

Bericht zum spitalbasierten COVID-19-Sentinel- Überwachungssystem

Datenstand: 20. März 2023

1. Einleitung zum CH-SUR-Monatsbericht:

Um die obligatorischen Meldesysteme für Grippefälle in der Schweiz zu ergänzen und bestehende Lücken in der Krankheitsüberwachung zu schliessen, wurde 2018 das *Hospital Based Surveillance System for Influenza* (spitalbasiertes Grippe-Überwachungssystem) eingerichtet. Nur vier Tage nach dem ersten bestätigten Covid-19-Fall in der Schweiz wurde dieses Programm dann angepasst, um auch Hospitalisierungen im Zusammenhang mit laborbestätigten SARS-CoV-2-Infektionen zu erfassen.

Derzeit beteiligen sich **18 Spitäler** in der ganzen Schweiz aktiv am **spitalbasierten Covid-19-Sentinel-Überwachungssystem (CH-SUR)**. Das Hauptziel von CH-SUR besteht darin, umfassende klinische und epidemiologische Informationen zur Krankheitslast zu sammeln. Die erfassten Daten geben unter anderem Auskunft über die Anzahl und Dauer der **Hospitalisierungen** sowie die Aufenthalte auf der Intensivpflegestation (IPS). Ersichtlich ist auch, ob die Patientin oder der Patient während des Spitalaufenthalts **an oder mit Covid-19 oder Grippe** verstorben ist. Ausführliche Definitionen und weitere Angaben zu den Daten sind im Kapitel **«Glossar und ergänzende Informationen»** am Ende dieses Berichts zu finden.

Der vorliegende Bericht deckt den Zeitraum vom 1. Januar 2022, als die Omikron-Variante dominant wurde, bis zum 19. März 2023, dem letzten Zeitpunkt der Datenextraktion, ab. In dieser Zeitspanne wurden die Daten zu **22 637 Hospitalisierungsepisoden** mit Covid-19 und zu **4 281** mit Grippe gesammelt. Im gleichen Zeitfenster wurden dem BAG im Rahmen der gesamtschweizerischen Meldepflicht **23 344** Hospitalisierungsepisoden mit laborbestätigter SARS-CoV-2-Infektion gemeldet. Damit erfasste das CH-SUR-System rund **97,0 Prozent** aller in der Schweiz gemeldeten Hospitalisierungen im Zusammenhang mit SARS-CoV-2. Eine Übersicht über die erfassten Daten der letzten beiden Monate ist in den Abbildungen **1** und **2** dargestellt.

Überblick über die Entwicklung der letzten zwei Monate (1. Februar 2023 bis 20. März 2023):

- In den letzten zwei Monaten wurden insgesamt **22 637 Covid-19-Episoden** im CH-SUR-System erfasst, von denen **4977 (22,0%)** mit nosokomialen Infektionen zusammenhängen (Abb. **1** und Kap. **2.1**).
- Insgesamt beinhalteten **1503 Covid-19-Episoden (7.2 %)** mindestens einen Aufenthalt auf der Intensivstation (IPS) und **918 Episoden (4.4 %)** mindestens einen Aufenthalt auf einer Intermediate-Care-Station (IMC). Diese Anteile sind seit dem 1. Januar 2022 relativ stabil geblieben (Kap. **4.1**).
- Die Fallsterblichkeit bei Covid-19-Episoden betrug **4,4 %** und lag damit leicht über der von Januar 2022 bis Januar 2023 verzeichneten Fallsterblichkeit von **3,0 %** (Kap. **3.1**).
- Insgesamt wurden **3052 Grippe-Episoden** verzeichnet, von denen **436 (14 %)** mit nosokomialen Infektionen zusammenhängen (Kap. **6**).

Ein Sonderkapitel im Bericht dieses Monats befasst sich mit der Dauer des Spitalaufenthalts bei Covid-19-Episoden im CH-SUR-System seit Beginn der Pandemie (Kap. **5**).

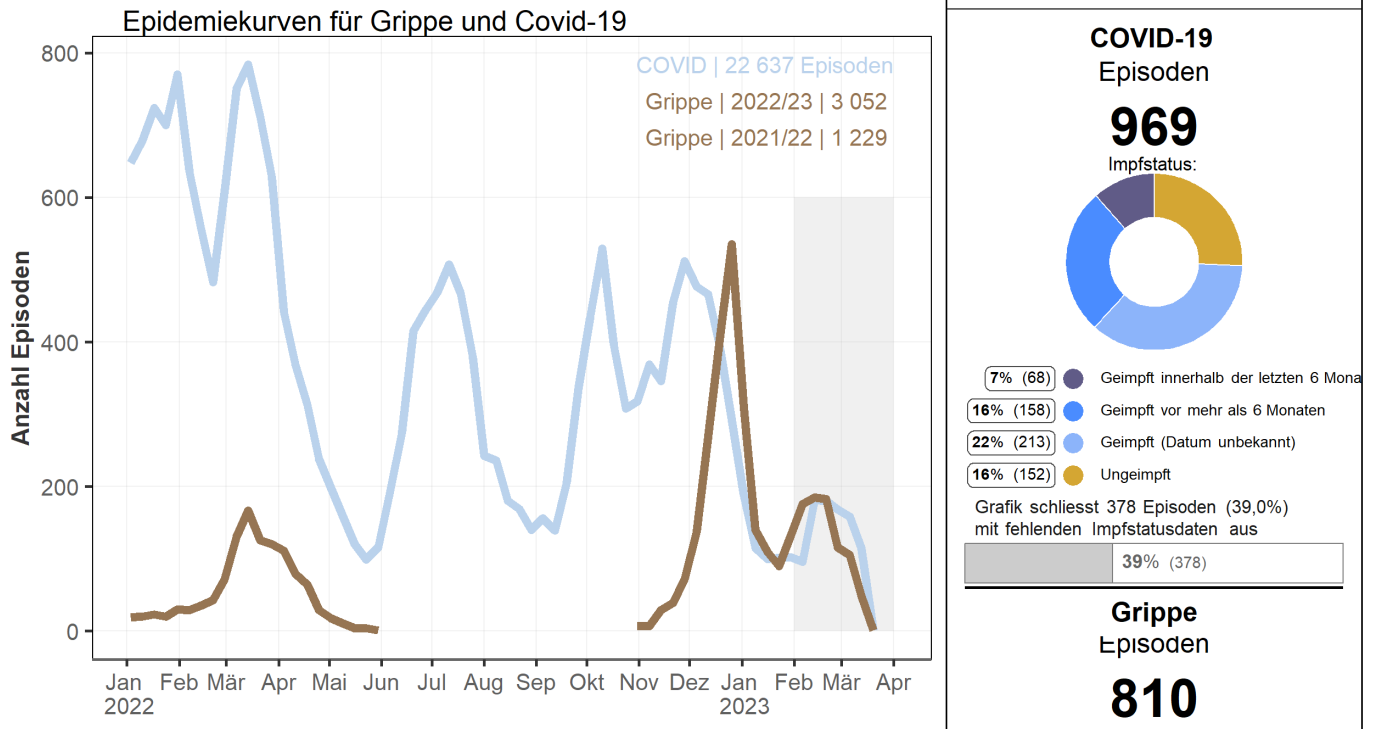


Abbildung 1: Übersicht über die neuesten Daten zu Hospitalisierungsepisoden. Die grau markierten Daten der letzten beiden Monate werden aufgrund von Verzögerungen bei der Dateneingabe als vorläufig betrachtet. Für die Grippesaison 2021/22: Es werden nur Episoden berücksichtigt, die nach Januar 2022 beginnen. Anzahl der teilnehmenden Spitäler für die Grippe: 19 für die Saison 2021/22, 18 für die Saison 2022/23. Diese Abbildung schliesst die Episoden eines Spitals, aufgrund von unvollständigen Daten für Covid-19, aus.

Übersicht über CH-SUR Hospitalisierte, in den IPS behandelte Episoden und Todesfälle vom 01. Februar 2023 bis 20. März 2023

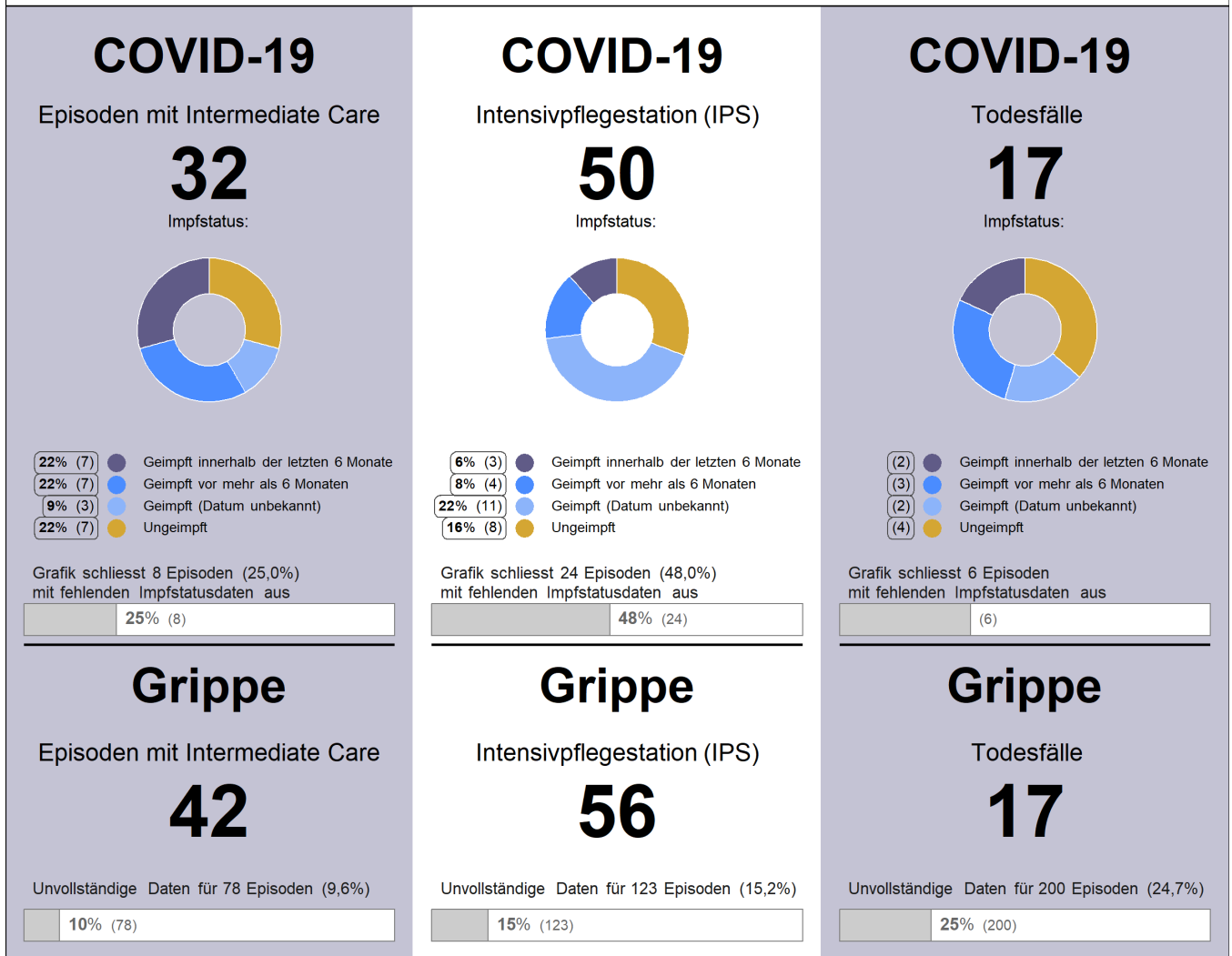


Abbildung 2: Übersicht über die neuesten Daten zu Hospitalisierungsepisoden. Diese Abbildung schliesst die Episoden eines Spitals, aufgrund von unvollständigen Daten für Covid-19, aus.

2. Hospitalizations and patient characteristics

Between January 01, 2022 and March 20, 2023 and among the 18 hospitals actively participating in CH-SUR, 22,637 **episodes** were registered, accounting for a total of 23,182 hospitalizations. There were more hospitalizations than **episodes** because some episodes include multiple **hospitalizations** (for more details see section **glossary and supplemental information**).

From January 01, 2022 to March 20, 2023, most patients (97.8% [22,131 of 22,637]) were hospitalized only once during an episode, while 2.2% of the registered episodes (506 of 22,637) included two to four hospitalizations. Only one episode included five hospitalizations.

Among all episodes, 51.7% (11,702 of 22,637) of the episodes concerned male patients and 48.2% (10,921 of 22,637) episodes concerned female patients. Sex type was defined as *other* for 14 patients. The age distribution was skewed towards older persons (Figure 3a and b). The largest age category corresponded to patients aged 80 and above (46.0% [443]).

Figures 3c and 3d show the sex and age distribution ratio over time. During most months, more men than women were admitted. During the period of observation, the proportion of episodes concerning patients aged 50 years old and above was the lowest in February 2022 with 68.7% (1,649 of 2,401). In October 2022, 89.5% (1,631 of 1,822) of episodes concerned patients 50 years old and above (Figure 3d).

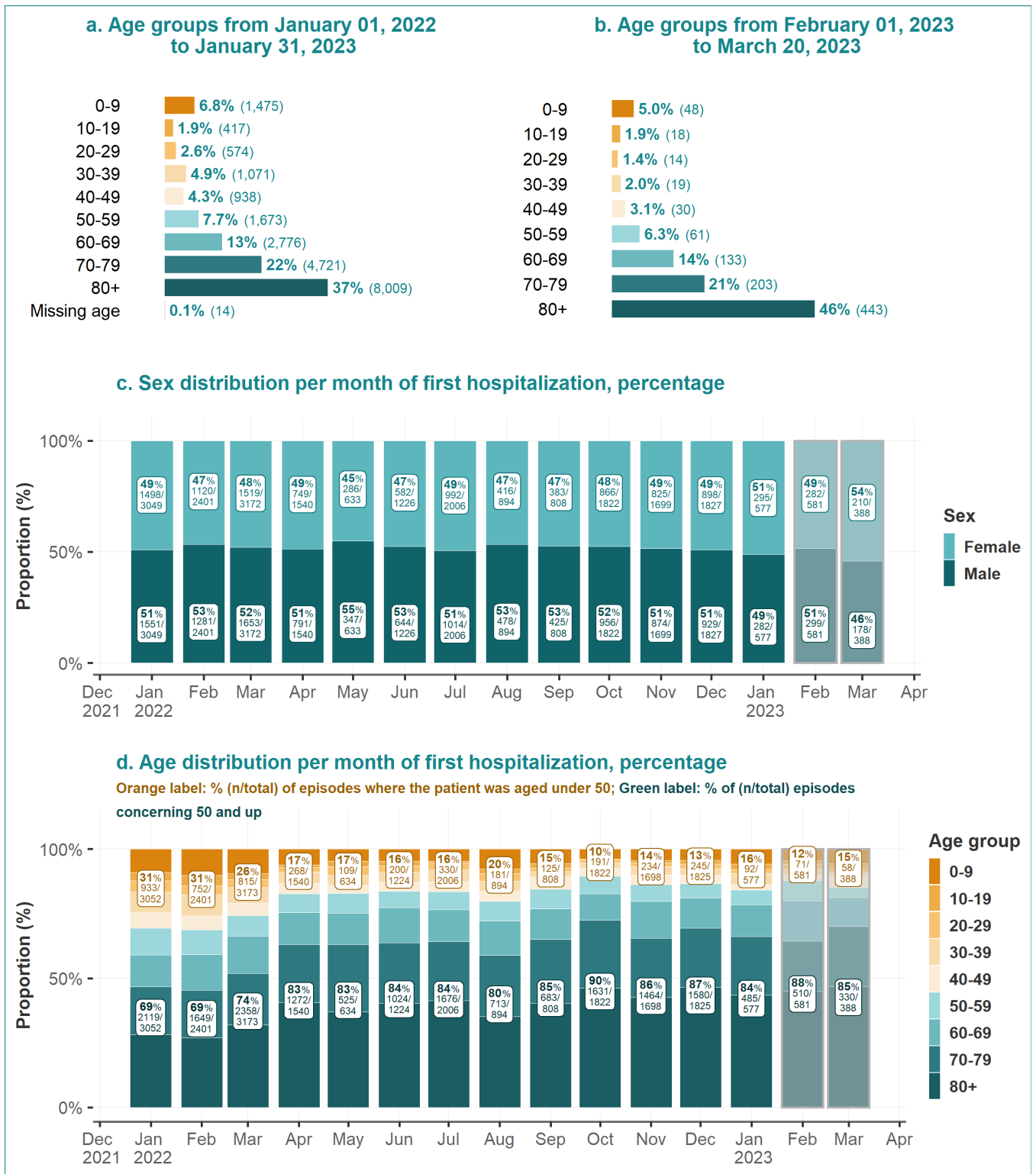


Figure 3: Demographic characteristics: sex and age distribution of hospitalized patients, overall and per month. For episodes with multiple hospitalizations, the admission date of the first hospitalization was used. Data from the last two months (highlighted gray) is considered provisional due to entry delays. The 'other' sex category was removed from panel c, and the missing age group was removed from panel d.

2.1. Origin of infection

From January 01, 2022 to March 20, 2023, the overall percentage of nosocomial infections among all documented episodes was 22.0% (4,977 of 22,637) while episodes linked to community acquired infections accounted for 75.2% (17,018 of 22,637) (Figure 4). For 2.8% of the episodes, it is unknown if the infection was nosocomial or community acquired.

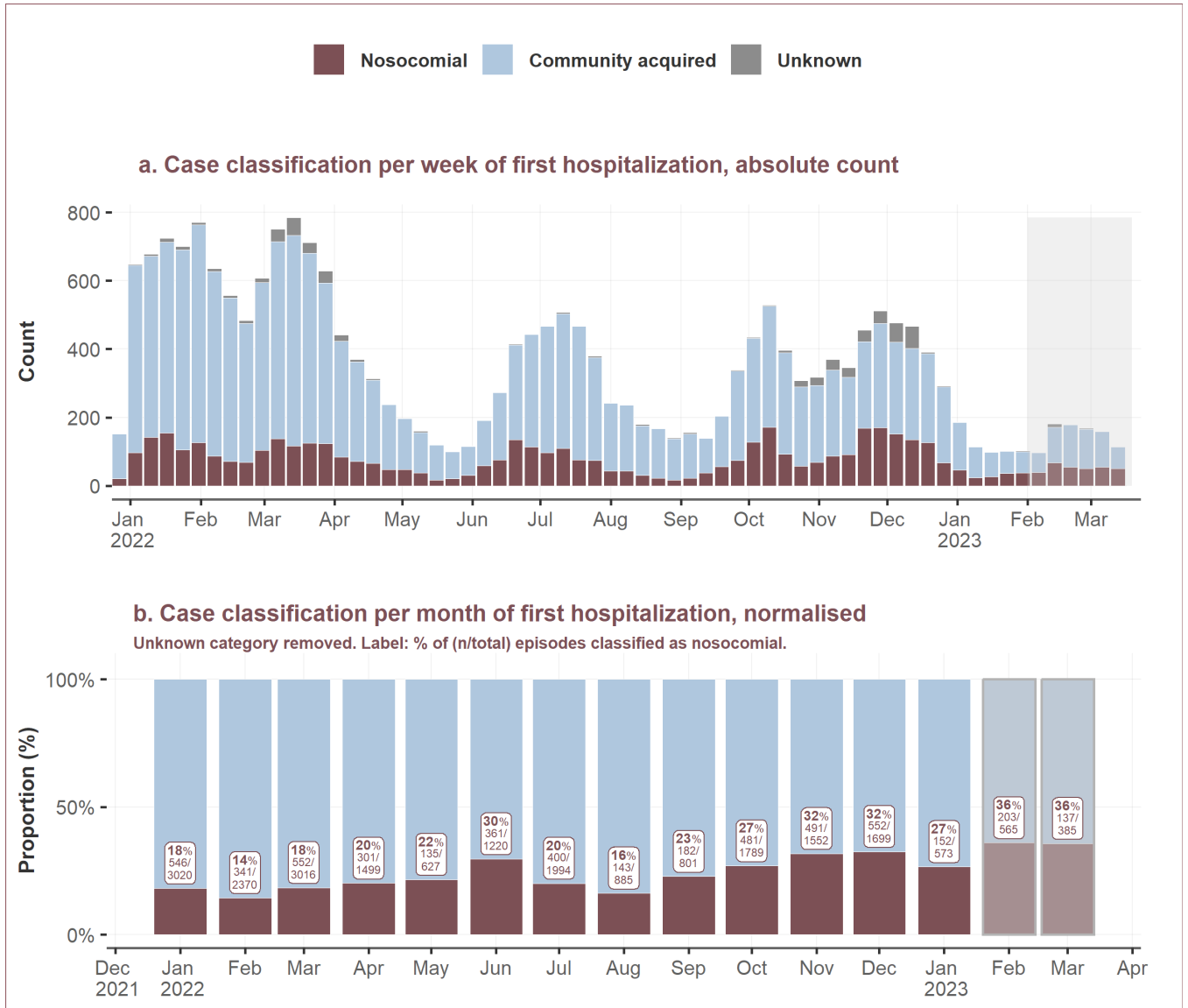


Figure 4: Case classification (origin of infection) of the episodes. The absolute count of episodes over time (panel a) and the proportion (normalized in %) of episodes by origin of infection (panel b). For episodes with multiple hospitalizations, the case classification of the first hospitalization was considered. Data from the last two months (highlighted gray) are considered provisional due to data entry delays.

Compared to other age groups, patients aged 80 years and above were most affected by nosocomial infections, accounting for 2,105 (45.4%) of the nosocomial episodes from January 01, 2022 to January 31, 2023. Furthermore, patients aged 80 years and above also account for a majority of community-acquired infections with 5,725 (34.9%) episodes from January 01, 2022 to January 31, 2023 (Figure 5a).

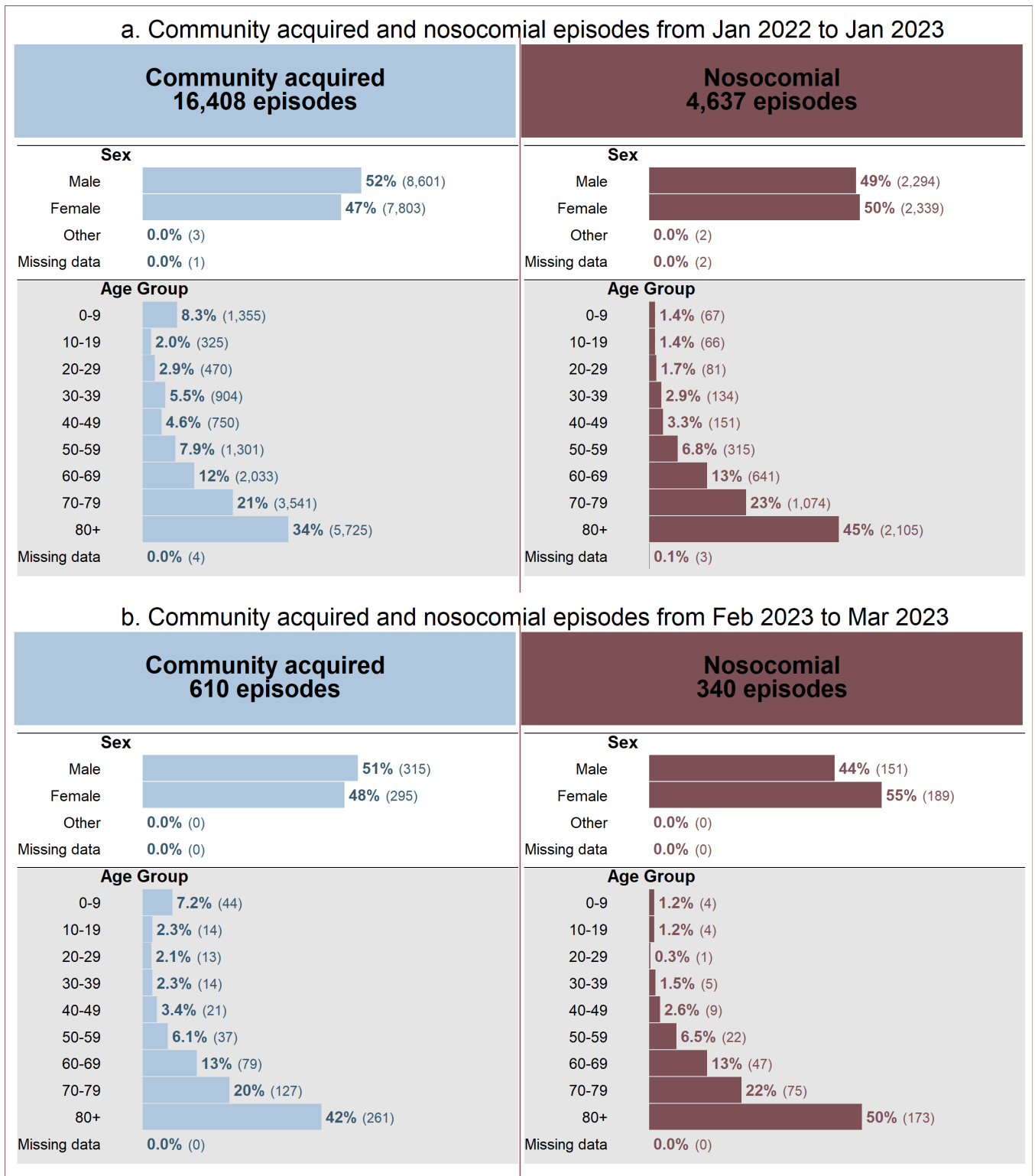


Figure 5: Comparison of community acquired and nosocomial cases by demographic characteristics.

2.2. Vaccination status at admission over time

For these analyses, the **vaccination status** of a patient considers the vaccine doses received up to the time of a positive COVID-19 test, specifically up to the time when the sample for the test was collected.

From January 01, 2022 to March 20, 2023, 72.2% of the Swiss population was vaccinated with at least one dose. In March 20, 2023 11.6% of hospitalized individuals were vaccinated within the last 6 months. It is important to note that we can know the percentage of the population which is vaccinated (through administrative records), but only approximate the proportion of the population which is immunized. Recent studies from **Corona Immunitas** are indicating that **the population immunization (by vaccination and/or previous infection) is nearing 100%**.

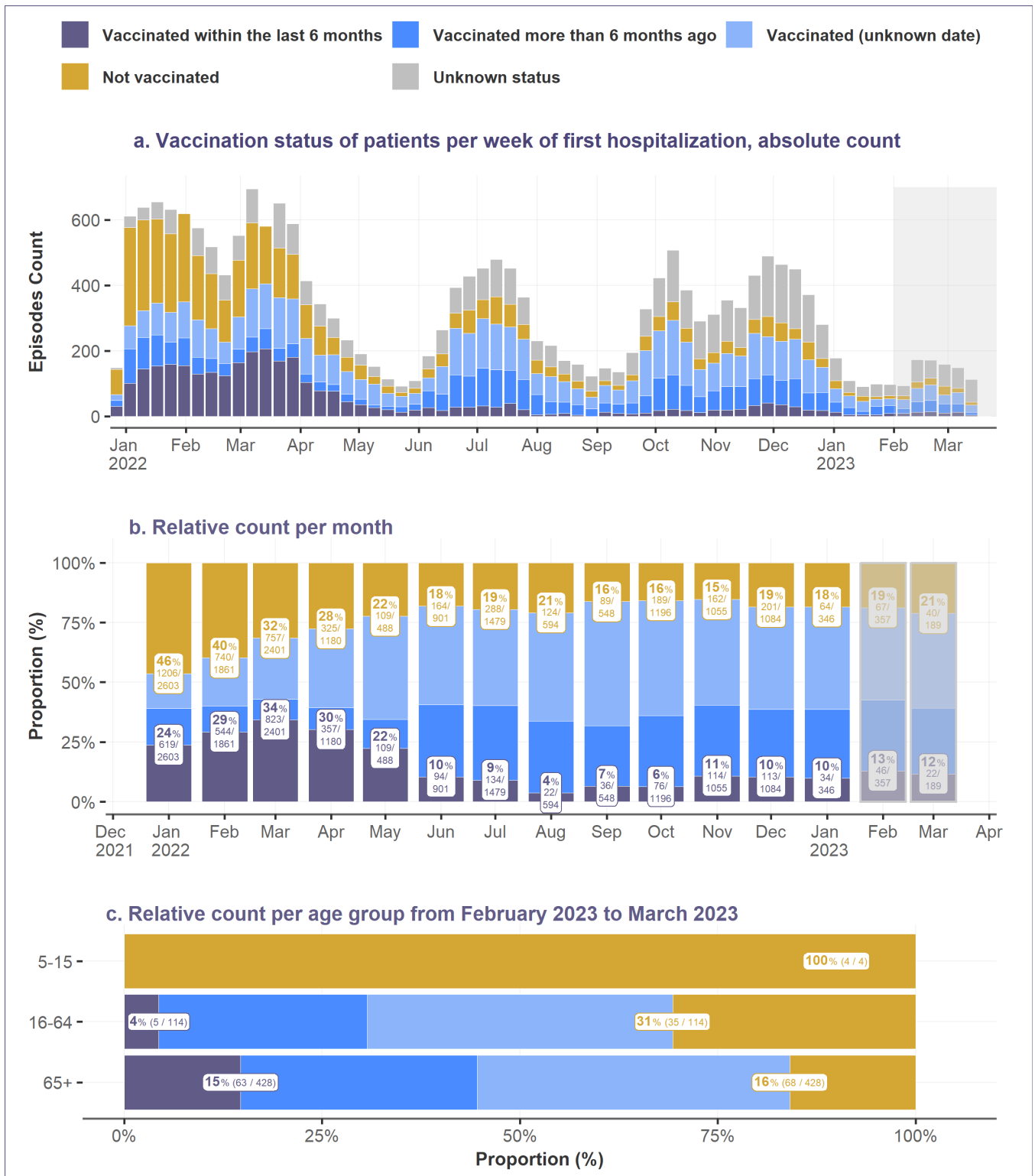


Figure 6: Episodes by vaccination status over time and by age group. For episodes with multiple hospitalizations, the vaccination status for the first hospitalization was considered. Episodes with first admission date after January 31, 2023 were excluded due to data completeness considerations. For Figure 5c only: Episodes with missing ages and children between 0 to 4 years old (following vaccination recommendations) were excluded from the analysis.

3. Outcomes

3.1. Outcomes over time

Figure 7 shows the final outcomes of episodes over time (Figure 7a & 7b). Episodes resulting in in-hospital death, for which COVID-19 was the **cause of death** (died of COVID-19) are shown separately from those with an alternative cause of death (died with COVID-19, but not of COVID-19). A medical doctor at the hospital for each CH-SUR participating center determined whether a patient died of COVID-19 or another cause during the COVID-19 hospitalization. Episodes where the cause of death was not certain, but there was a COVID-19 diagnosis (in conformity with inclusion criteria for CH-SUR) were counted as died of COVID-19 or suspected death of COVID-19. The outcome **“discharged”** includes patients who were transferred out of the CH-SUR system. Episodes with “pending or missing outcomes” correspond to either patients who were still hospitalized or whose outcomes were not yet recorded in the database at the date of data extraction. Because of the higher proportion of incomplete data during the most recent months, case fatality rates from these months should be interpreted with caution.

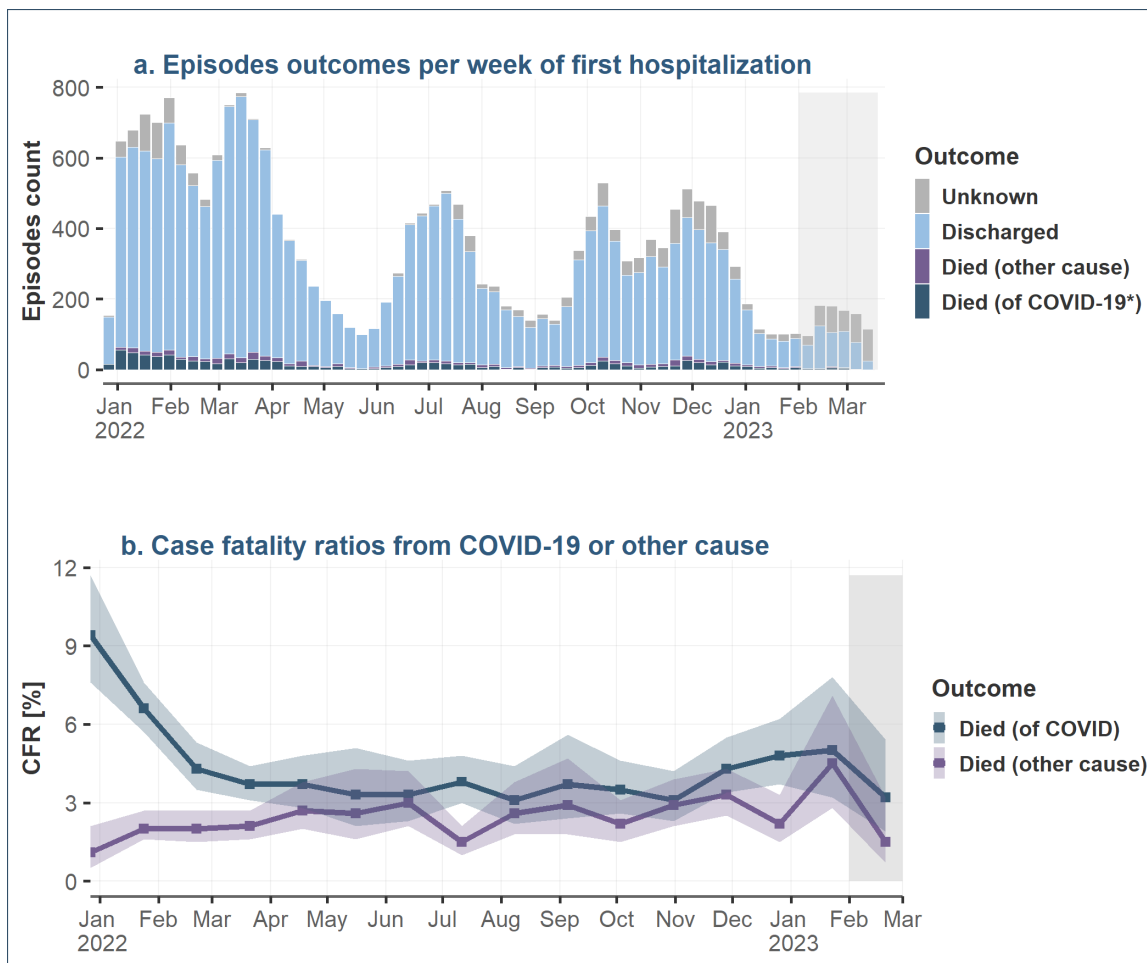


Figure 7: Outcomes for COVID-19 related episodes over time. Includes records up to March 20, 2023. Data from the two last months (highlighted in gray) are considered provisional due to data entry delays. Episodes where the cause of death was not certain, but there was a COVID-19 diagnosis (in conformity with inclusion criteria for CH SUR) were counted as Died of COVID-19 or suspected death of COVID. (* Died of COVID-19 as a confirmed or suspected cause of death). The coloured bands on this plot indicate the 95% confidence interval around the estimated CFR.

3.2. Case fatality rate (CFR) across demographic and risk groups

Since January 2022 until January 2023, the case fatality rate (CFR) increased with increasing age, from 0.1% (1 of 1,414) in episodes of patients aged 0-9, to 2.1% (33 of 1,548) in episodes of patients aged 50-59, and to 7.2% (526 of 7,343) in episodes of patients aged 80+. CFR% was greater in men than in women: 4.9% (510 of 10,406) vs 3.8% (363 of 9,595) respectively. (Figure 8a)

The overall CFR% of the most recent period for which enough data is available (months February 2023 and March 2023, Figure 8b) was 4.4% compared to 3.0% from January 2022 until January 2023.

Data regarding CFR% and vaccination status can be found in section 3.3.

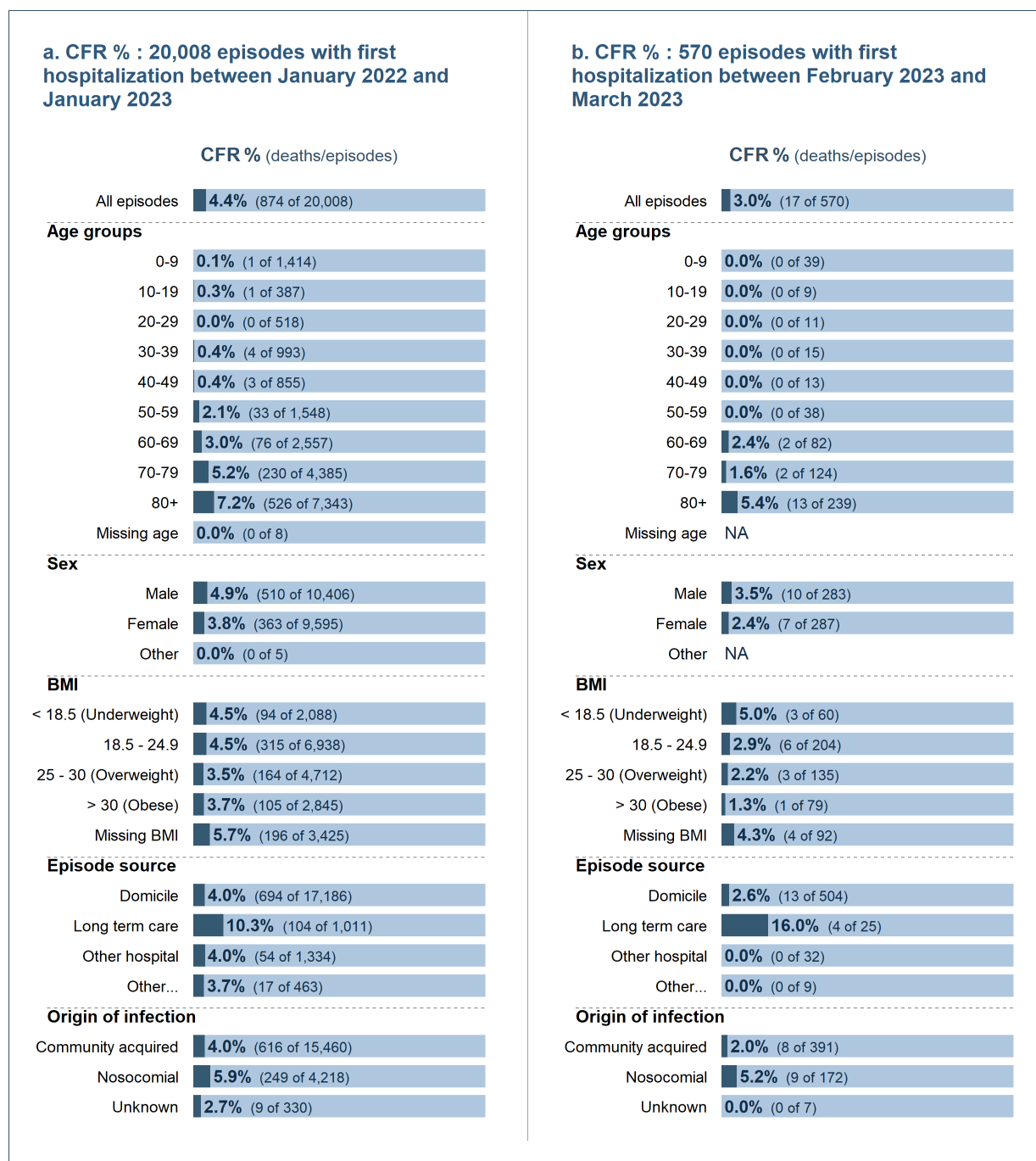


Figure 8: Case fatality rate (CFR) % among demographic and risk groups: percentage of hospitalization episodes, which ended in the death of the patient of COVID-19 in hospital. Records with incomplete data (ongoing hospitalization episodes or with a pending outcome in the database) were not included.

3.3. CFR by age group and vaccination status

For the most recent time period for which reliable data is available, the case fatality rate is displayed by age group and vaccination status (Figure 9).

The data should be interpreted with caution, as local peaks most often result from a small number of cases (for example, the peak in CFR% concerning patients vaccinated within the last 6 months in the age group of 80 and above patients in August 2022 is due to 1 death out of 6 episodes).

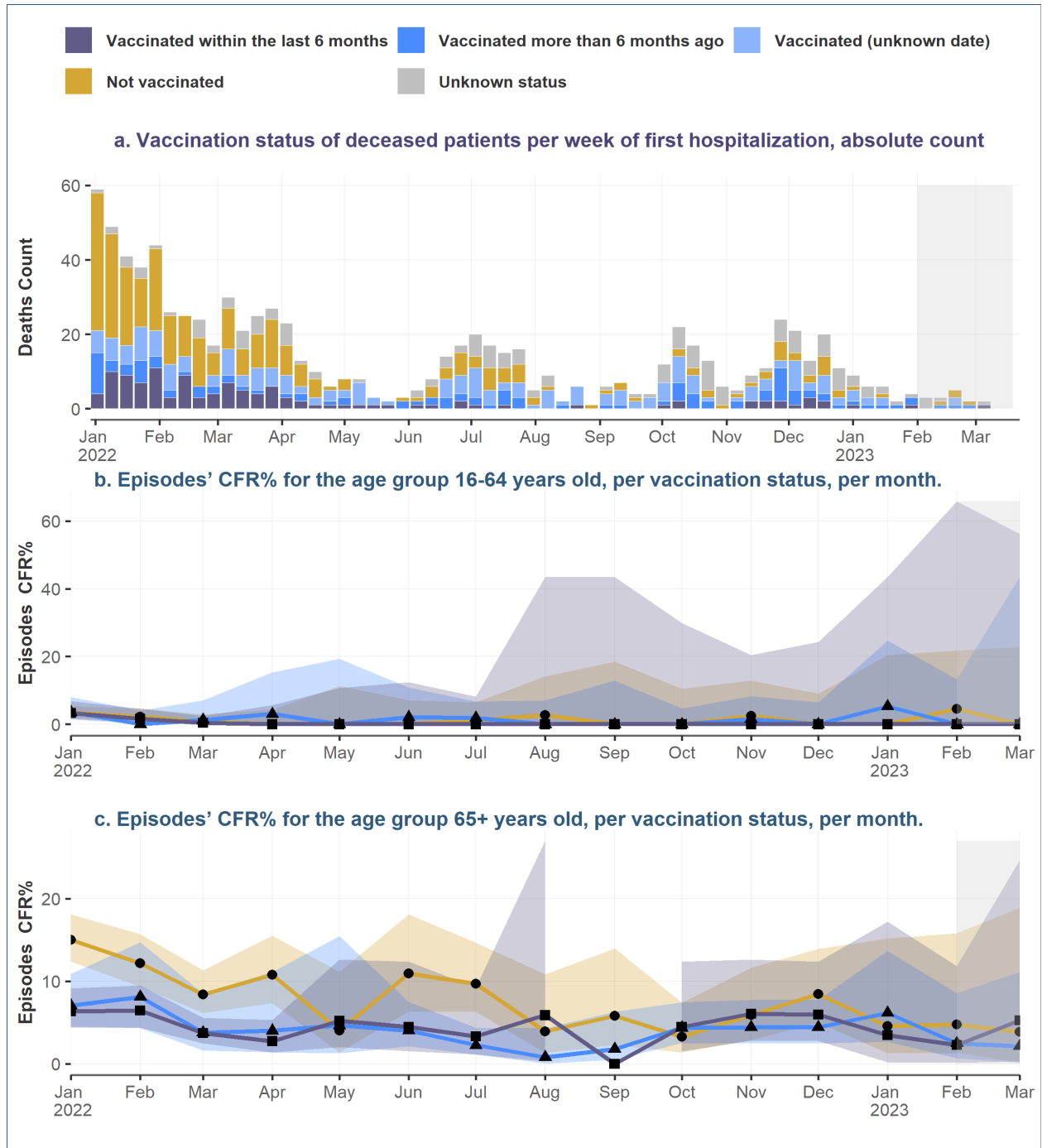


Figure 9: Case fatality rate (CFR%) by age and by vaccination status over time: percentage of episodes, which ended in the death of the patient of COVID-19 in hospital. Records with incomplete data were not included. Data from the two last months (highlighted in gray) are considered provisional due to data entry delays. The coloured bands on this plot indicate the 95% confidence interval around the estimated CFR. A gap in the coloured band means that the confidence interval goes beyond the displayed range of the plot.

4. Intensive care unit (ICU) admission

4.1. ICU, IMCU admission and use of ventilation over time

ICU and intermediate care unit (IMCU) admissions include patients that were hospitalized *because* of COVID-19 as well as *with* COVID-19.

Figure **10** shows the distribution of episodes over time which required ICU, IMCU admissions or both, as well as the type of ventilation used.

Figure **10b** only includes episodes with known information on ICU and IMCU stay. Figure **10b** shows that the proportion (in %) of ICU admission has remained relatively stable over time since January 2022. A total of 1,503 (7.2%) episodes required ICU admission, 918 (4.4%) episodes required IMCU admission and 211 (1%) episodes required both ICU and IMCU admission. For 17,353 episodes no ICU nor IMCU admission was required. It is unknown if ICU, IMCU admissions or both was required for 865 episodes.

Figure **10c** only includes episodes with known information on ICU and IMCU stay requiring ventilation. In a total of 371 (32.9%) episodes with an IMCU stay, the patient required non-invasive ventilation. For 756 episodes with IMCU stay, it is unknown if non-invasive ventilation was required. Among episodes with ICU admissions, a total of 39 (2.3%) episodes required ECMO ventilation, 591 (34.5%) episodes required invasive ventilation, and 577 (33.7%) episodes required non-invasive ventilation. For 896 episodes with ICU stay, it is unknown if any ventilation was required.

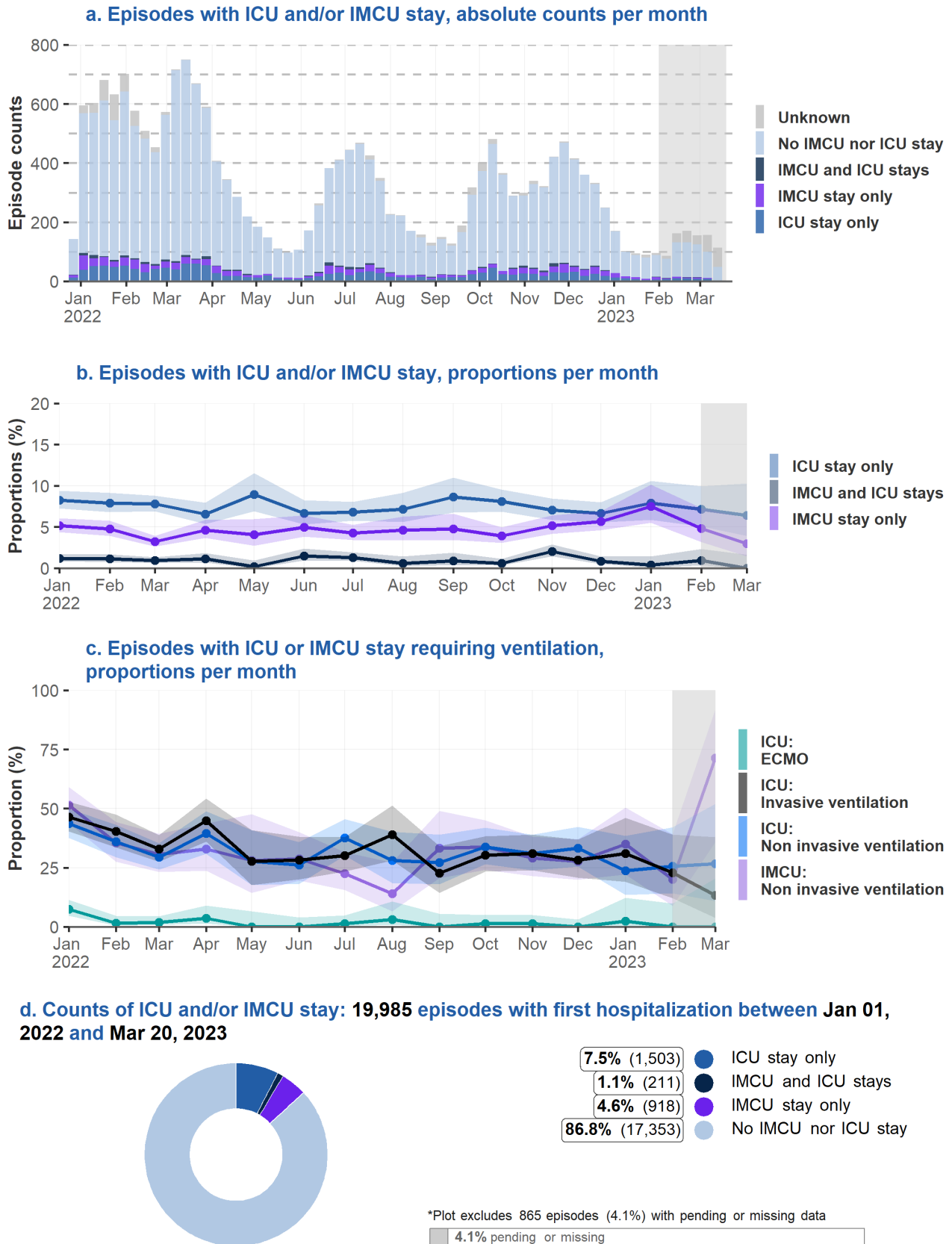


Figure 10: Counts and proportion of episodes with at least one ICU or IMCU admission over time. Evolution over time of the use of invasive, non-invasive and ECMO for ICU or IMCU admissions. Data from the last two months (highlighted gray) are considered provisional due to data entry delays.

4.2. ICU admission across demographic and risk groups

From January 2022 to January 2023, ICU admission probability across ages was roughly bimodal with a peak for the 10-19-year age group and for the 60-69 age group. The 60-69 age group had the highest probability of admission to the ICU, with 14.4% (366 of 2,546) of episodes including at least one ICU admission. During the same period, individuals aged 80 and above were least likely to be admitted to the ICU, with 4.2% (309 of 7,339) of the episodes including at least one ICU admission. Males were more likely to be admitted to the ICU than females. Overall, admissions to the ICU were registered for 9.9% of the episodes concerning males, compared to 6.6% of the episodes concerning females. Episodes of patients transferred from other hospitals had a high probability of ICU admission: 21.6% of such episodes (286 of 1,324) required at least one ICU admission, compared to an overall admission rate of 8.3% (Figure 11a).

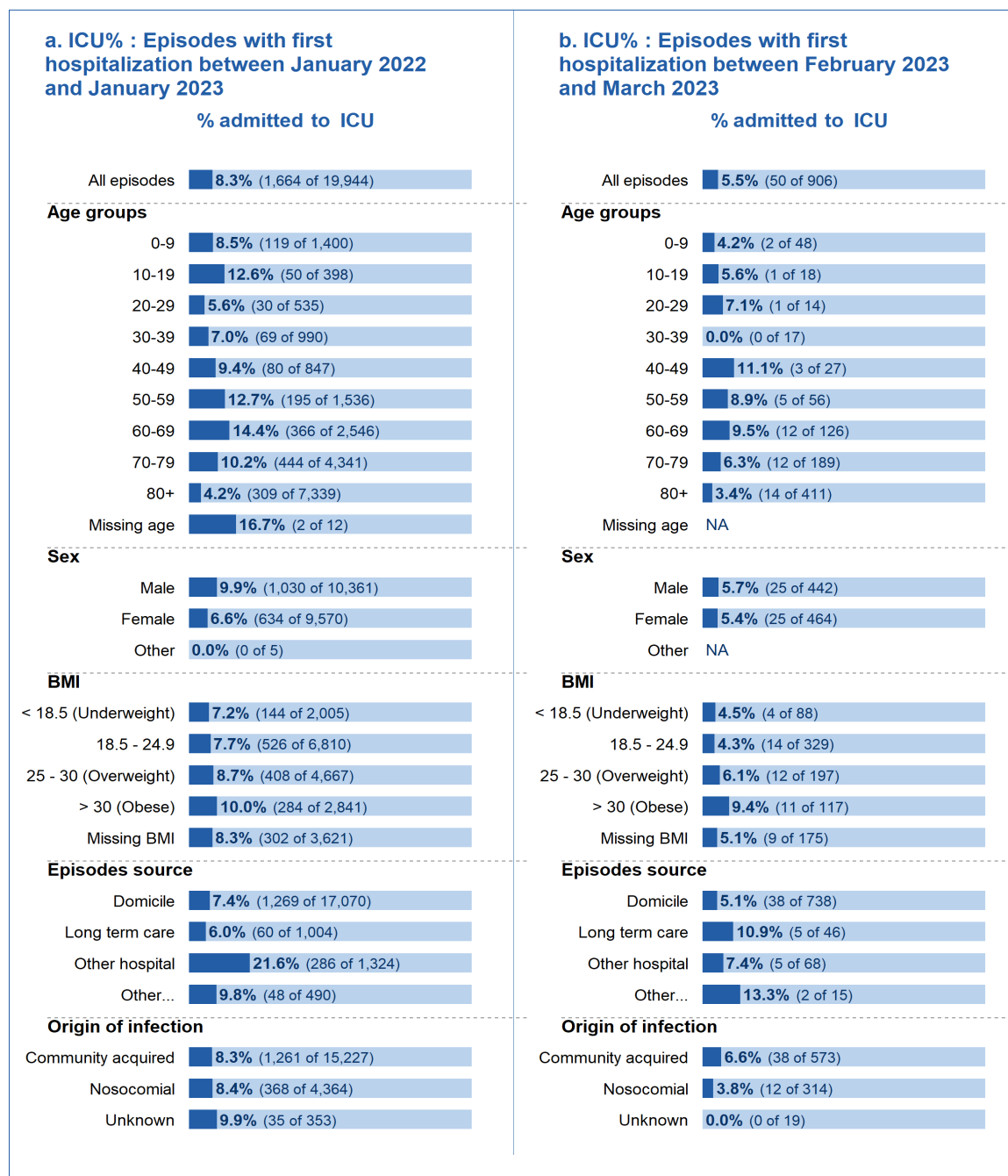


Figure 11: Percentage of hospitalization episodes with at least one ICU admission, grouped by demographic and risk factors, over two time intervals. For episodes with multiple hospitalizations, we considered whether they were admitted to the ICU during any of their hospitalizations. Records with incomplete data were not included.

4.3. ICU admission rate by vaccination status

Figure 12 shows the ICU admission rate, which is the number of episodes requiring an admission to the ICU over all episodes registered, stratified by vaccination status.

The percentage of not vaccinated patients among episodes with ICU stay decreased sharply from January to April from 61.6% to 25.9% and has fluctuated since then. (Figure 12b)

The relative counts for the age groups of 5-15 must be interpreted with caution due to the small numbers. (Figure 12c)

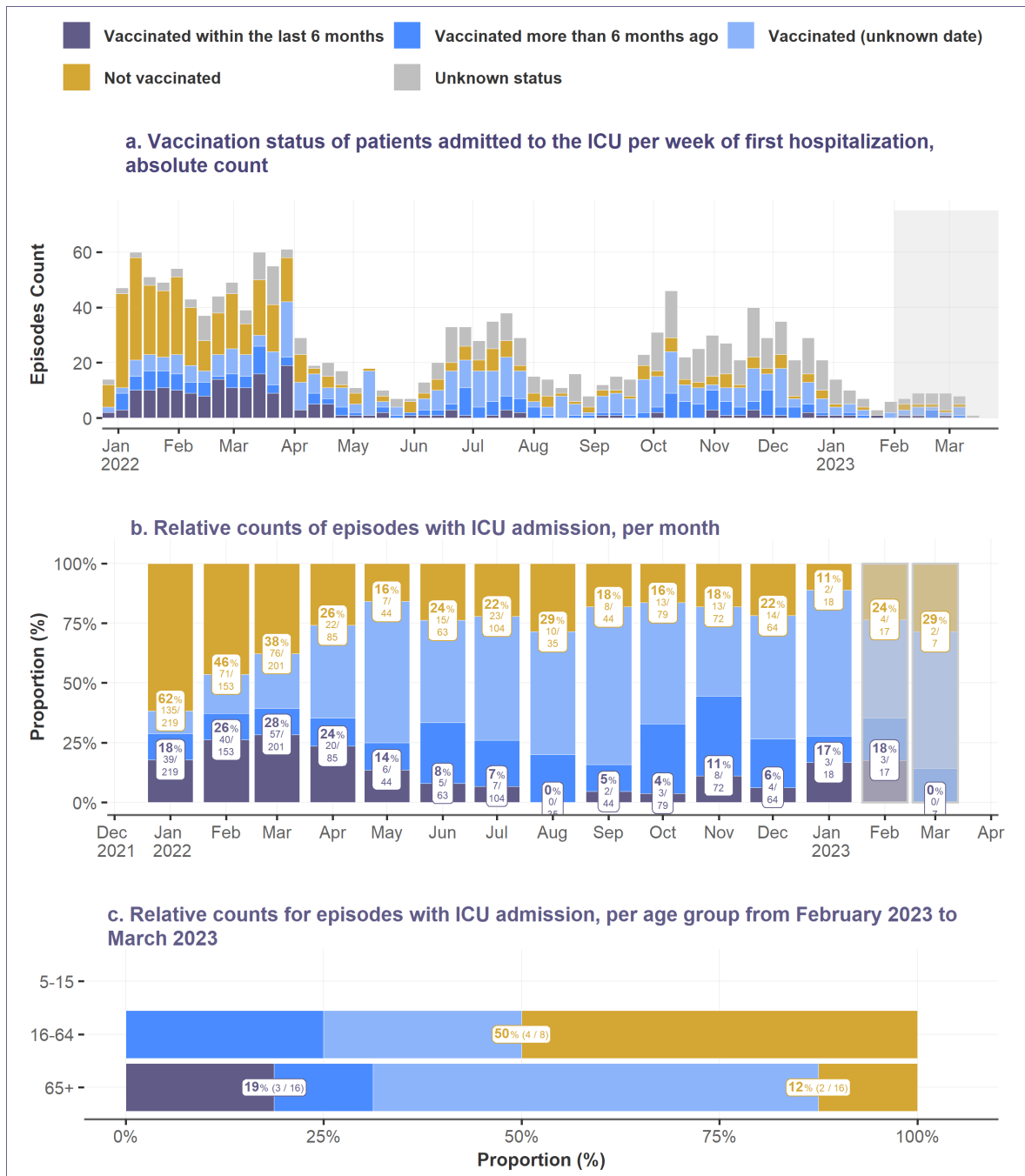


Figure 12: Demographic characteristics of hospitalized patients by immune status and immune status of patients over time. For episodes with multiple hospitalizations, the immune status for the first hospitalization was considered. For Figure 5c only: Episodes with missing ages and children between 0 to 4 years old (following vaccination recommendations) were excluded from the analysis.

4.4. ICU admission rate by age group and vaccination status

Figure 13 shows the ICU admission rate by age group and by vaccination status. Plots for the age groups 5-15 should be interpreted with caution, as the ICU% is calculated on a small number of episodes. The same caution applies in recent months, where peaks may be due to the small number of episodes.

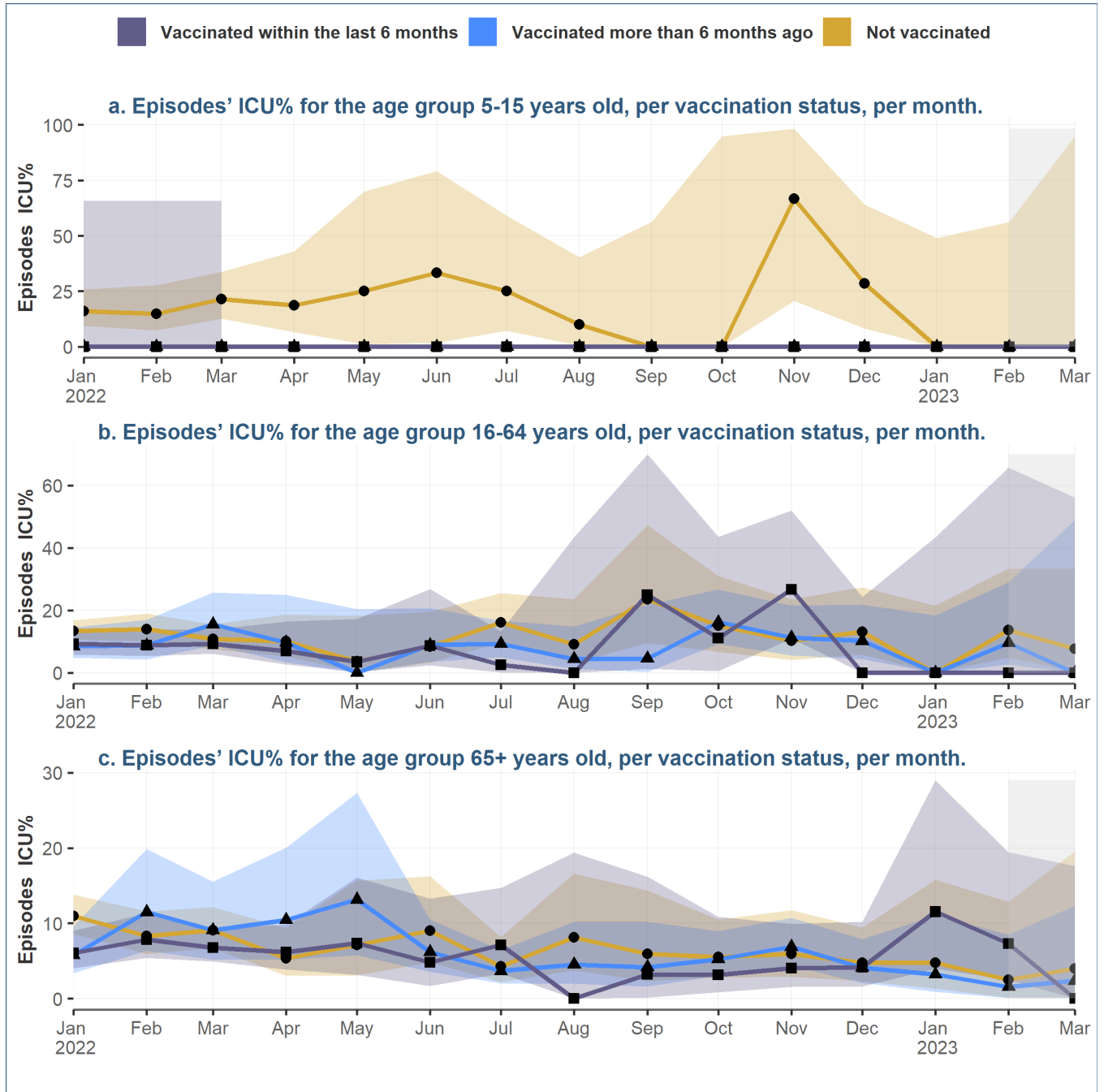
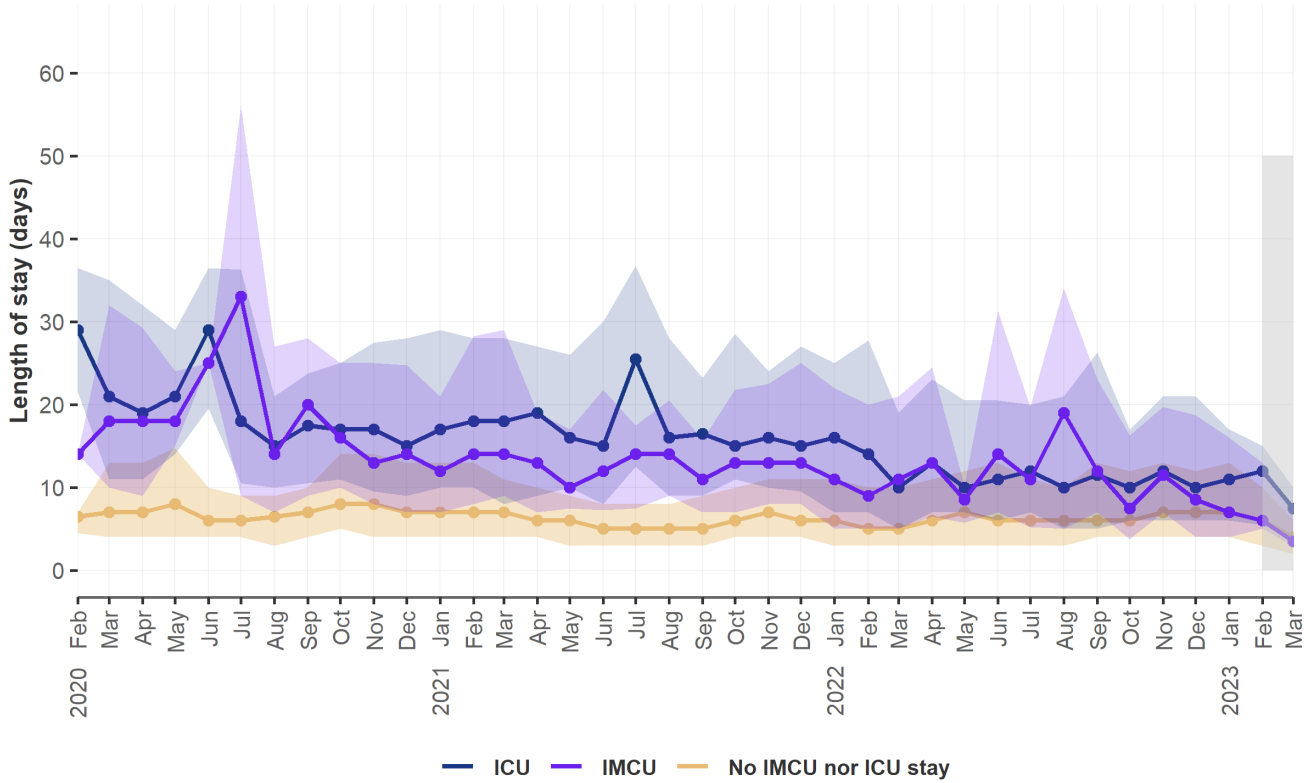


Figure 13: ICU admission rate (ICU%) by age and by vaccination status over time: percentage of episodes, which resulted in ICU admission. Records with incomplete data were not included. Data from the two last months (highlighted in gray) are considered provisional due to data entry delays. The coloured bands on this plot indicate the 95% confidence interval around the estimated ICU%. A gap in the coloured band means that the confidence interval goes beyond the displayed range of the plot.

5. Length of hospital stay

From February 01, 2020 to December 31, 2021 the median length of overall hospital stay was 8 days, with an interquartile range of 5 to 16 days. From January 01, 2022 to March 20, 2023 the median length of overall hospital stay was 7 days, with an interquartile range of 3 to 13 days. Analyses include patients who stayed in the hospital for more than 24 hours and less than 60 days. Rare outliers of episodes with extremely long stays would skew the analysis, therefore a cutoff at 60 days was chosen. From February 01, 2020 to March 20, 2023, 97.5% of patients stayed shorter than this duration and 2.5% of patients had stays longer than 60 days. For episodes linked to nosocomial infections, the date of the positive SARS-CoV-2 test was used as a “corrected” hospital entry date instead of the actual admission date. Figure 14 depicts the interquartile range and distribution of the length of stay over time with a focus on ICU/IMCU admissions and origin of infection per month.

a. Length of stay for episodes with or without ICU/IMCU admission, per month from Mar 01, 2020 to Mar 20, 2023



b. Length of stay by origin of infection, per month from Mar 01, 2020 to Mar 20, 2023

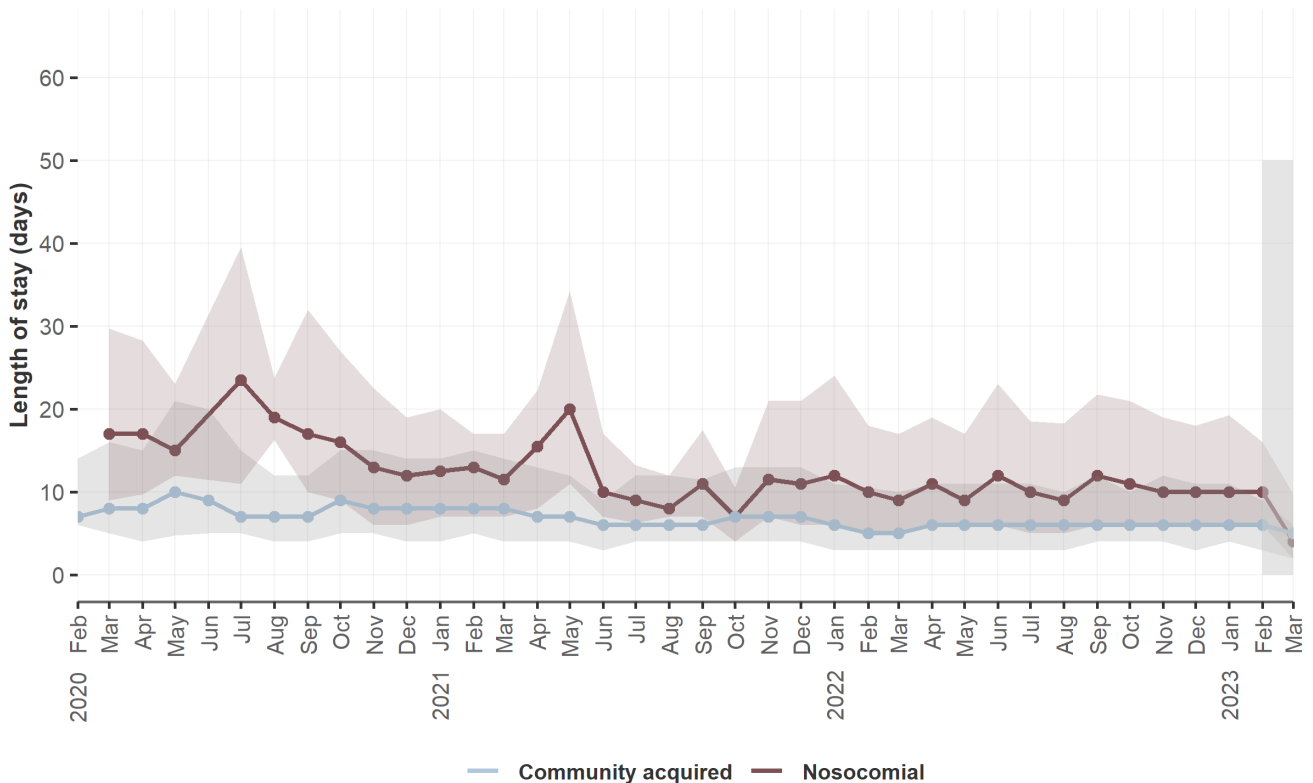


Figure 14: COVID-19 length of hospital stay over time. Lines indicate the median of the length of stay. The colored bands on this plot indicate the lower and the upper quartile around the median length of stay. Data from the last month is highlighted in gray.

Table 1 presents the length of hospital stay for different age groups from January 01, 2022 to March 20, 2023. Each row represents a specific age range and the columns provide information on the median length of stay, the interquartile range, and the number of episodes for each age group.

Figure 15 presents the length of hospital stay between January 01, 2022 and March 20, 2023, with a focus on origin of infection and ICU/IMCU admission. Regarding the origin of infection, the median length of stay was 10 days for nosocomial episodes, with an interquartile range of 6 to 19 days, compared to 6 days and an interquartile range of 3 to 11 days for episodes linked to community acquired infections. For episodes with ICU admissions, the median length of stay was 12 days, with an interquartile range of 6 to 22 days, compared to 6 days and an interquartile range of 3 to 11 days for episodes without ICU admission. For episodes with IMCU admissions, the median length of stay was 11 days, with an interquartile range of 5 to 21 days, compared to 6 days and an interquartile range of 3 to 12 days for episodes without IMCU admission.

The analyses did not consider other factors that may affect the length of stay, such as comorbidities.

How to read a violin plot:

A violin plot is a type of data visualization that is similar to a box plot, but it also includes information about density to show the distribution of a variable.

- The shape of the “violin” represents the distribution of the data. The wider the violin, the more values there are at that particular data point. Conversely, if the violin is narrow, there are fewer values there.
 - The thick black line in the middle of the violin represents the median value of the data.
 - The thin lines on either side of the violin represent the range of the data, excluding outliers.
 - Outliers are shown as individual points.
-

Table 1: COVID-19 length of hospital stay by age group: median, interquartile range, and number of episodes. Between January 01, 2022 and March 20, 2023

Age Group	Median Length of Stay (days)	Interquartile Range (days)	Number of Episodes
0-9	2	2-4	6112
10-19	4	2-7	2787
20-29	4	2-6	3074
30-39	4	2-6	6442
40-49	5	3-9	6756
50-59	6	3-11	14172
60-69	7	4-13	26298
70-79	7	4-14	48427
80+	8	5-15	87202

Distribution of length of stay in hospital between Jan 01, 2022 and Mar 20, 2023

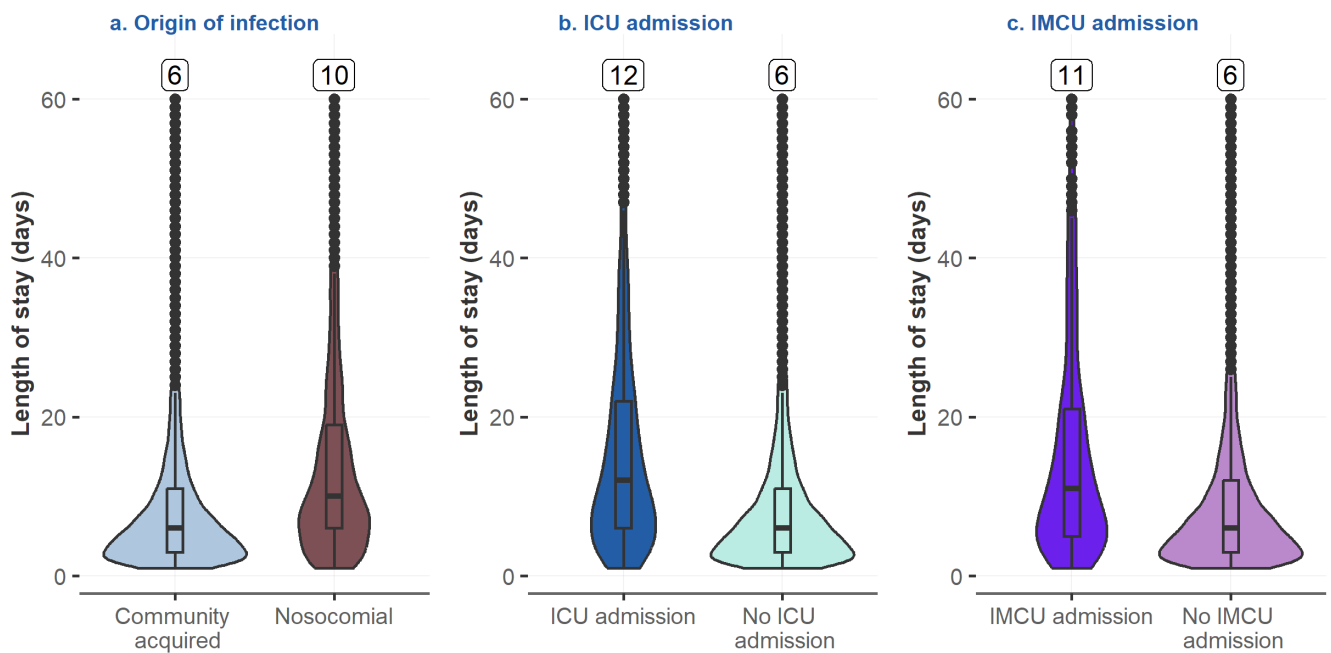


Figure 15: Distribution of the length of hospital stay for COVID-19 by origin of infection, ICU and IMCU admission. Each plot includes a box indicating the median length of hospital stay and interquartile range for each group.

6. Influenza

Data status: March 20, 2023

6.1. Influenza epidemic curves

The influenza's seasonal data collection within CH-SUR begins each November. In Figure 16, the current influenza epidemic curve is represented in light of the past seasons' epidemic curves. Epidemic curves should be compared with caution, due to a varying number of hospitals which reported data over each specific season. Essential demographic information for the ongoing influenza season is also displayed. For additional weekly updates about the current influenza season please refer to [Saisonale Grippe – Lagebericht Schweiz](#).

This data is not representative for the whole nation of Switzerland, but represents the situation among CH-SUR participating hospitals.

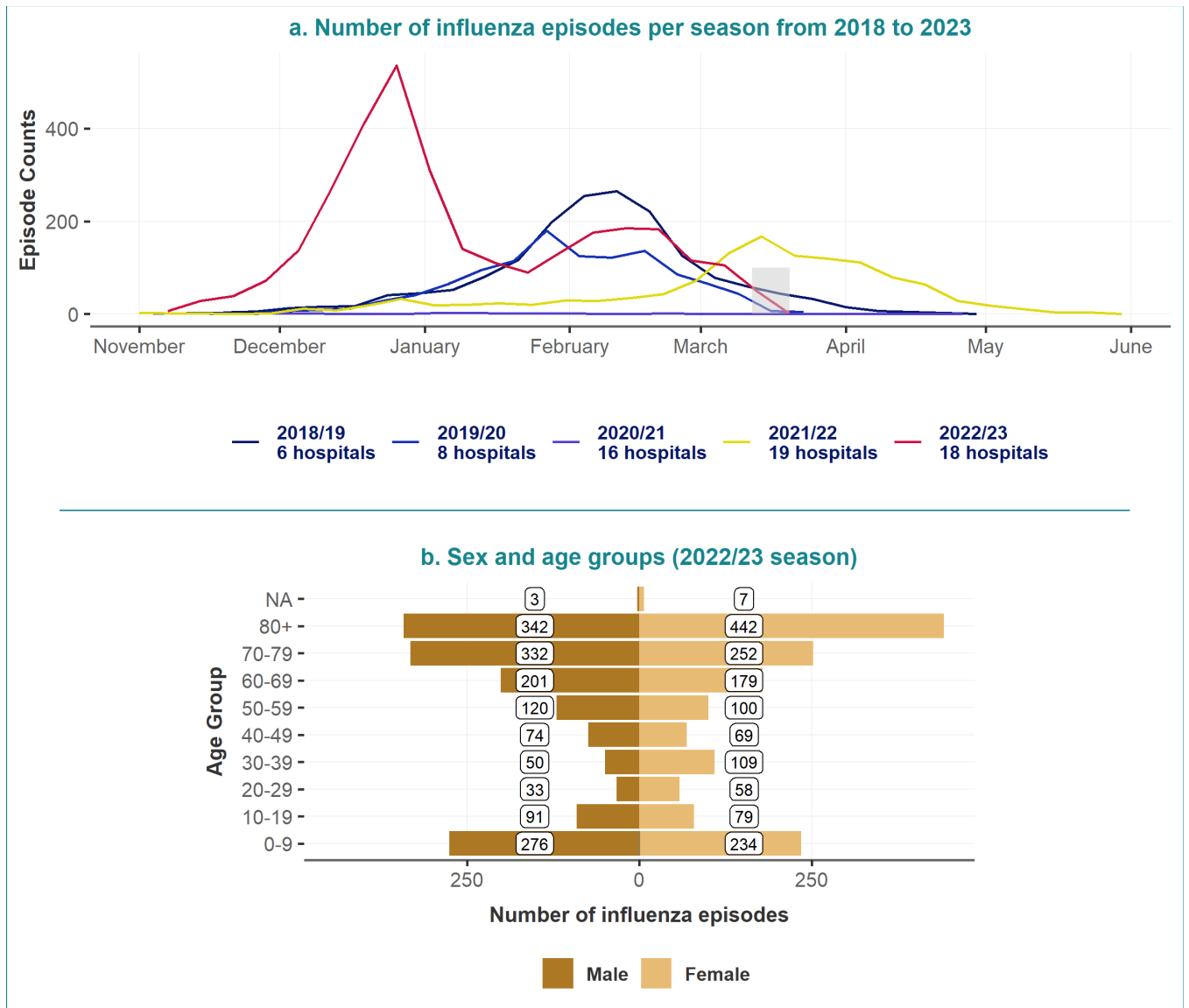


Figure 16: Number of episodes per influenza seasons, with the age and sex demographic characteristics of the ongoing season. Data from the last two weeks (highlighted gray) is considered provisional due to entry delays.

6.2. Summary of influenza episodes for the season 2022-2023:

Important note:

Given the limited number of patients and events, all epidemiological and clinical data included in this report are to be interpreted with caution. **Additional registrations are expected.**

- From week 2022-44 to week 2023-10, we registered a total of 3052 influenza episodes including 436 (14%) nosocomial infections among CH-SUR hospitals. For 38 influenza episodes, it is unknown if the infection is nosocomial (Figure 17).
- At this stage of the season, influenza type A virus was detected in 2652 (87%) episodes, and influenza type B virus in 389 (13%) episodes. Influenza type was unknown for 11 episodes.
- Information regarding the patient's vaccination status is available for 856 out of the 3052 influenza episodes (2196 unknowns). 713 (83%) influenza episodes occurred among non-vaccinated patients.
- A total of 199 (7%) influenza episodes concerned patients admitted to intermediate care (101 unknowns). Among those, 85 (43%) required non-invasive ventilation.
- A total of 300 (10%) influenza episodes concerned patients admitted to ICU (149 unknowns). Among those, 131 (44%) required non-invasive ventilation, 110 (37%) required invasive ventilation and 14 (5%) required ECMO.
- A total of 66 influenza episodes resulted in death during the hospitalization in this season.

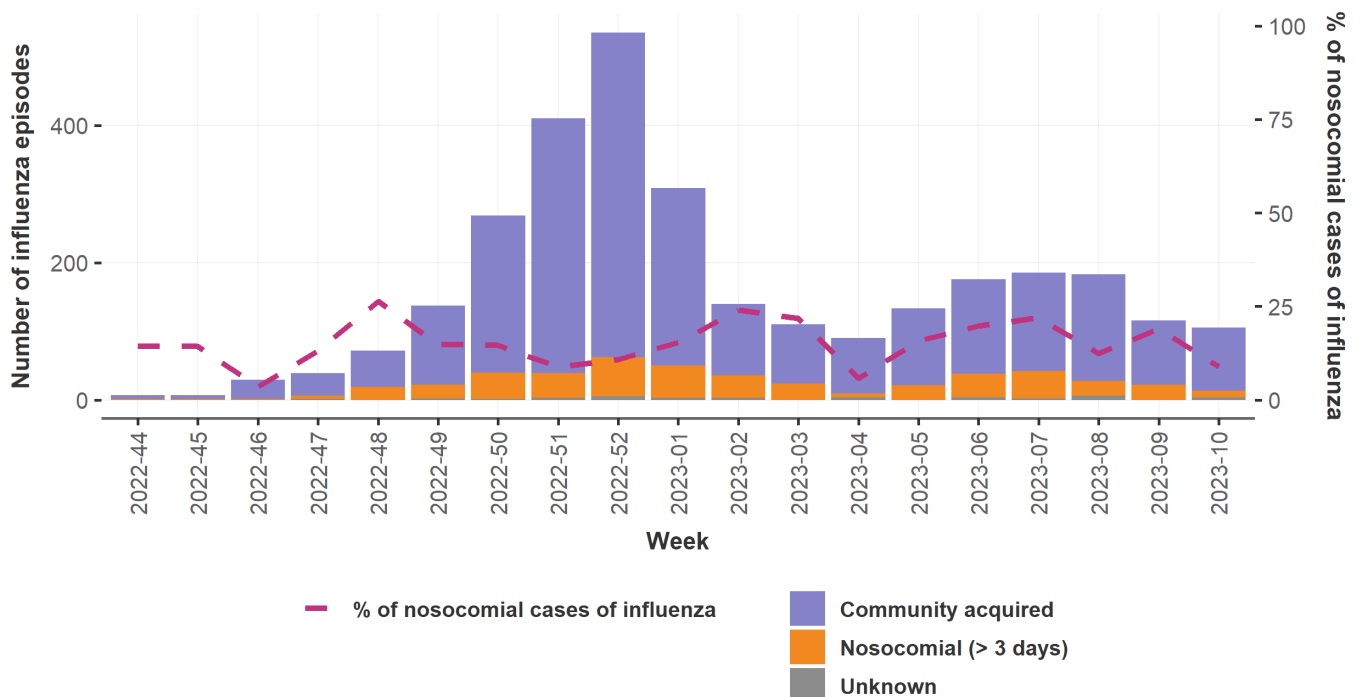


Figure 17: Number of influenza episodes per week according to the origin of infection.

7. Glossar und ergänzende Informationen

Hospitals participating to data collection / Spitäler welche zur Datensammlung beitragen: Spitäler, die an der Datenerfassung teilnehmen: Eine Liste der Schweizer Spitäler, die derzeit am CH-SUR-System teilnehmen, finden Sie auf der Webseite [Hospital-based surveillance of COVID-19 in Switzerland website](#).

CH-SUR erfasst Daten von Patientinnen und Patienten, welche mit einer dokumentierten Infektion mit SARS-CoV-2 hospitalisiert wurden und deren Spitalaufenthalt länger als 24 Stunden andauert. Als Bestätigung für eine Infektion gilt ein positiver PCR-Test (Polymerase Chain Reaction) oder ein positiver Antigen-Schnelltest wie auch ein klinischer Befund für COVID-19. Nosokomiale SARS-CoV-2-Infektionen werden in der Datenbank ebenfalls erfasst und in einem separaten Kapitel am Schluss dieses Berichts aufgeführt.

Hospitalization / Hospitalisation:

Bei der Hospitalisation handelt es sich um die kleinste Datenanalyseeinheit. Sie ergibt sich aus jeweils einem Ein- und Austritt in einem an CH-SUR teilnehmenden Spital, wenn der Aufenthalt länger als 24 Stunden andauert. Jede Aufnahme einer Person in ein Spital wird als neue Hospitalisation gezählt. Da es innerhalb desselben Krankheitsverlaufs (einer einzelnen Infektion) häufig zu mehreren Hospitalisationen (Wiedereintritten) kommt, erfolgt die Analyse in diesem Bericht anhand der Anzahl Episoden und nicht anhand der Anzahl Hospitalisationen.

Episode / Episode:

Bei jeder Neuaufnahme in ein Spital, die mindestens 30 Tage nach einer früheren Hospitalisation erfolgt und zu einem Aufenthalt von mehr als 24 Stunden führt, wird eine Episodennummer vergeben. Wird eine Person innerhalb von 30 Tagen nur einmal oder mehrfach hospitalisiert, wird in beiden Fällen nur eine Episode gezählt. Wird eine Person im Abstand von über 30 Tagen zweimal hospitalisiert, werden zwei unterschiedliche Episodennummern vergeben. Wird eine Person innerhalb von 30 Tagen nach der letzten Entlassung zwischen zwei an CH-SUR teilnehmenden Spitälern transferiert, werden diese Hospitalisationen zur selben Episode gezählt. Eine Episode kann deshalb mehrere Hospitalisationen und jede Hospitalisation kann mehrere IPS-Aufnahmen umfassen.

Reason for the hospitalization / Hospitalisationsgrund:

- *Hospitalization because of COVID-19 / Hospitalisation aufgrund von COVID-19:* Basierend auf den bei der Aufnahme verfügbaren Informationen wird die Person hospitalisiert, weil sie Symptome aufgrund von COVID-19 aufweist oder an einer offensichtlich durch COVID-19 verursachten Dekompensation einer chronischen Krankheit leidet.
- *Hospitalization with a SARS-CoV-2 infection / Hospitalisation mit einer SARS-CoV-2-Infektion:* Basierend auf den bei der Aufnahme verfügbaren Informationen weist die Person einen positiven SARS-CoV-2-Test auf, wird aber ohne COVID-19-Symptome aus einem nicht mit COVID-19 zusammenhängenden Grund hospitalisiert. Das Hauptproblem ist also ein Unfall oder eine Erkrankung, die nicht mit COVID-19 in Verbindung steht.

Origin of the infection / Infektionsursprung:

- *Community acquired infection: / Ambulant erworbene Infektion:* Die SARS-CoV-2 Infektion wurde vor der Aufnahme in das Spital oder innerhalb der ersten fünf Tage nach der Aufnahme festgestellt.
- *Nosocomial infection / Nosokomiale Infektion:* Eine Episode gilt als «nosokomial» (healthcare-assoziiert, im Spital zugezogen), wenn die SARS-CoV-2-Infektion fünf oder mehr Tage nach der Aufnahme in das Spital festgestellt wird.

Severity score at admission / Schweregrad bei der Aufnahme:

Bei Erwachsenen wird zur Beurteilung des Schweregrads der CURB-65 Score angewendet. Für jedes der folgenden Kriterien wird jeweils 1 Punkt gezählt: Verwirrtheit (Abbreviated Mental Test Score < 9), Serumharnstoff > 19 mg/dl, Atemfrequenz > 30 pro Minute, tiefer Blutdruck (diastolisch < 60 oder systolisch < 90 mmHg), Alter > 65 Jahre. Bei Kindern wird je ein Punkt für folgende Kriterien gezählt: Atemnot, Sauerstoffsättigung < 92%, Anzeichen schwerer klinischer Dehydratation oder eines klinischen Schocks und ein veränderter Bewusstseinszustand. Der Schweregrad entspricht der Summe der jeweiligen gezählten Punkte.

Intermediate care unit (intermediate care or IMCU) / Intermediate Care Unit (IMCU): Pflegestation für Personen, die an einer Störung einer lebenswichtigen Funktion leiden oder deren Pflegelast keine Rückkehr in eine Bettenstation erlaubt. Die Intermediate Care Unit bildet das Bindeglied zwischen Intensivpflegestation und Bettenstation.

Intensive care unit (ICU) / Intensivpflegestation (IPS): Pflegestation für Personen, die eine schwerwiegende Störung einer oder mehrerer lebenswichtiger Funktionen haben oder bei denen das Risiko schwerer Komplikationen besteht.

Vaccination status / Impfstatus:

Die Definition des Impfstatus basiert auf der letzten verabreichten Impfdosis, sofern der Patient oder die Patientin eine solche erhalten hat. Der Impfstatus umfasst folgende Kategorien:

- a) *Geimpft innerhalb der letzten 6 Monate:* Patient/-innen, die ihre letzte Impfdosis innerhalb von 6 Monaten vor dem Zeitpunkt des positiven SARS-CoV-2-Tests erhalten haben.
- b) *Geimpft vor mehr als 6 Monaten:* Patient/-innen, die ihre letzte Impfdosis mehr als 6 Monate vor dem Zeitpunkt des positiven SARS-CoV-2-Tests erhalten haben.
- c) *Geimpft (Datum unbekannt):* Patient/-innen, die vor dem positiven Test mindestens eine Dosis der von der WHO zugelassenen Impfstoffe erhalten haben, wobei jedoch nicht bekannt ist, wann die letzte Dosis verabreicht wurde.
- d) *Ungeimpft:* Patient/-innen, die zum Zeitpunkt des positiven SARS-CoV-2-Tests keine einzige Dosis eines von der WHO zugelassenen Impfstoffs erhalten hatten.
- e) *Status unbekannt:* Patient/-innen, für die keine Angaben zur Impfung vorlagen.

Wichtiger Hinweis: Besondere Bevölkerungsgruppen: Kinder unter 5 Jahren sind in keiner altersspezifischen Analyse zum Impfstatus erfasst, da für sie keine Impfung empfohlen wird

Discharge / Entlassung: Ein Spitalaustritt gilt als «Entlassung», wenn die Person das Spital mit einem der folgenden Zielorte verlässt: 1. nach Hause; 2. Langzeitpflegeeinrichtung; 3. anderes Spital; 4. andere Einrichtung, die sich nicht am CH-SUR-Überwachungssystem beteiligt; 5. Rehabilitationseinrichtung; 6. unbekannter Zielort

Reason of death / Todesursache: Personen, bei denen COVID-19 die Todesursache war (died of COVID-19 / verstorben an COVID-19), werden getrennt aufgeführt von den COVID-19-Patientinnen und -Patienten, die wegen anderer Todesursachen verstarben (died with COVID-19, but not of COVID-19 / verstorben mit COVID-19, aber nicht an COVID-19). Ob eine Person an COVID-19 oder aus einem anderen Grund verstarb, wird auf Spitalebene im betreffenden am CH-SUR-System teilnehmenden Zentrum von einer Ärztin oder einem Arzt beurteilt. Fälle, in denen die Todesursache nicht sicher ist, aber eine COVID-19-Diagnose vorliegt (in Übereinstimmung mit den Einschlusskriterien für CH-SUR), werden als «verstorben an COVID-19» oder «vermuteter COVID-19-Todesfall» gezählt.

Dealing with missing data / Umgang mit fehlenden Daten: Wenn im Text erwähnt, werden fehlende Daten von der Analyse ausgeschlossen. Andernfalls werden Datensätze mit fehlenden Daten in der Gesamtanzahl berücksichtigt und entsprechend analysiert. Dies kann dazu führen, dass die Denominatoren der verschiedenen analysierten Kategorien nicht dieselbe Gesamtsumme ergeben. In einigen Abbildungen werden die Daten der letzten beiden Monate aufgrund von Verzögerungen bei der Datenerfassung als provisorisch betrachtet und grau markiert, wobei dies jeweils angegeben wird.

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