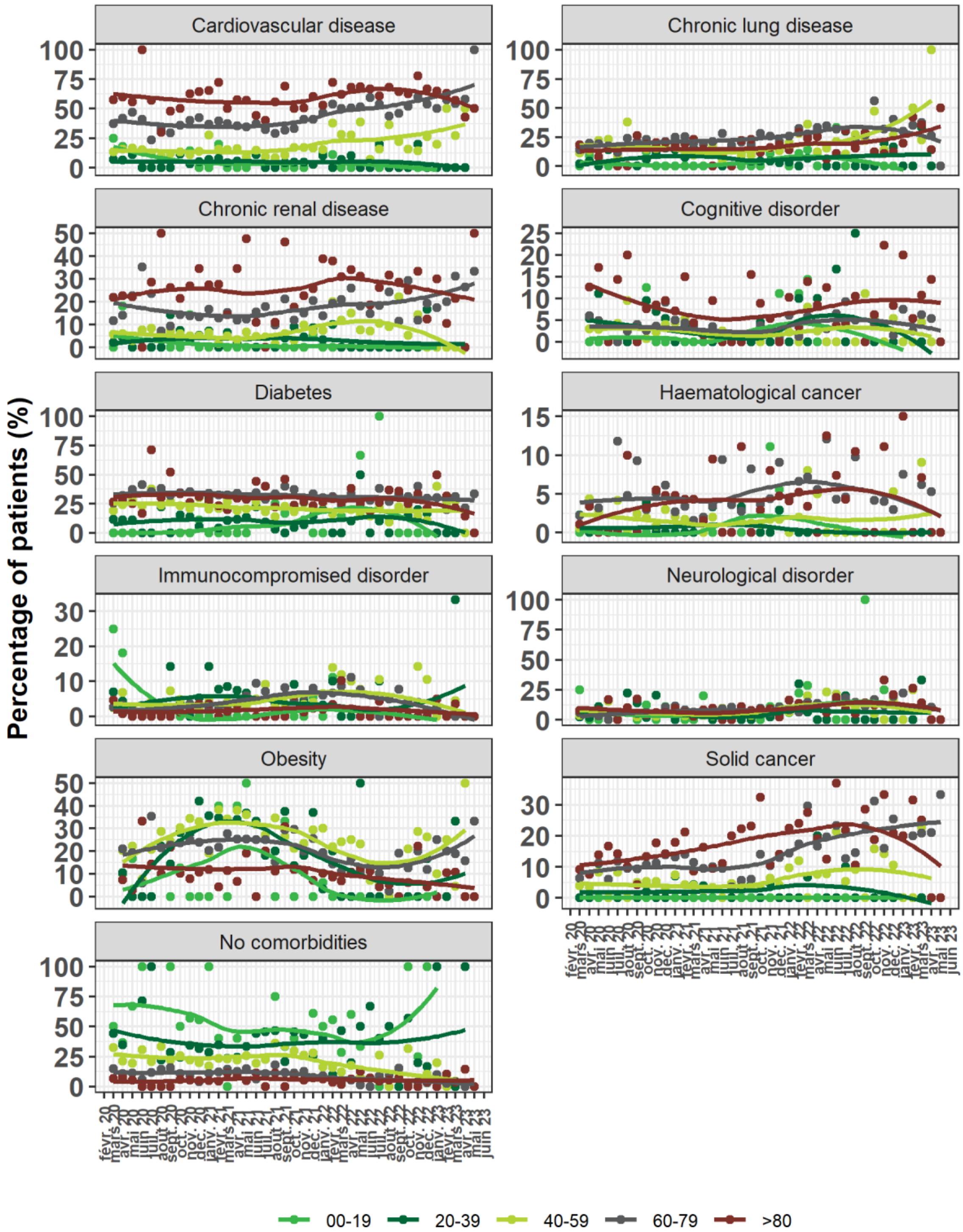


Figure 19: Comorbidities distribution (ICU patients), per month.



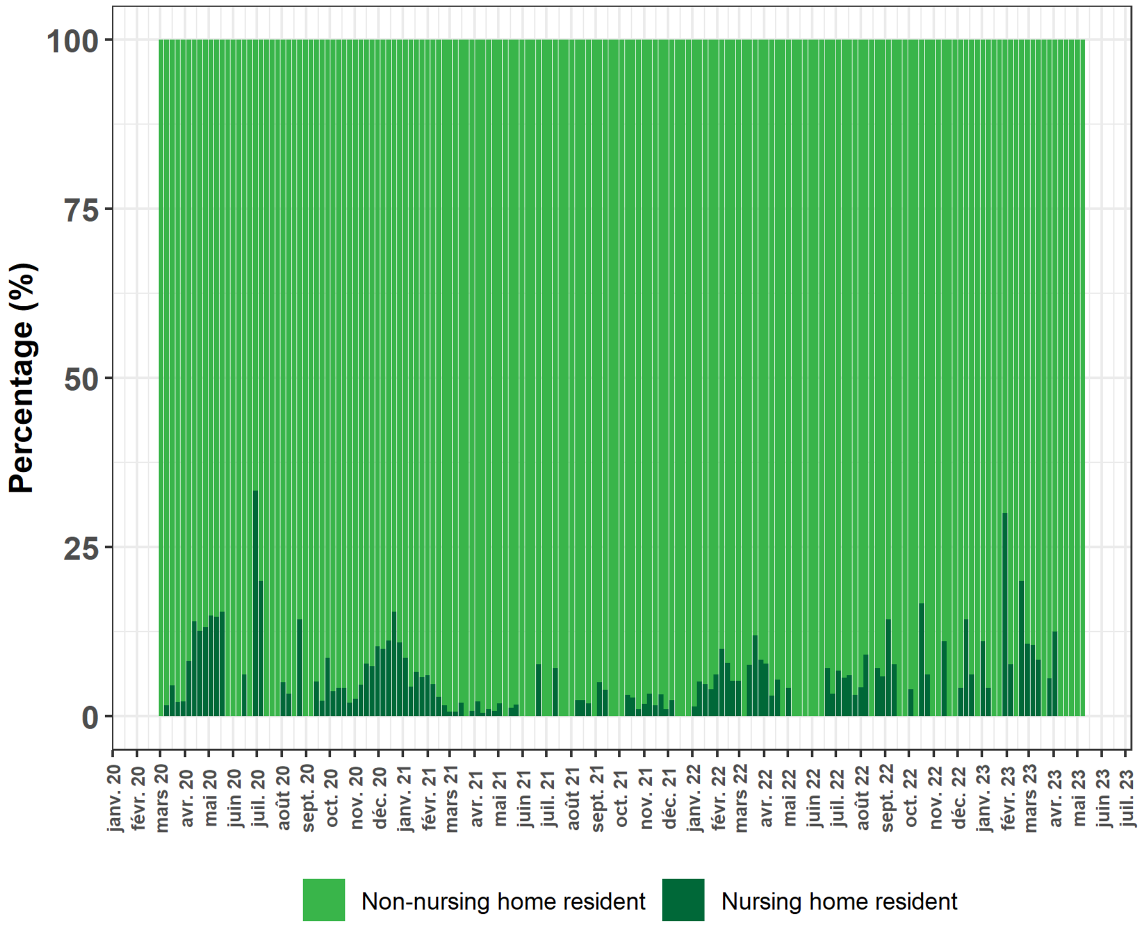
Note that the last month may not be fully included: last included date is 2023-06-04

Figure 20: Comorbidities distribution (ICU patients), per age group, per month.



Note that the last month may not be fully included: last included date is 2023-06-04

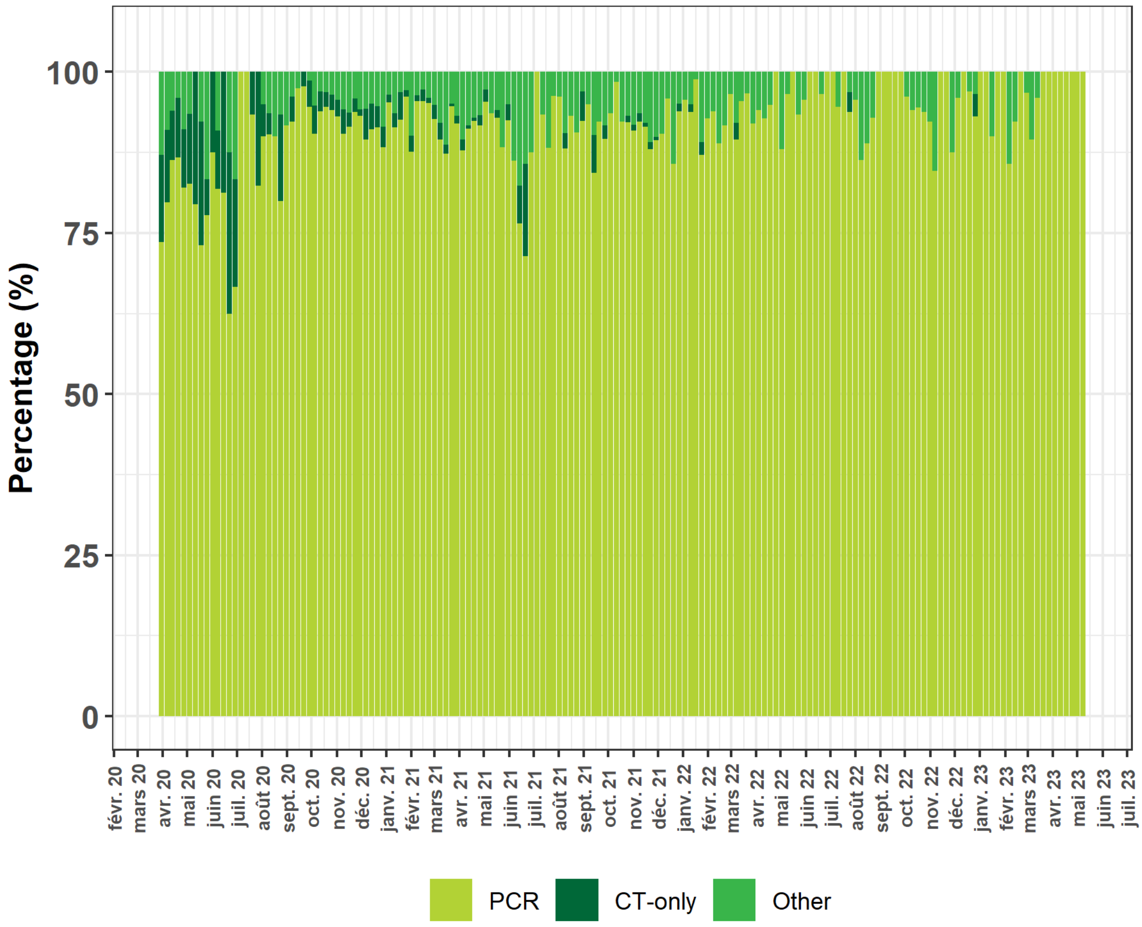
Figure 21: Distribution of nursing home vs non-nursing home residents (ICU patients), per week.



3.3. PROFILE OF ICU PATIENTS

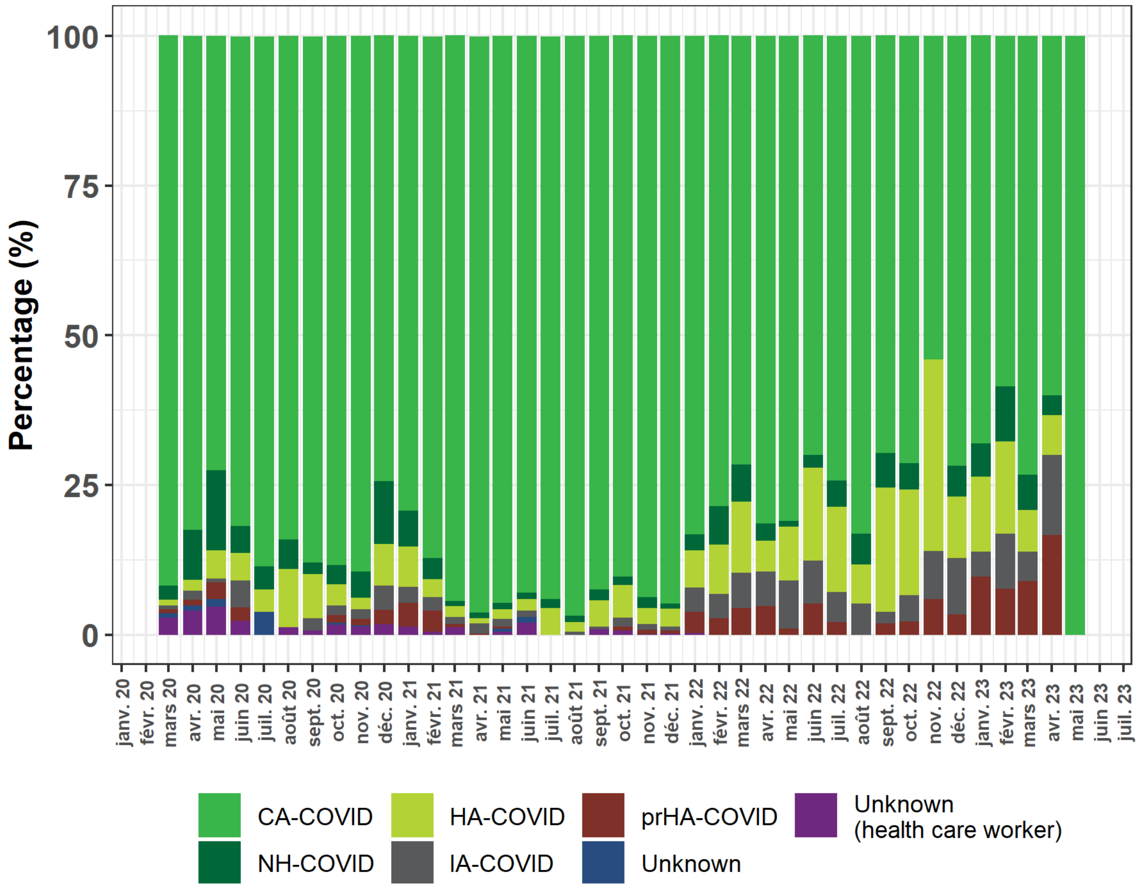
ICU patient profile per vaccination status i.e. the figure on breakthrough cases in the ICU was omitted from this report. Information on the impact of vaccination has been centralized in section 3.4 Vaccination of the COVID-19 weekly report (In Dutch: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Weekly_report_NL.pdf, in French: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Weekly_report_FR.pdf). Here, a more stable estimate for vaccine effectiveness is reported in addition to vaccine coverage in Belgium. Please refer to sections 10.7 and 10.8 of the FAQ document to inquire about the methodology (In Dutch: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_NL_final.pdf, in French: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_FR_final.pdf).

Figure 22 : Method of COVID-19 diagnosis, per week.[6]



[6] PCR includes all patients that were diagnosed by PCR, CT-only includes patients that were only diagnosed with CT, and other includes patients diagnosed by rapid Ag test in combination with or without CT.

Figure 23: Distribution of healthcare-associated SARS-CoV-2 infections among ICU patients, per month.[7]



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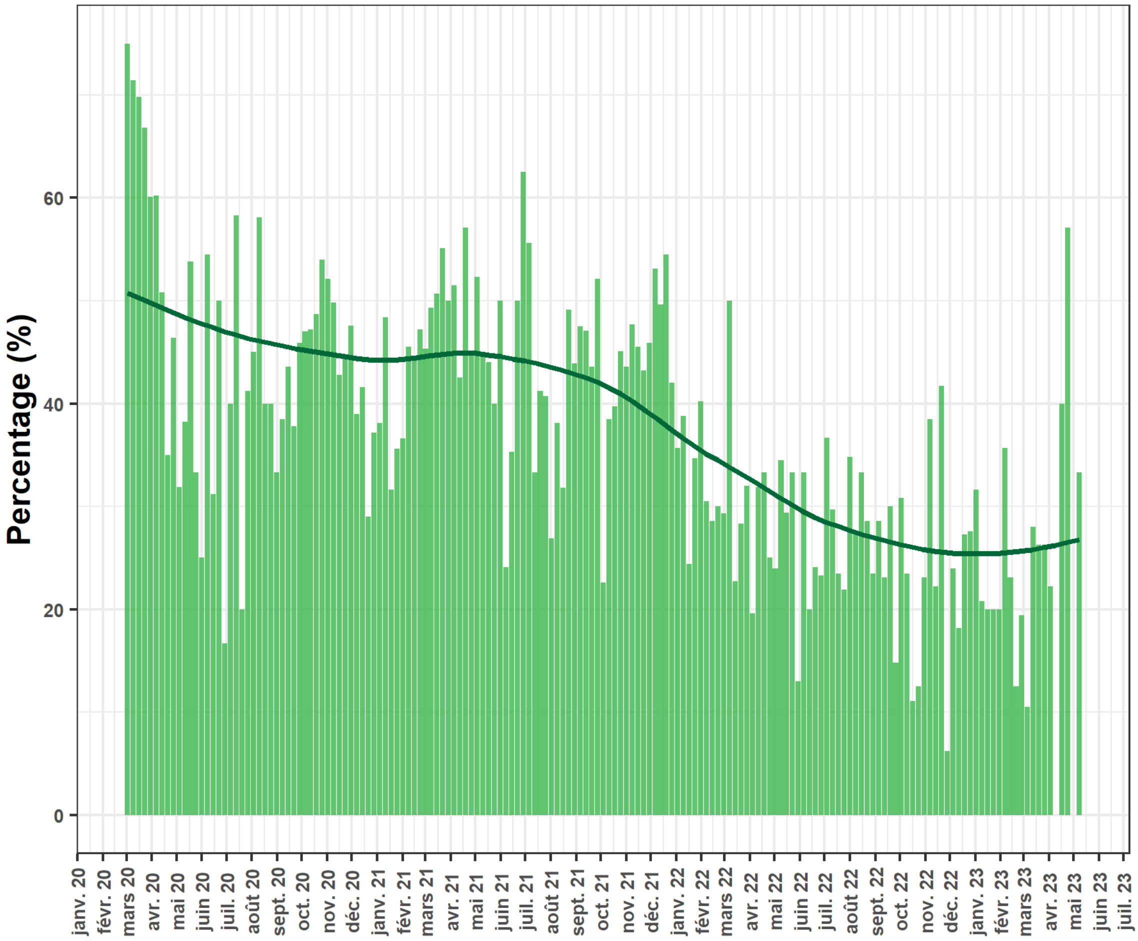
Time-to-infection after hospitalization was defined as days between hospital admission and date of symptom onset. In a small minority of cases the date of symptom onset was missing, in which case the date of diagnosis was used instead.

- CA-COVID: Community-associated COVID: up to 2 days after admission.
- NH-COVID: Nursing home-associated COVID: nursing home resident with symptom onset up to 2 days after admission.
- HA-COVID: Definite healthcare-associated COVID infection: >14 days after admission.
- prHA-COVID: Probable HA-COVID: on days 8-14 after admission.
- IA-COVID: Indeterminate-association COVID: on days 3-7 after admission.

These definitions are based on the European Centers for Disease Control and Prevention classification criteria (https://www.ecdc.europa.eu/en/covid-19/surveillance/surveillance-definitions). At the moment of writing these are pragmatic definitions that account for a median incubation period of 6 days (interquartile range 4 – 9 days). However, the validity of this classification system has not yet been extensively researched.
Because the surveillance does not ask whether there was a strong suspicion in case of COVID infections that develop at days 3-7 after hospital admission, these cannot be classified as community or healthcare-associated.

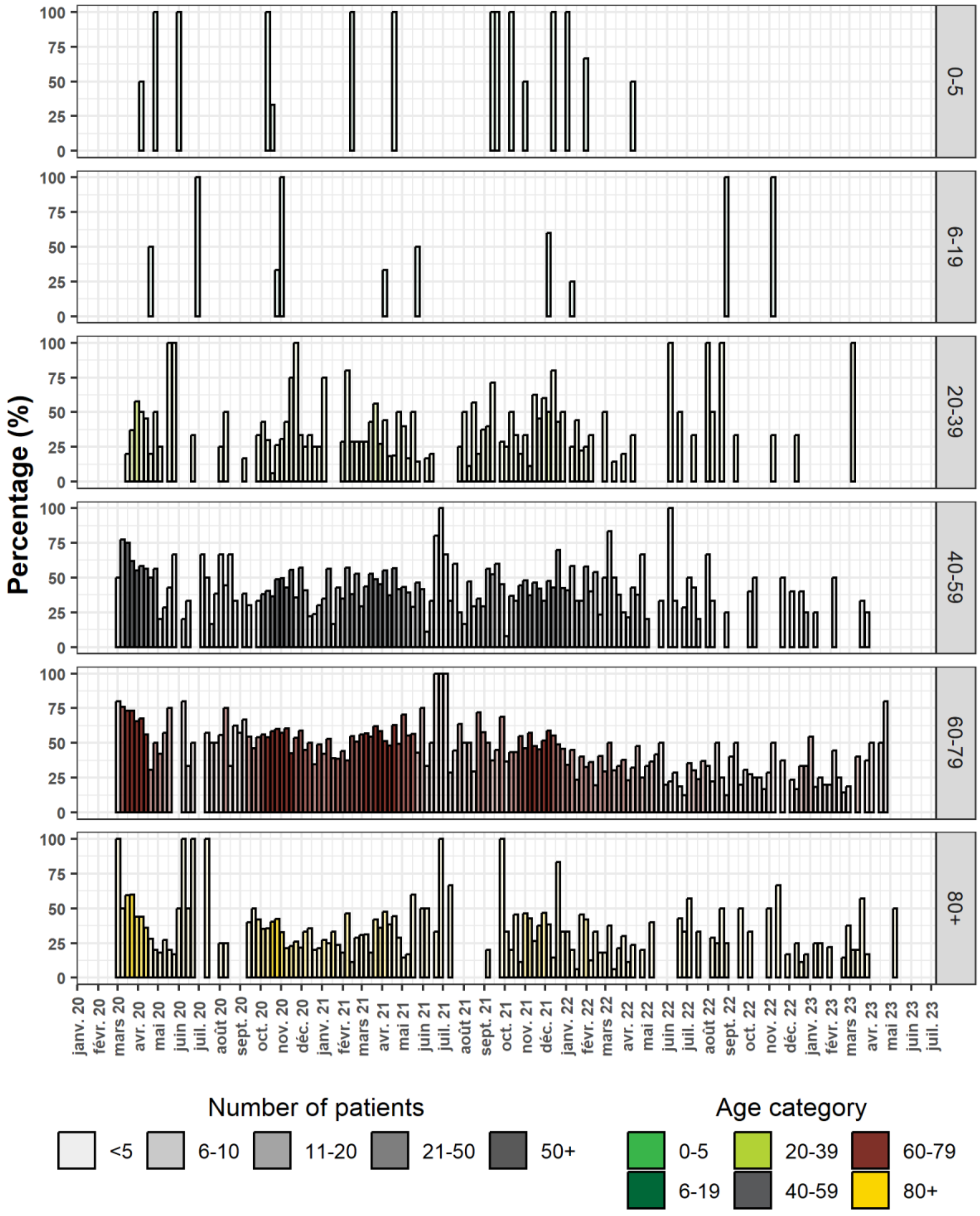
[7] The data collection of infections in health care workers has been discontinued since 14-11-2021. This explains the percentage of 0 for the ‘Unknown (health care worker)’ category since that time point.

Figure 24: Invasive ventilation among all ICU patients over time, per week



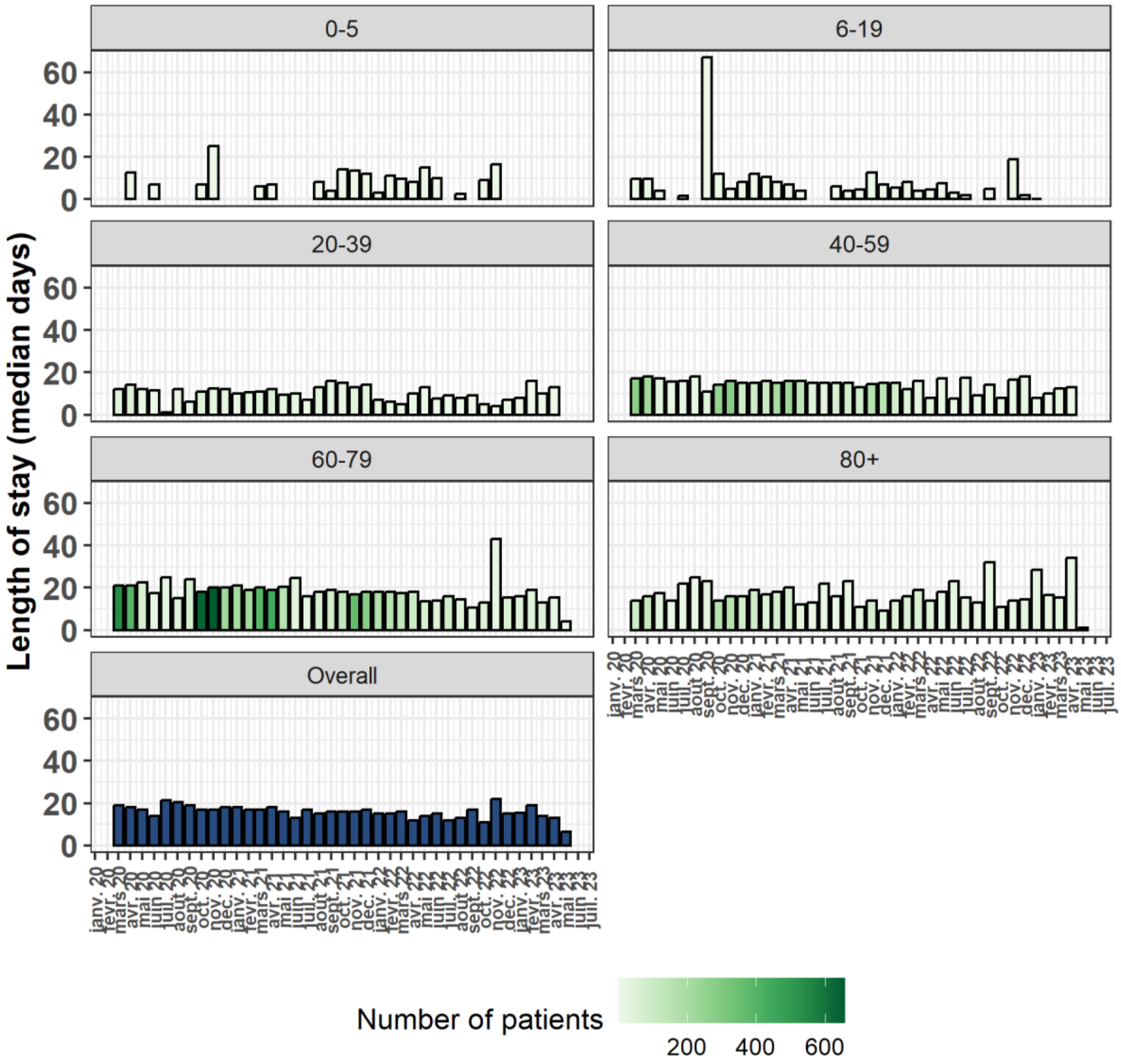
The most recent weeks are biased towards lower % invasive ventilation because these patients remain hospitalized longer compared to non-invasively ventilated patients, which means it takes longer for them to be registered in the surveillance.

Figure 25: Invasive ventilation among all ICU patients by age category over time.



The most recent weeks are biased towards lower % invasive ventilation because these patients remain hospitalized longer compared to non-invasively ventilated patients, which means it takes longer for them to be registered in the surveillance.

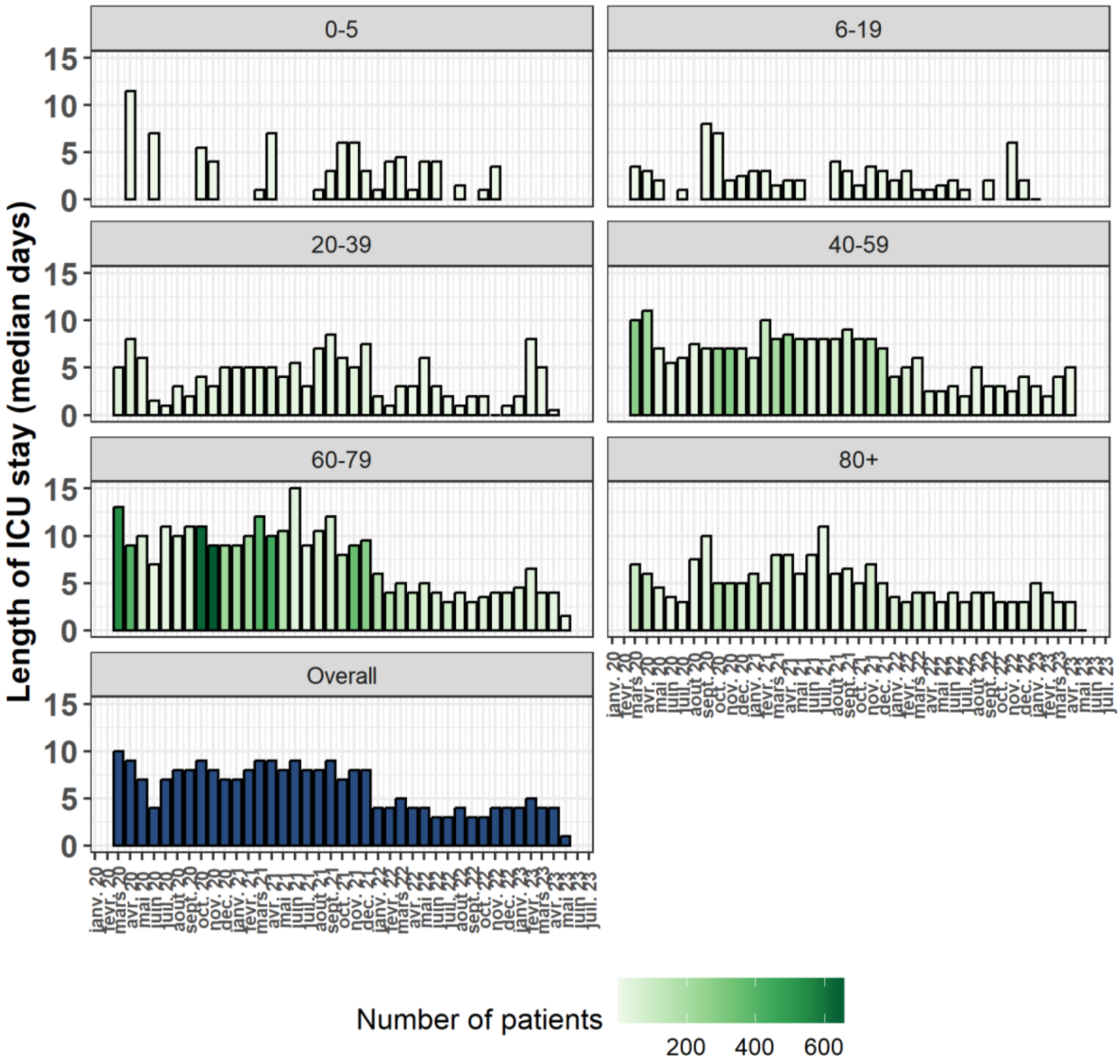
Figure 26: Length of total hospital stay among ICU-admitted patients, per month.



Note that the last month may not be fully included: last included date is 2023-06-04

The most recent weeks are biased towards shorter length of stay because patients that are discharged or die earlier are registered sooner in the surveillance.

Figure 27: Length of ICU stay among ICU-admitted patients, per month.



Note that the last month may not be fully included: last included date is 2023-06-04

The most recent weeks are biased towards shorter length of stay because patients that are discharged or die earlier, are registered sooner in the surveillance.

ACKNOWLEDGEMENTS

We sincerely thank all the health professionals for the registration of patient data, and we hope that this report will provide them with useful information for their work.

More information :

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https://covid-19.sciensano.be/

Sciensano • Rue Juliette Wytsmanstraat 14 • 1050 Brussels • Belgium • T + 32 2 642 51 11 • T press + 32 2 642 54 20 • info@sciensano.be • **www.sciensano.be**

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Prof. C. Léonard, Director • Rue Juliette Wytsmanstraat 14 • 1050 Brussels • Belgium •