

# Rapporto sul sistema di sorveglianza ospedaliero COVID-19-Sentinel

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**Stato: 22 maggio 2023**

**Avvertenza:** Al termine della stagione invernale 2022/23, il rapporto mensile CH-SUR sarà temporaneamente sospeso a partire da giugno 2023. La pubblicazione dei dati di CH-SUR riprenderà regolarmente a partire dall'autunno 2023.

## 1. Introduzione per il rapporto mensile CH-SUR:

Il sistema di sorveglianza dell'influenza negli ospedali è stato istituito nel 2018 a complemento dei sistemi di dichiarazione obbligatoria per i casi di influenza in Svizzera e per colmare le lacune esistenti nel monitoraggio delle malattie infettive. Appena quattro giorni dopo il primo caso confermato di COVID-19, il programma è stato adattato per registrare le ospedalizzazioni collegate a infezioni da SARS-CoV-2 confermate in laboratorio.

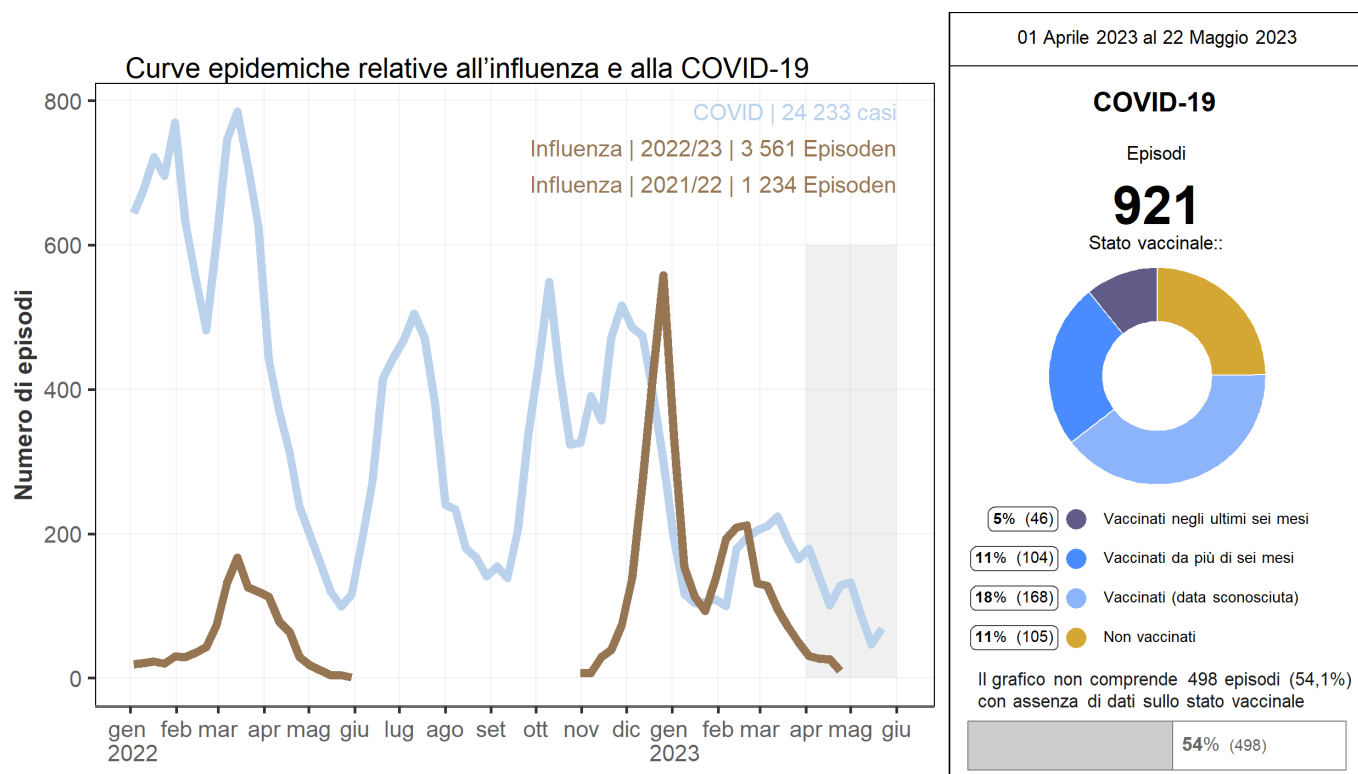
Attualmente partecipano attivamente al **sistema di sorveglianza sentinella della COVID-19 negli ospedali (CH-SUR)** **18 ospedali** in tutta la Svizzera. L'obiettivo primario di CH-SUR è registrare informazioni cliniche ed epidemiologiche complete sul carico di malattia, come il numero e la durata delle **ospedalizzazioni**, delle degenze nelle **unità di cure intensive (UCI)** e se durante l'ospedalizzazione il paziente è deceduto **per o con la COVID-19** o l'influenza. Per ulteriori definizioni e dettagli sui dati, si veda la sezione **Glossario e i materiali** supplementari in calce al presente rapporto.

Il presente rapporto copre il periodo da quando la variante Omicron è diventata dominante (1° gennaio 2022) all'ultima data di estrazione dei dati, il 22 maggio 2023. In questo periodo sono stati raccolti dati relativi a 24 233 **episodi** di ospedalizzazione dovuti a COVID-19 e 4 795 episodi dovuti all'influenza. Le figure **1** e **2** mostrano una panoramica dei dati rilevati negli ultimi due mesi. La raccolta di dati sull'influenza nel sistema CH-SUR si è conclusa, per la stagione attuale, il 23 aprile 2023 (16a settimana). La sezione 6 del presente rapporto mensile fornisce una panoramica dell'intera stagione influenzale 2022/2023 (dalla 44a settimana del 2022 alla 16a settimana del 2023).

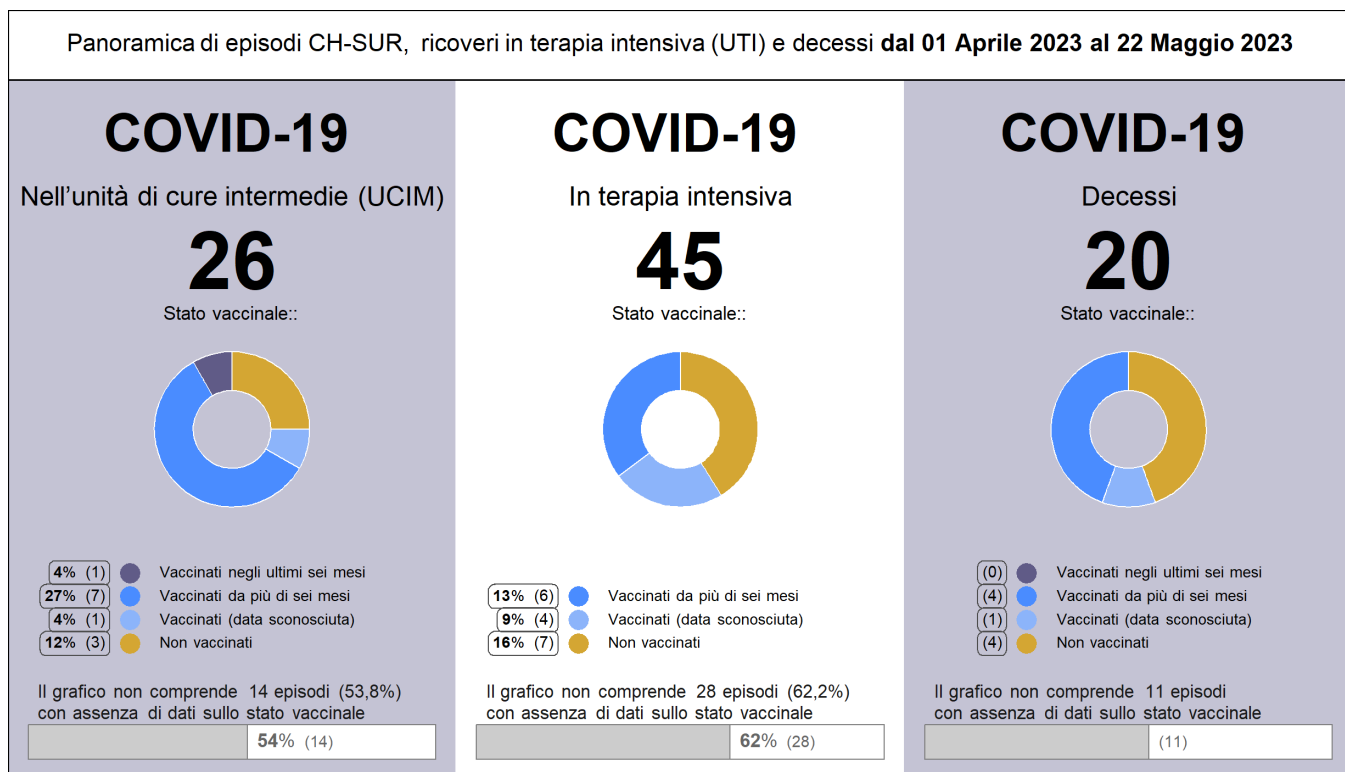
Sintesi dell'evoluzione degli episodi di ospedalizzazione dovuti a COVID-19 negli ultimi due mesi (dal 1° aprile 2023 al 22 maggio 2023):

- Negli ultimi due mesi, nel sistema CH-SUR sono stati registrati 921 episodi di COVID-19, di cui 292 (31,8%) erano collegati a infezioni nosocomiali (cfr. figura **4** e sezione **2.1**).
- 45 episodi di COVID-19 (5,7%) hanno comportato almeno una degenza nelle UCI e 26 episodi (3,3 %) almeno una degenza nella unità di cure intermedie (UCIM). Tali quote sono rimaste relativamente stabili dal 1° gennaio 2022 (cfr. sezione **4.1**).
- Il tasso di letalità complessivo degli episodi di COVID-19 è stato pari al 3,5 per cento, ossia più basso del tasso registrato tra gennaio 2022 e marzo 2023, pari al 4,2 per cento (cfr. sezione **3.1**).

Un capitolo a parte del presente rapporto mensile descrive l'occorrenza di complicazioni infettive (infezioni batteriche/micotiche e polmonite) tra gli episodi di COVID-19 registrati nel sistema CH-SUR dall'inizio della pandemia (cfr. sezione **5**).



**Figura 1:** Panoramica dei dati più recenti sui casi di ospedalizzazione. I dati degli ultimi due mesi sono considerati provvisori a causa di ritardi nell'immissione e sono pertanto stati omessi. Per la stagione influenzale 2021/22: sono inclusi solo gli episodi che iniziano dopo il gennaio 2022.



**Figura 2:** Panoramica dei dati più recenti sui casi di ospedalizzazione.

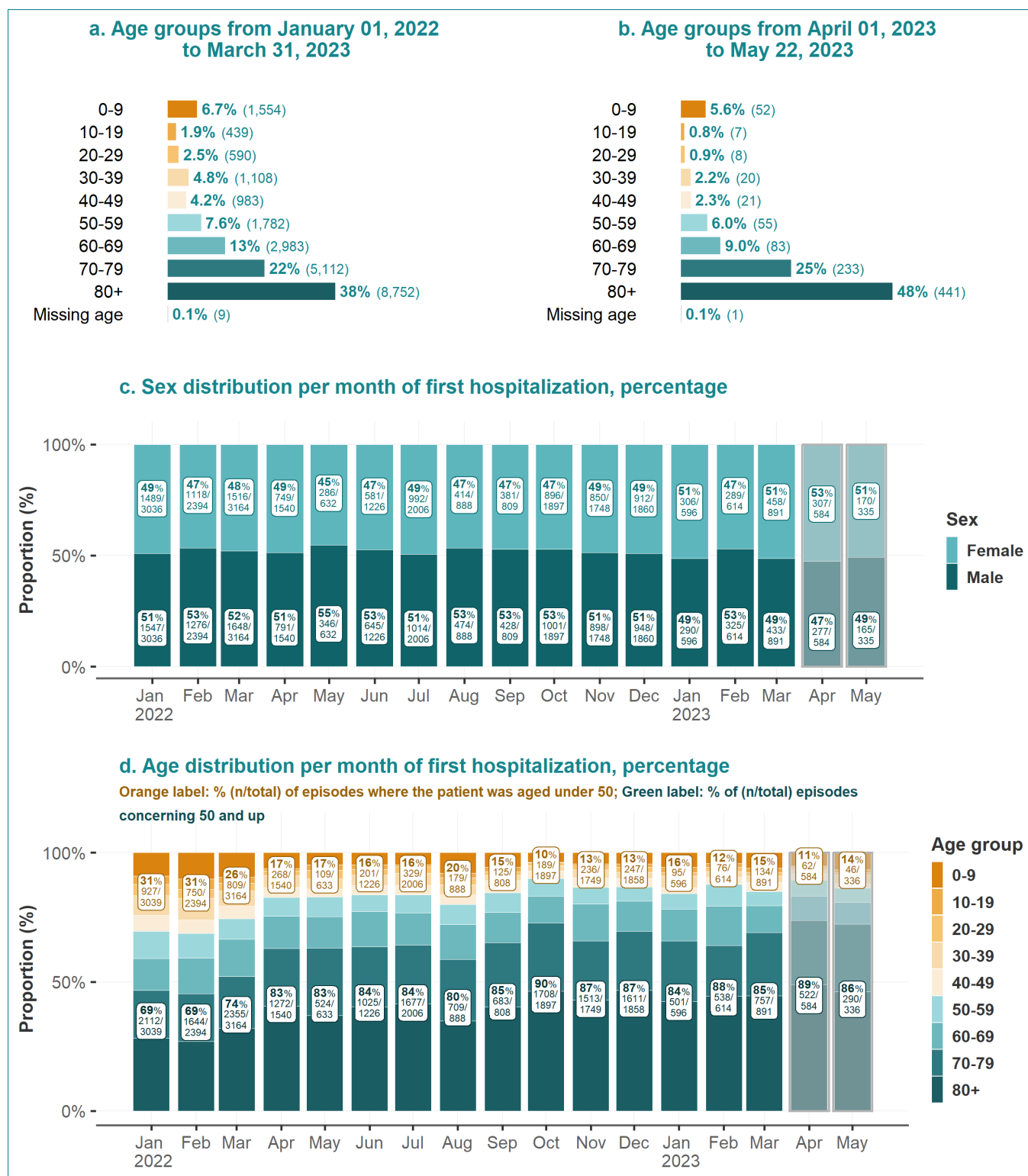
## 2. Hospitalizations and patient characteristics

Between January 01, 2022 and May 22, 2023 and among the 18 hospitals actively participating in CH-SUR, 24,233 **episodes** were registered, accounting for a total of 24,796 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 May 22, 2023, most patients (97.8% (23,711 of 24,233)) were hospitalized only once during an episode, while 2.2% of the registered episodes (522 of 24,233) included two to four hospitalizations. Only one episode included five hospitalizations.

Among all episodes, 51.6% (12,506 of 24,233) of the episodes concerned male patients and 48.3% (11,714 of 24,233) episodes concerned female patients. Sex type was defined as *other* for 13 patients. The age distribution was skewed towards older persons (Figure 3a and b). The largest age category corresponded to patients aged 80 and above (48.0% (441 of 921)).

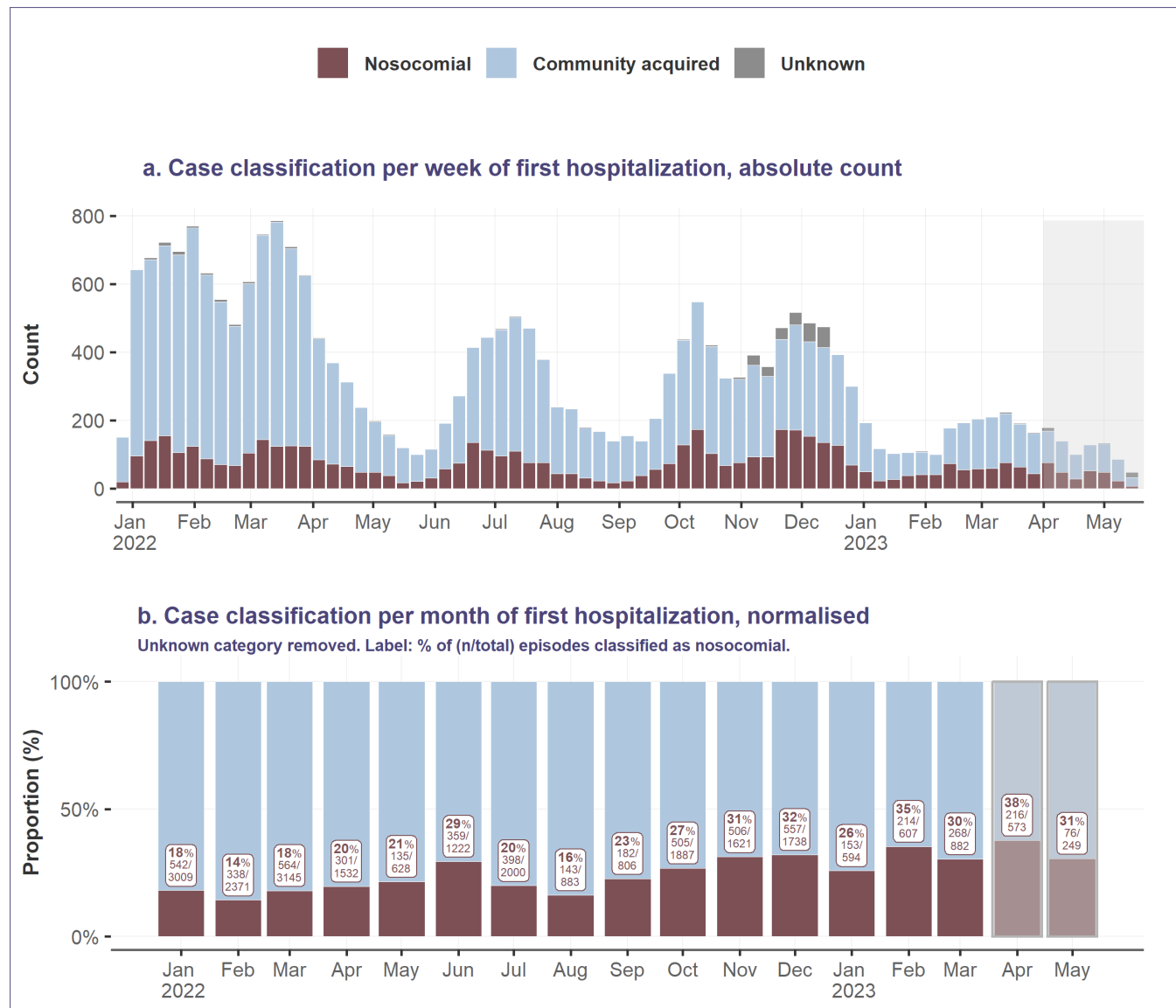
Figures 3c and 3d show the sex and age distribution ratio over time. During most months, more men than women were admitted. During the period of observation, the proportion of episodes concerning patients aged 50 years old and above was the lowest in February 2022 with 68.7% (1,644 of 2,394). In October 2022, 90% (1,708 of 1,897) 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

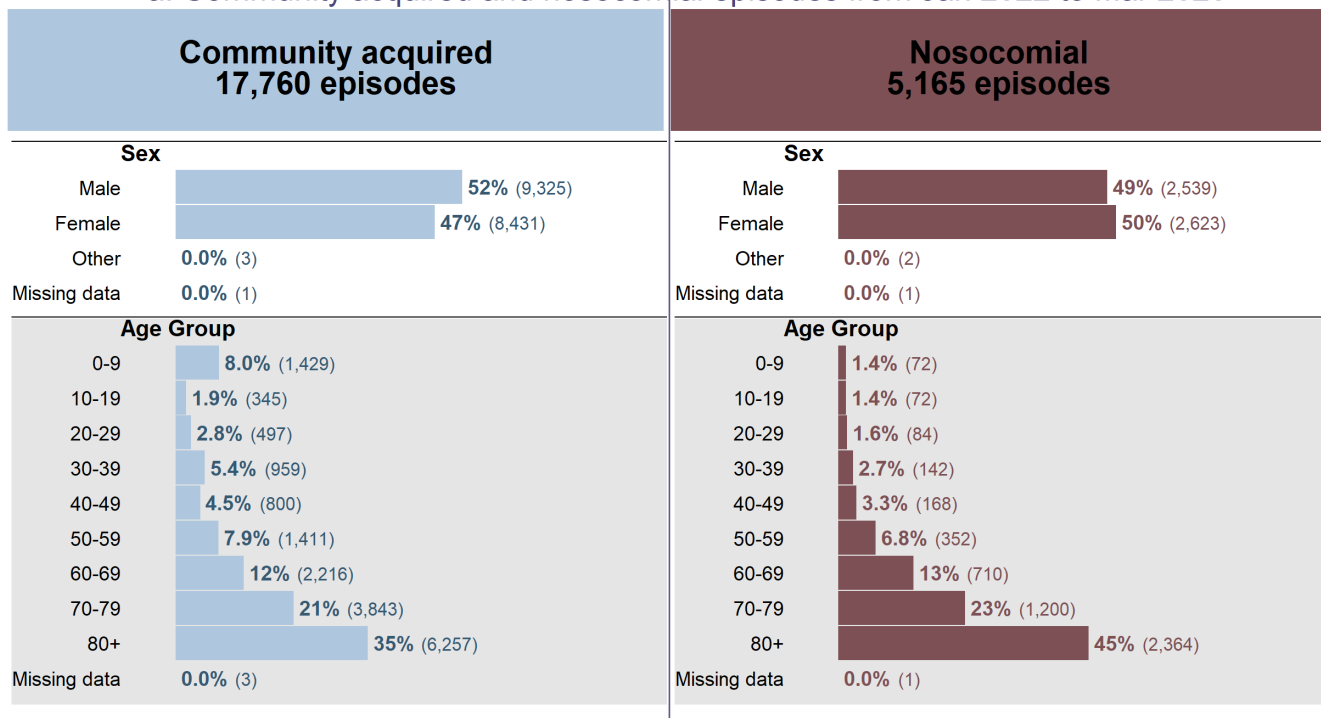
From January 01, 2022 to May 22, 2023, the overall percentage of nosocomial infections among all documented episodes was 22.6% (5,457 of 24,233) while episodes linked to community acquired infections accounted for 75.4% (18,290 of 24,233) (Figure 4). For 2.0% of the episodes, it is unknown if the infection was nosocomial or community acquired.



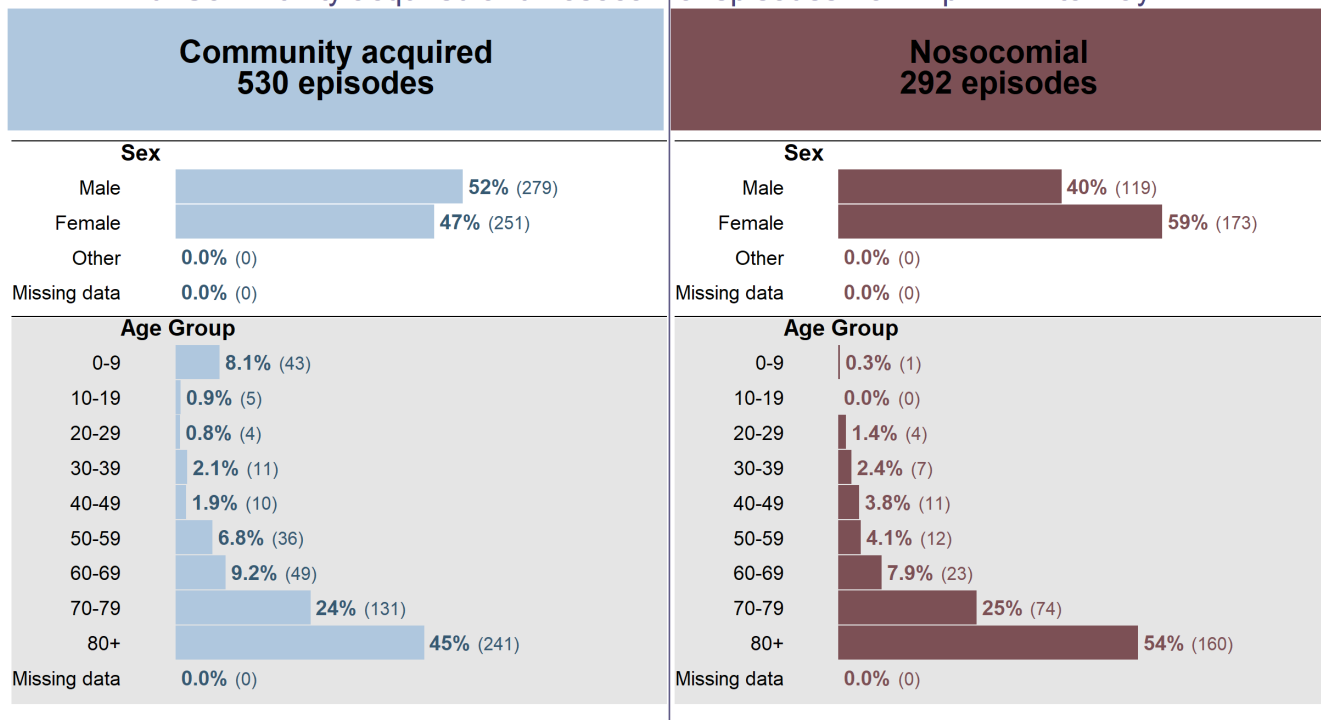
**Figure 4:** Case classification (origin of infection) of the episodes. The absolute count of episodes over time (panel a) and the proportion (normalized in %) of episodes by origin of infection (panel b). For episodes with multiple hospitalizations, the case classification of the first hospitalization 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 2,364 (45.8%) of the nosocomial episodes from January 01, 2022 to March 31, 2023. Furthermore, patients aged 80 years and above also account for a majority of community-acquired infections with 6,257 (35.2%) episodes from January 01, 2022 to March 31, 2023 (Figure 5a).

### a. Community acquired and nosocomial episodes from Jan 2022 to Mar 2023



### b. Community acquired and nosocomial episodes from Apr 2023 to May 2023



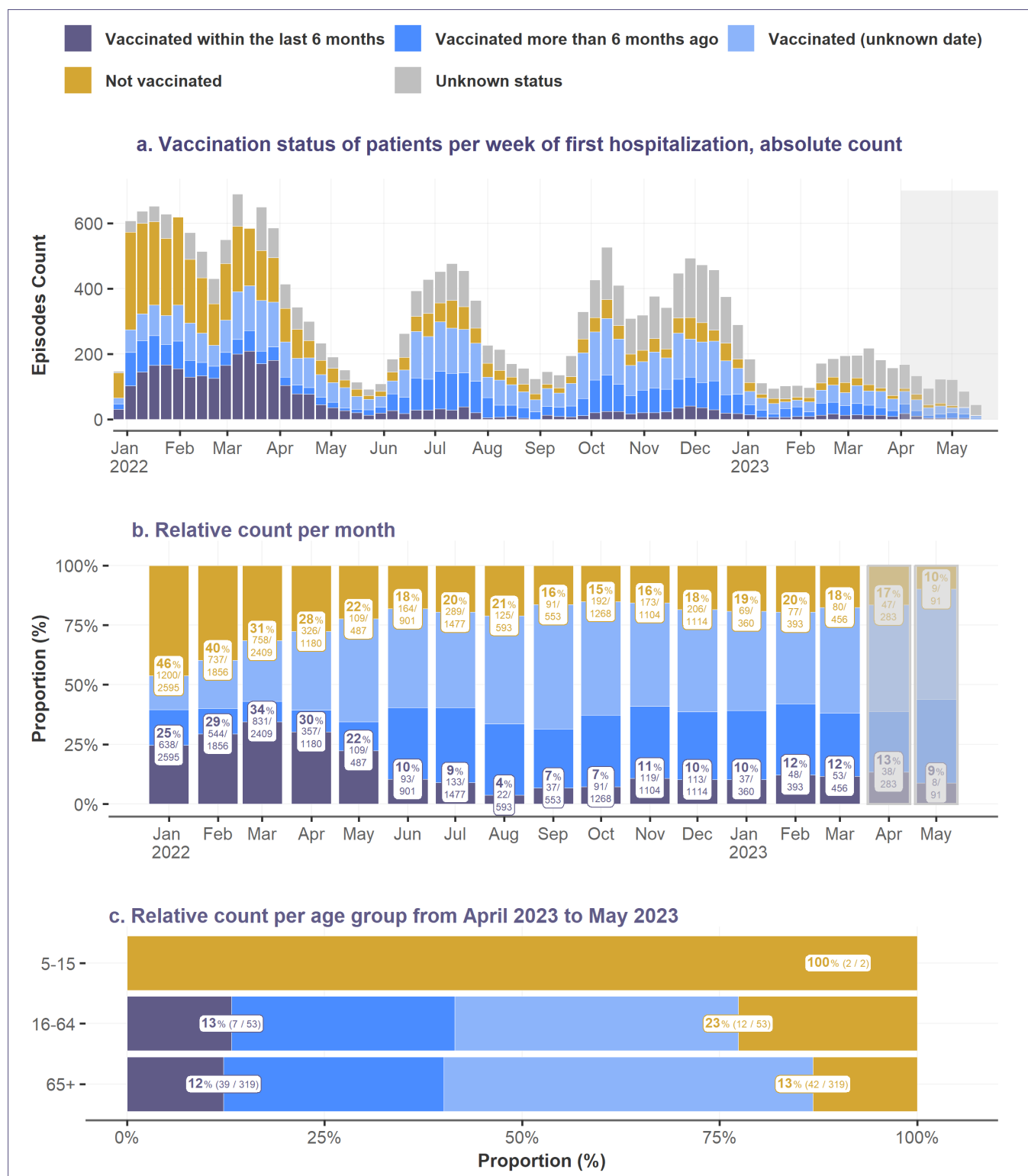
**Figure 5:** Comparison of community acquired and nosocomial cases by demographic characteristics.

## 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.

On May 22, 2023, 72.8% of the Swiss population was vaccinated with at least one dose ([FOPH, COVID-19 Dashboard](#)). In May 2023, 8.79% of episodes in CH-SUR concerned individuals who 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%**.



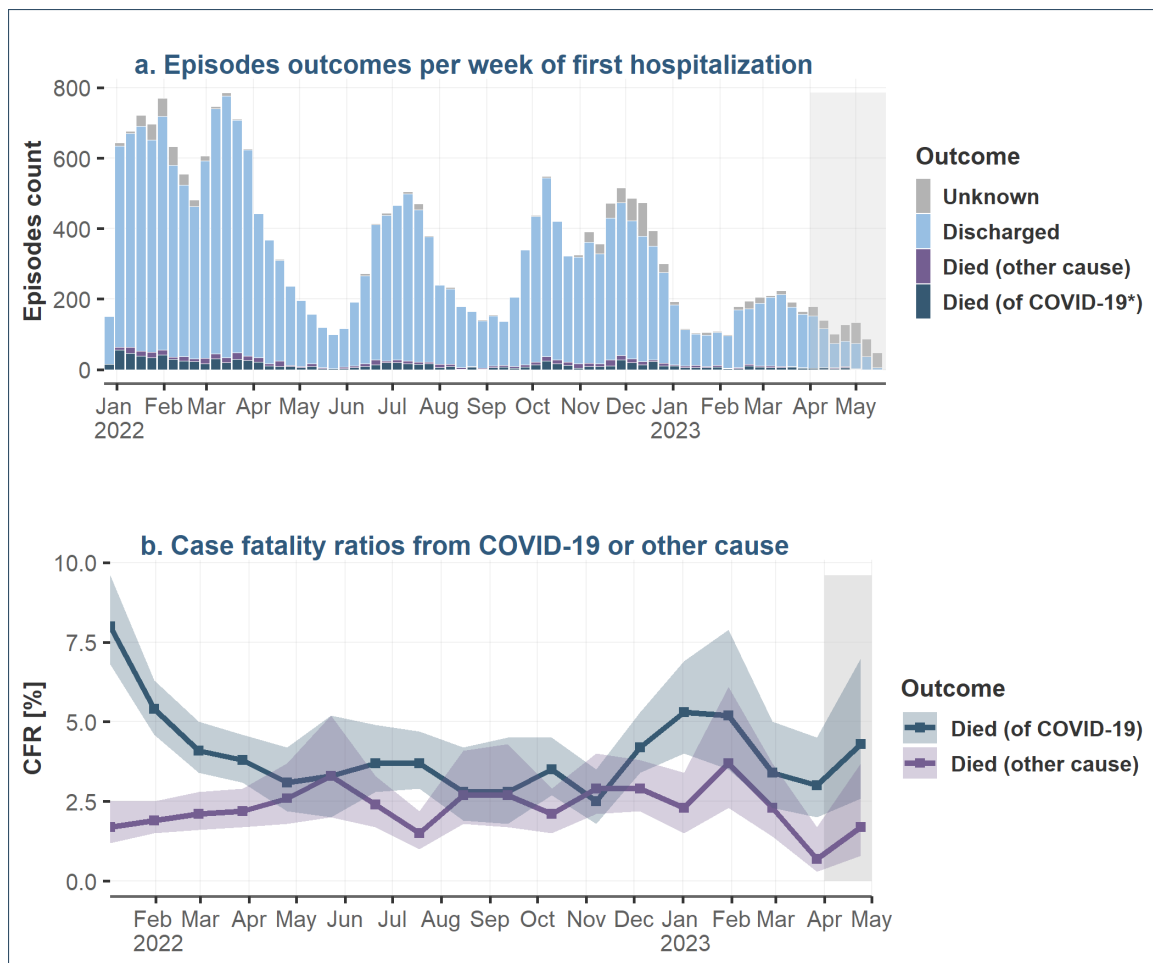


**Figure 6:** Episodes by vaccination status over time and by age group. For episodes with multiple hospitalizations, the vaccination status for the first hospitalization was considered. Episodes with first admission date after March 31, 2023 were excluded due to data completeness considerations. For 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 May 22, 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.

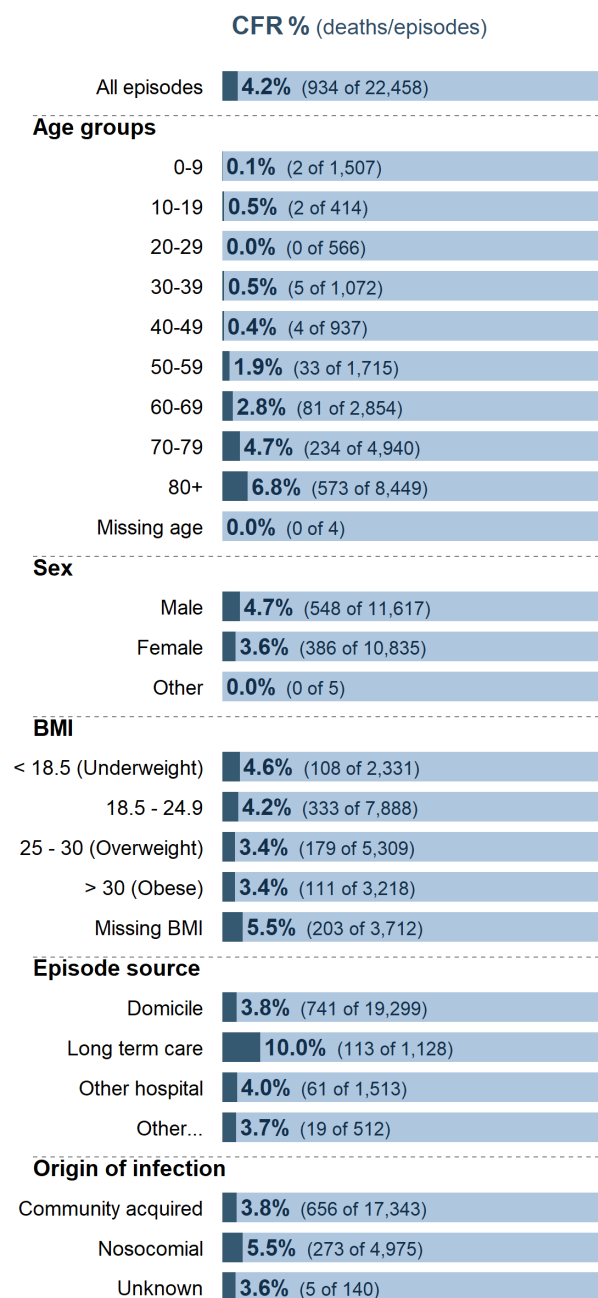
## 3.2. Case fatality rate (CFR) across demographic and risk groups

Since January 2022 until March 2023, the case fatality rate (CFR) increased with increasing age, from 0.1% (2 of 1,507) in episodes of patients aged 0-9, to 1.9% (33 of 1,715) in episodes of patients aged 50-59, and to 6.8% (573 of 8,449) in episodes of patients aged 80+. CFR% was greater in men than in women: 4.7% (548 of 11,617) vs 3.6% (386 of 10,835) respectively. (Figure 8a)

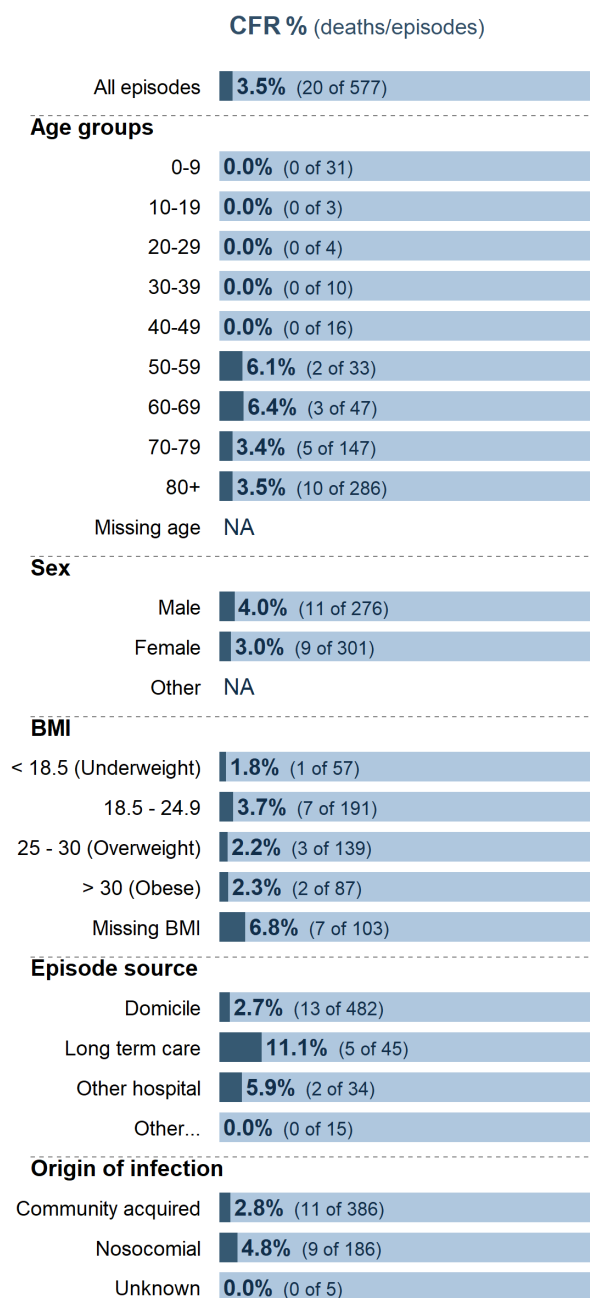
The overall CFR% of the most recent period for which enough data is available (months April 2023 and May 2023, Figure 8b) was 3.5% compared to 4.2% from January 2022 until March 2023.

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

**a. CFR % : 22,458 episodes with first hospitalization between January 2022 and March 2023**



**b. CFR % : 577 episodes with first hospitalization between April 2023 and May 2023**

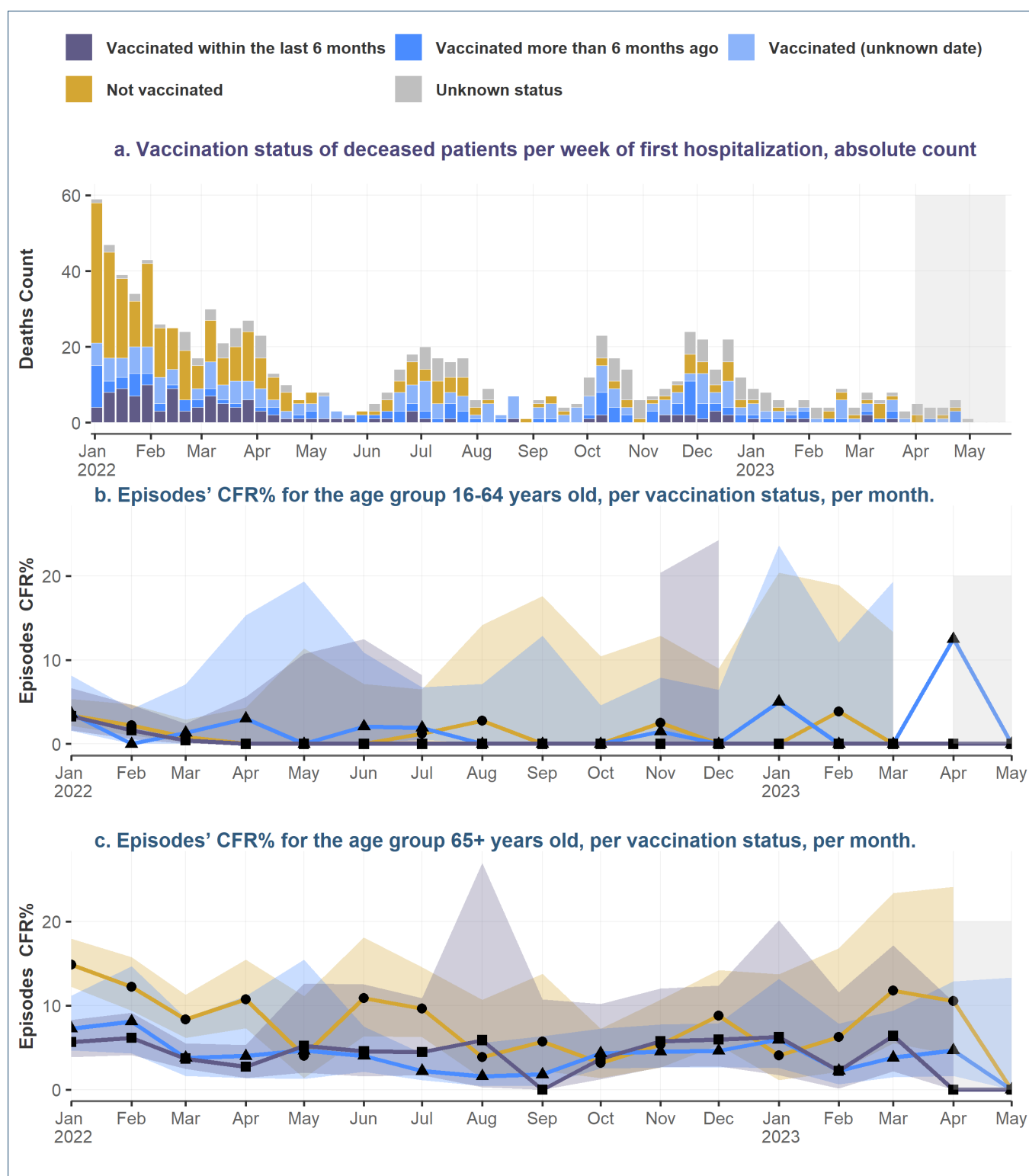


**Figure 8:** Case fatality rate (CFR) % among demographic and risk groups: percentage of hospitalization episodes, which ended in the death of the patient of COVID-19 in hospital. Records with incomplete data (ongoing hospitalization episodes or with a pending outcome in the database) were not included.

### 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 month 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

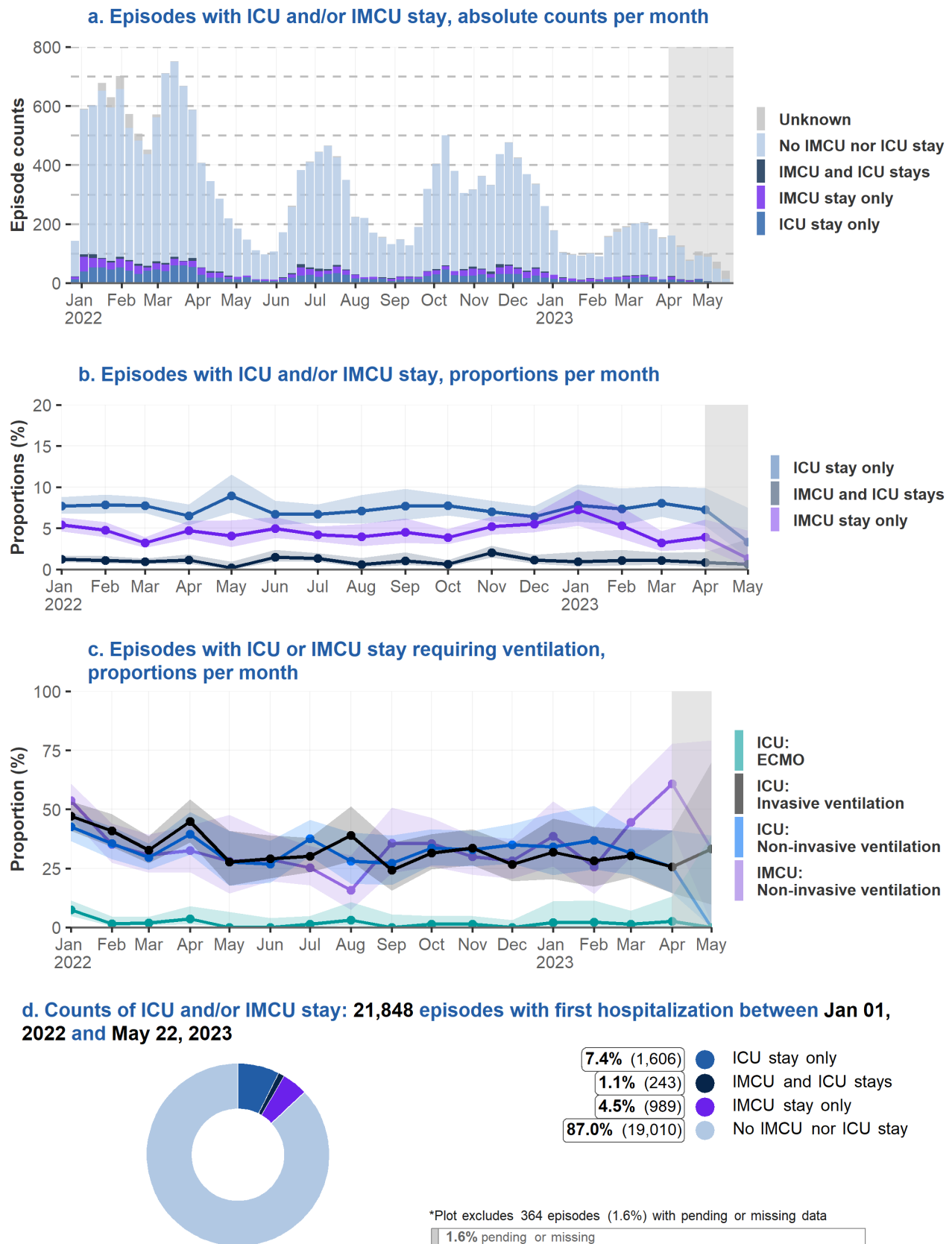
### 4.1. ICU, IMCU admission and use of ventilation over time

**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 1,606 (7.2%) episodes required ICU admission, 989 (4.5%) episodes required IMCU admission and 243 (1.1%) episodes required both ICU and IMCU admission. For 19,010 episodes no ICU nor IMCU admission was required. It is unknown if ICU, IMCU admissions or both was required for 364 episodes.

Figure **10c** only includes episodes with known information on ICU and IMCU stay requiring ventilation. From January 01, 2022 to May 22, 2023 a total of 429 (34.8%) episodes with an IMCU stay required non-invasive ventilation. For 413 episodes with IMCU stay, it is unknown if non-invasive ventilation was required. Among episodes with ICU admissions, a total of 42 (2.3%) episodes required ECMO ventilation, 642 (34.7%) episodes required invasive ventilation, and 627 (33.9%) episodes required non-invasive ventilation. For 427 episodes with ICU stay, it is unknown if any ventilation was required.

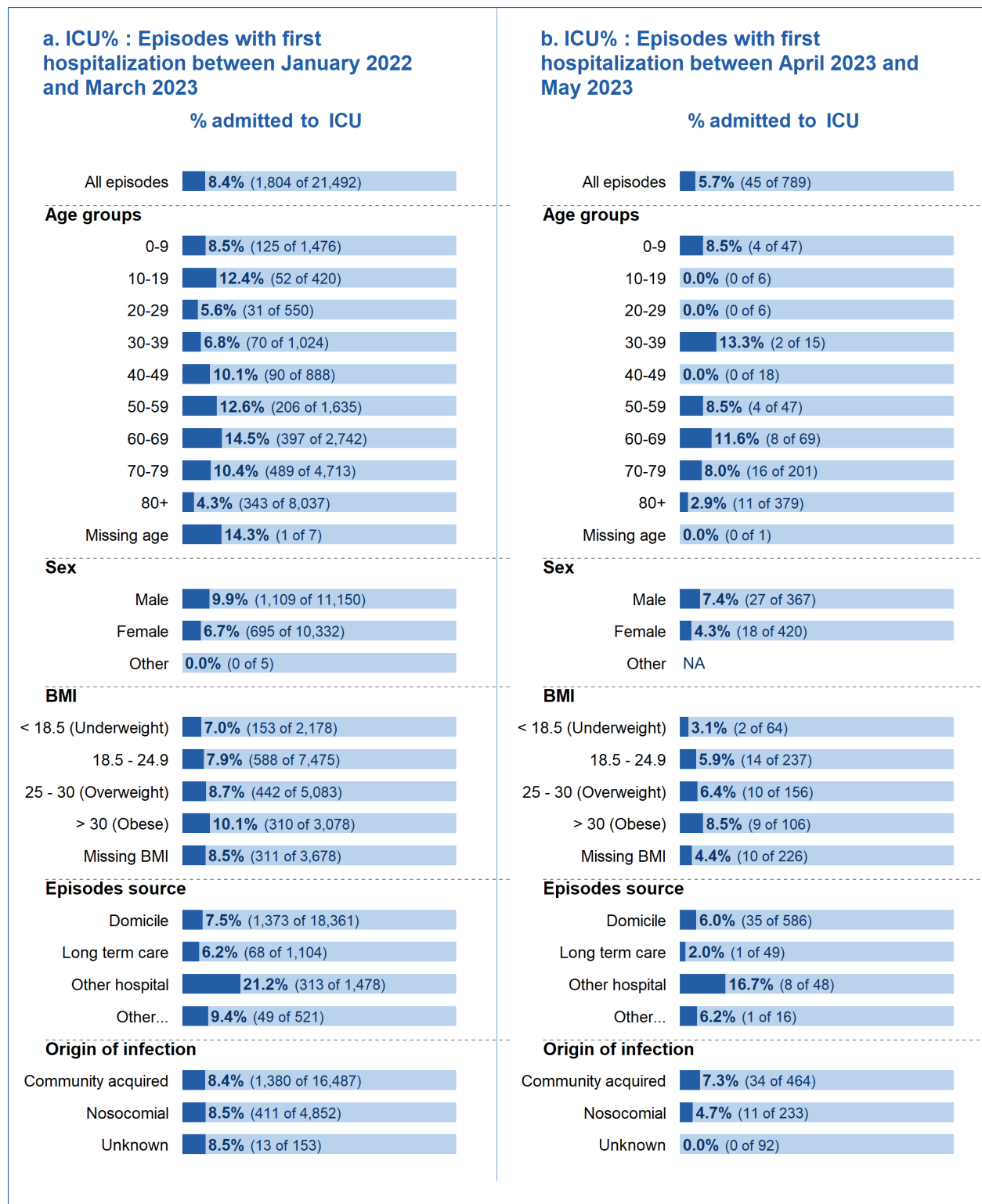


**Figure 10:** Counts and proportion of episodes with at least one ICU or IMCU admission over time. Evolution over time of the use of invasive, non-invasive and ECMO for ICU or IMCU admissions. Data from the last two months (highlighted gray) are considered provisional due to data entry delays.



## 4.2. ICU admission across demographic and risk groups

From January 2022 to March 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 14.5% (397 of 2,742) 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 4.3% (343 of 8,037) 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 6.7% of the episodes concerning females. Episodes of patients transferred from other hospitals had a high probability of ICU admission: 21.2% of such episodes (313 of 1,478) required at least one ICU admission, compared to an overall admission rate of 8.4% (Figure 11a).



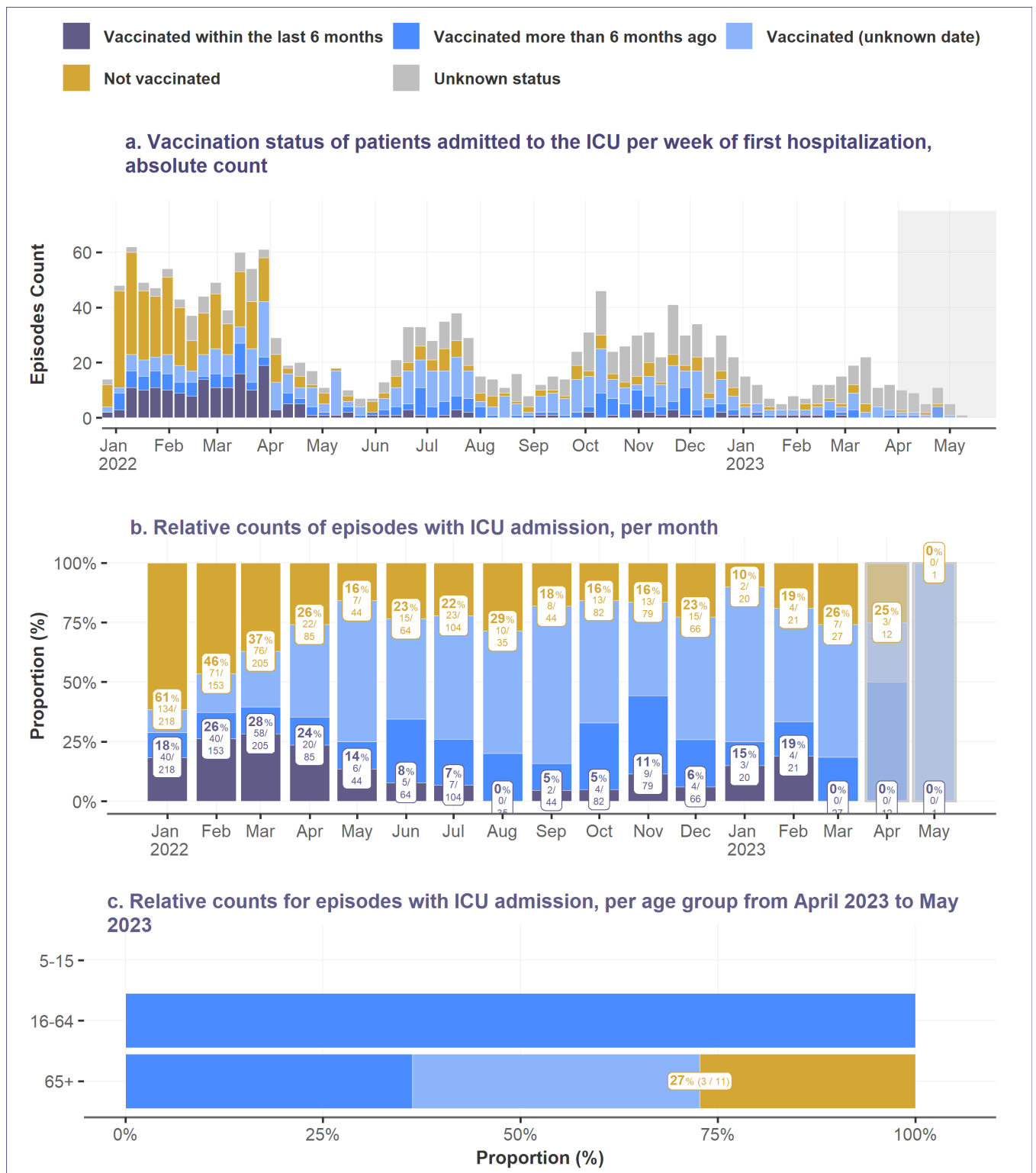
**Figure 11:** Percentage of hospitalization episodes with at least one ICU admission, grouped by demographic and risk factors, over two time intervals. For episodes with multiple hospitalizations, we considered whether they were admitted to the ICU during any of their hospitalizations. Records with 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 2022 to April 2022 from 61.5% to 25.9% and has fluctuated since then. (Figure **12b**)

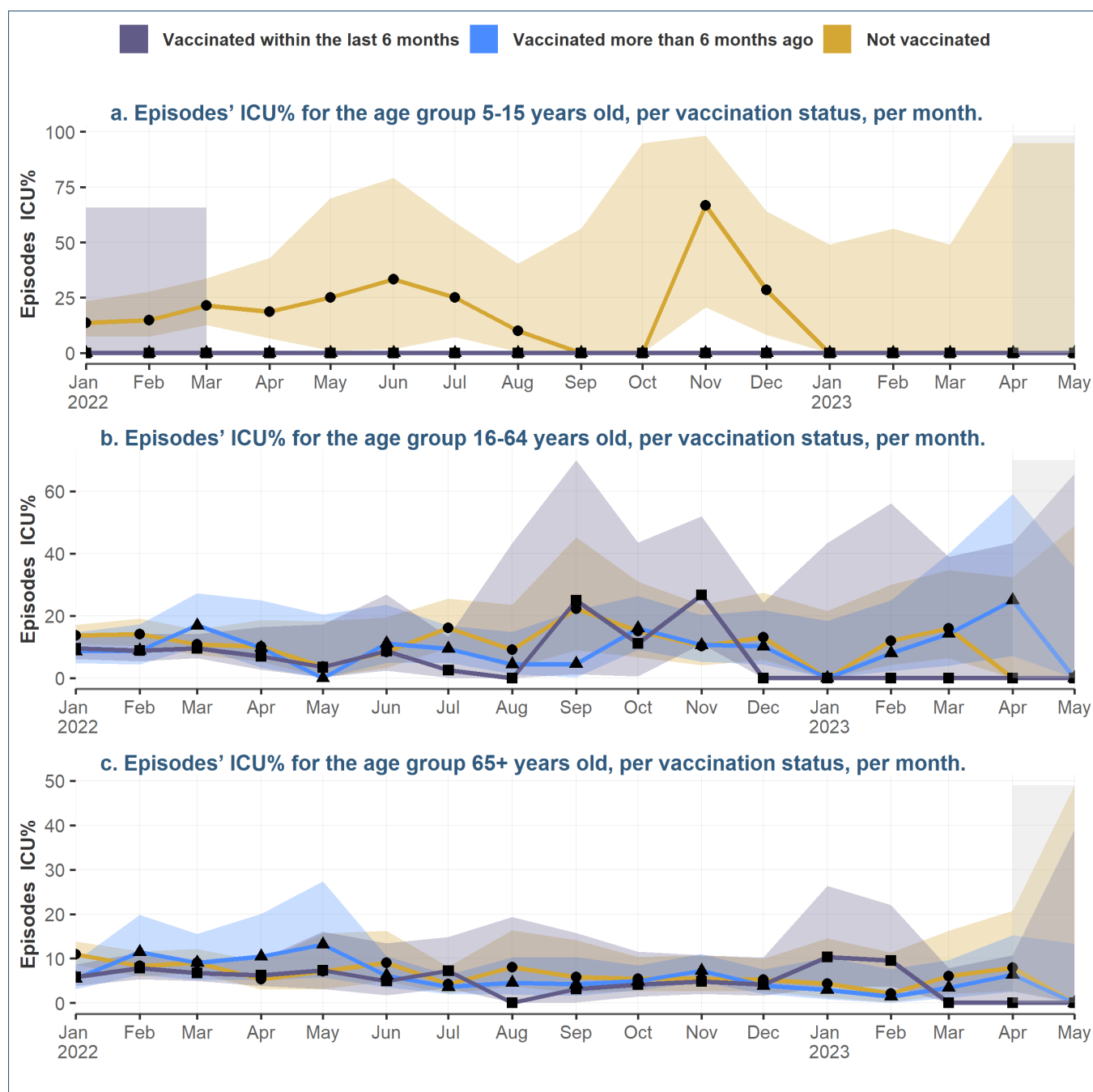
The relative counts for the age groups of 5-15 must be interpreted with caution due to the small number of cases. During the period of April 2023 to May 2023, 0 episodes were recorded for this age group (Figure **12c**).



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



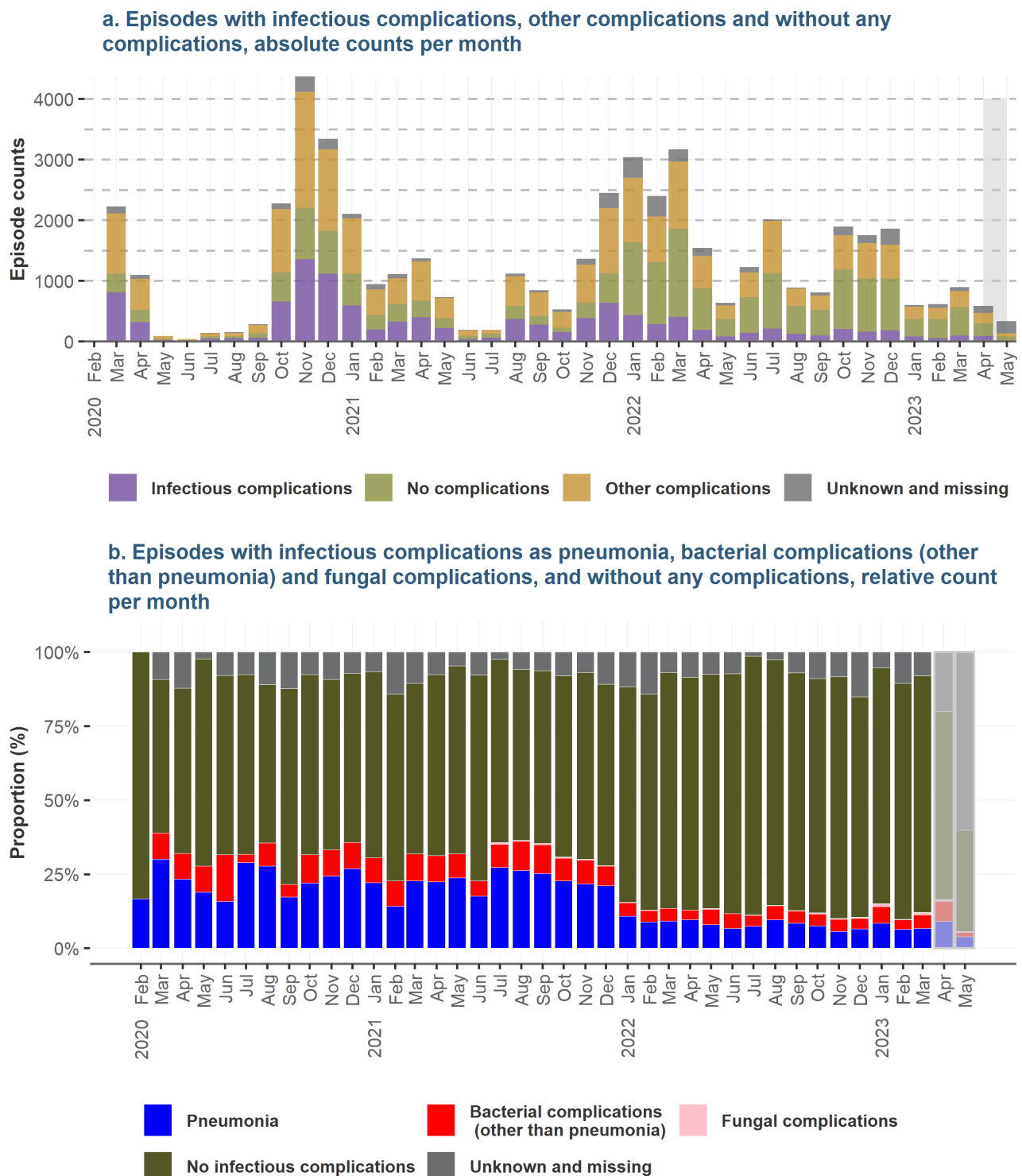
**Figure 13:** ICU admission rate (ICU%) by age and by vaccination status over time: percentage of episodes, which resulted in ICU admission. Records with incomplete data were not included. Data from the two last months (highlighted in gray) are considered provisional due to data entry delays. The coloured 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. Infectious complications

This chapter describes the occurrence of infectious complications among CH-SUR episodes since the beginning of the pandemic on February 24, 2020. Infectious complications detailed in this section consist of pneumonia, bacterial infections (other than pneumonia) and fungal infections related to the COVID-19 episode. Pneumonia comprises pneumonia from multiple etiologies including bacterial or viral pneumonia (including COVID-19 pneumonia) and is collected as a separate variable from other infectious complications. For the purpose of this chapter, the variable comprising COVID-19 pneumonia (PN3 pneumonia) was excluded from infectious complications (see [pneumonia classification](#) used in CH-SUR for further information).

Figure **14a** displays the absolute count of COVID-19 episodes from February 24, 2020 to May 22, 2023 stratified by type of complications over the time.

Figure **14b** shows the proportion of COVID-19 episodes, stratified by the type of complications and in particular the type of infectious complications (pneumonia, bacterial complications (other than pneumonia) and fungal complications).



**Figure 14:** Monthly count and rate of COVID-19 episodes according to complications. This visual representation highlights the total count of COVID-19 episodes categorized by the type of complications over time. The rate of episodes with infectious complications, such as pneumonia, bacterial complications (other than pneumonia), and fungal complications are also showcased. It is important to note that “No infectious complications” includes episodes without any complications, episodes with COVID-19 pneumonia, as well as episodes with at least one non-infectious complication.

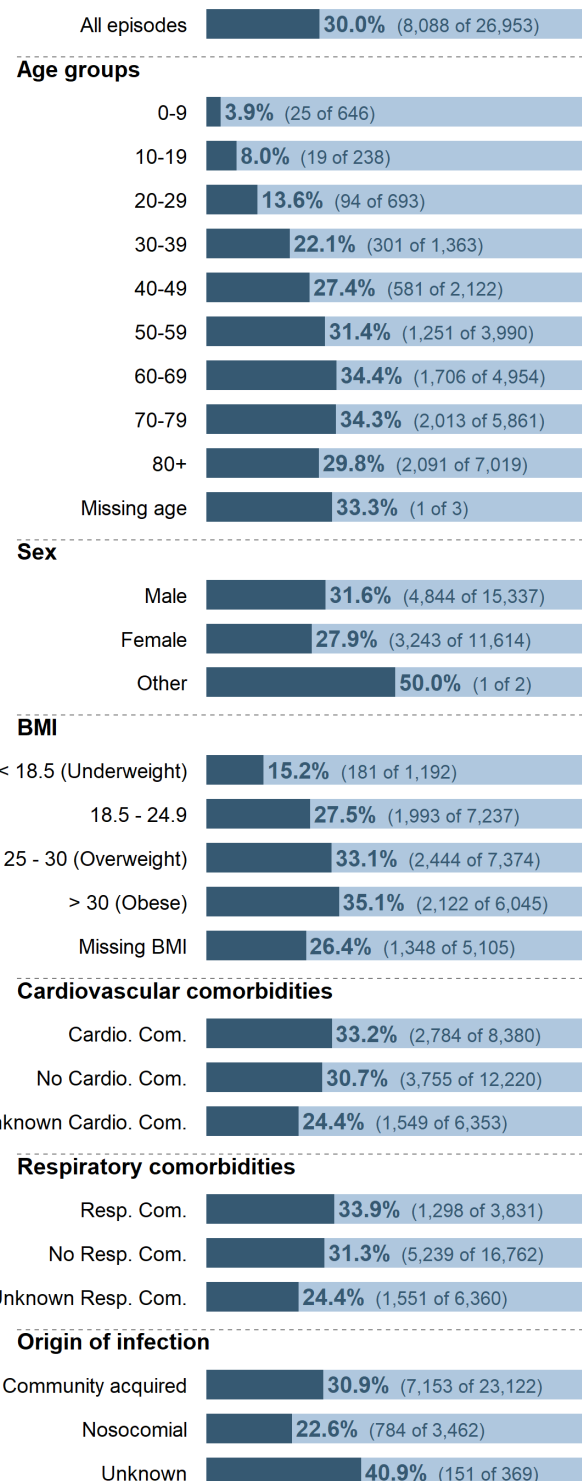
Figure 15 displays the proportion of infectious complications (pneumonia, bacterial complications (other than pneumonia) and fungal complications) across different demographic and risk groups. 4756 episodes were excluded from the analysis in Figure 15, due to unknown or missing information whether the episode involved infectious complications. It should be noted that the proportion of infectious complications has markedly decreased across all groups since January 2022, in comparison to the previous period. In the period from February 24, 2020 to December 31, 2021 infectious complications were reported for 30.0% (8,088 out of 26,953) of CH-SUR episodes with known information on complications compared to 11.9% (2,809 out of 23,640) in the period from January 01, 2022 to May 22, 2023.

A higher proportion of episodes with infectious complications was observed among patients with cardiovascular co-morbidities, with a proportion of 33.2% (2,784 out of 8,380) from February 24, 2020 to December 31, 2021 and a proportion of 15.1% (1,282 out of 8,464) from January 01, 2022 to May 22, 2023.

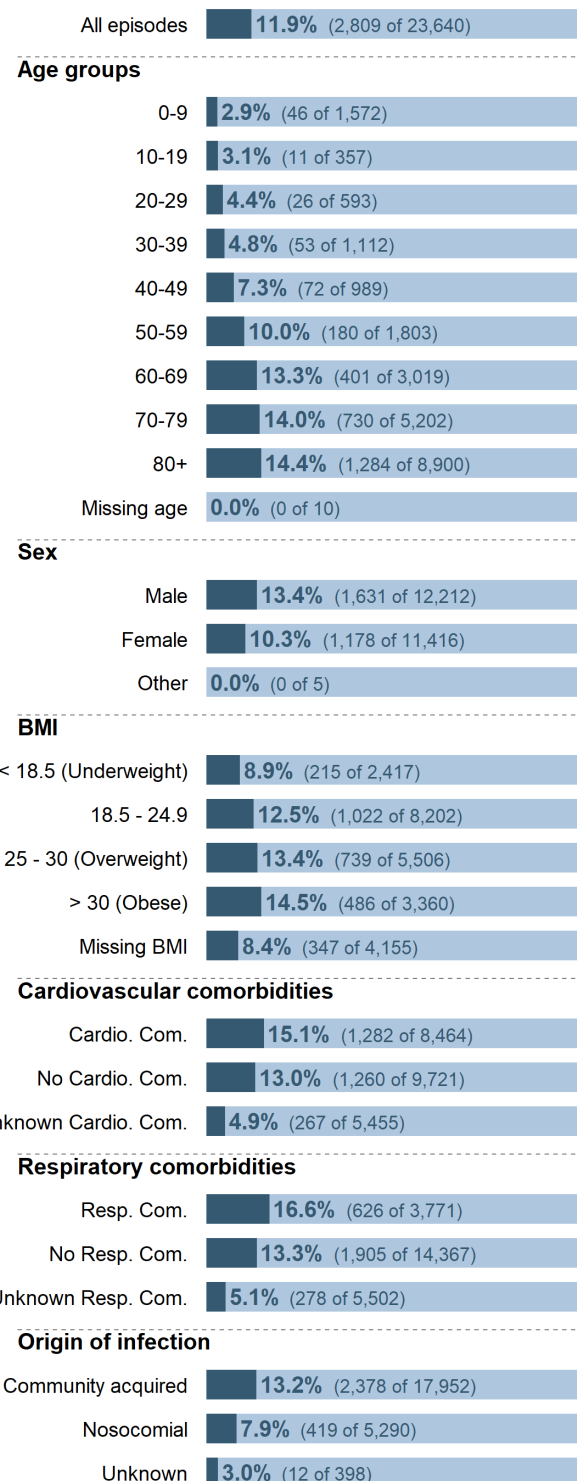
A higher proportion of episodes with infectious complications was also observed among patients with respiratory co-morbidities, with a proportion of 33.9% (1,298 out of 3,831) from February 24, 2020 to December 31, 2021 and a proportion of 16.6% (626 out of 3,771) from January 01, 2022 to May 22, 2023.



### a. INFECTIOUS COMPLICATIONS : 26,953 episodes with first hospitalization between February 2020 and December 2021



### b. INFECTIOUS COMPLICATIONS : 23,640 episodes with first hospitalization between January 2022 and April 2023



**Figure 15:** Proportion of episodes with first hospitalization with documented infectious complications, according to demographic and risk groups. 4756 episodes were excluded from the analysis due to unknown or missing information whether the episode involved infectious complications.

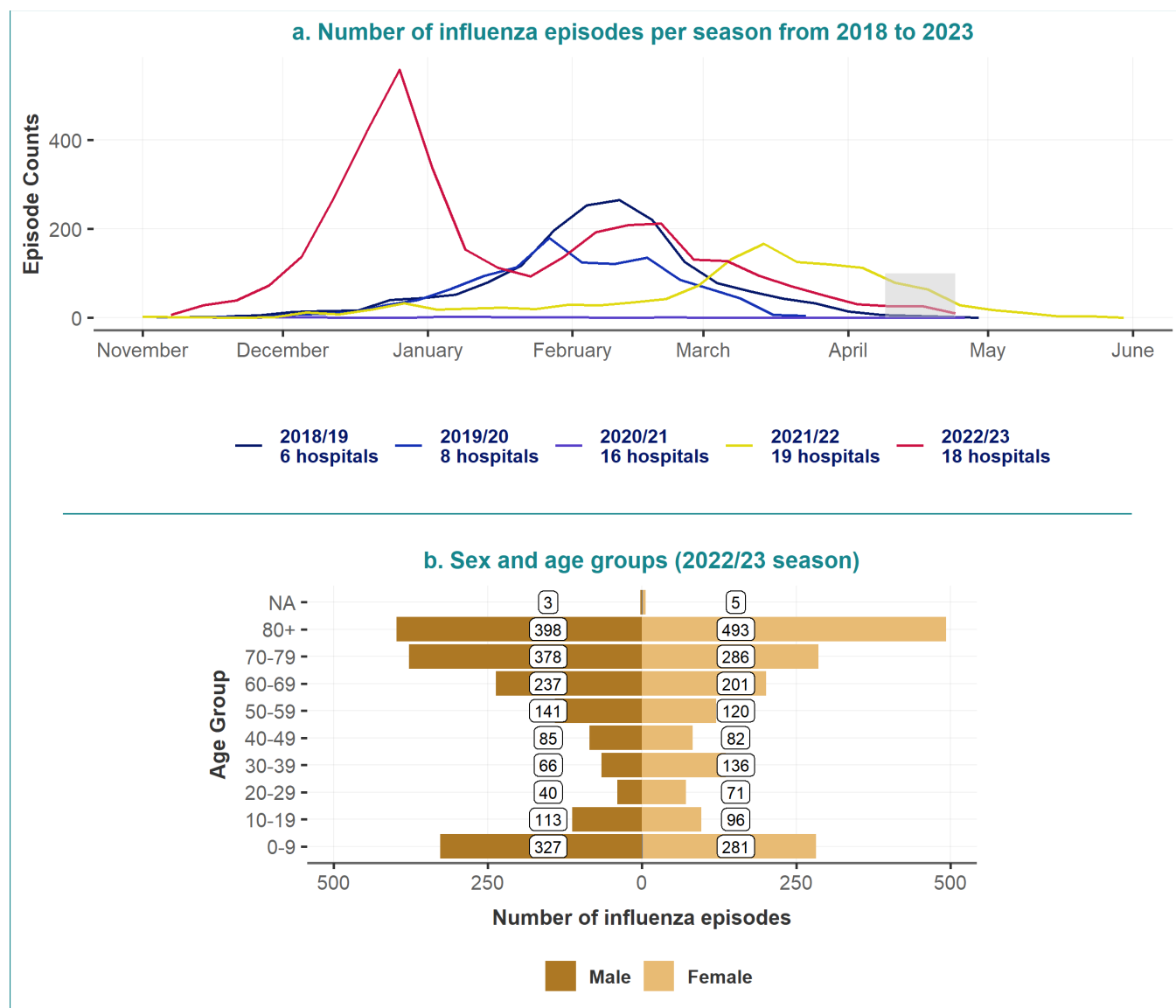
## 6. Influenza

**Data status: May 22, 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.



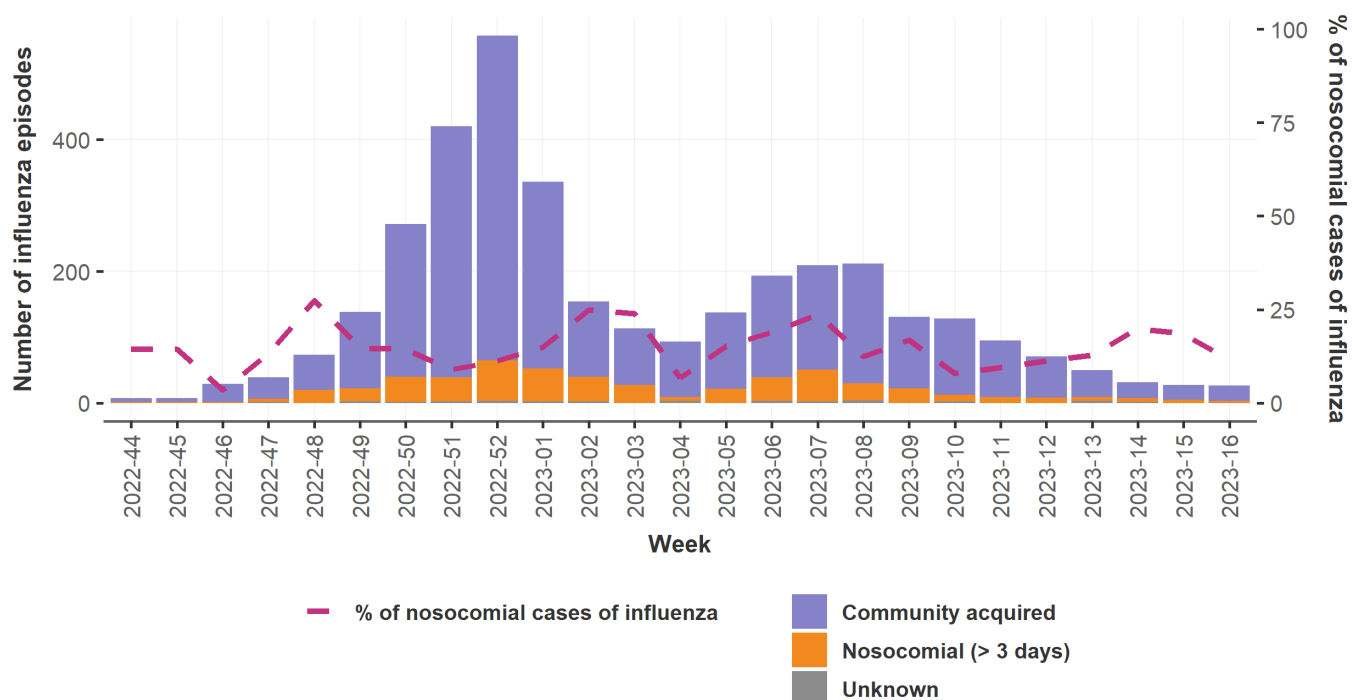
**Figure 16:** Number of episodes per influenza seasons, with the age and sex demographic characteristics of the ongoing season. Data from the last two weeks of influenza season (highlighted gray) is considered provisional due to entry delays.

## 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.

- From week 2022-44 to week 2023-16, we registered a total of 3561 influenza episodes including 512 (14%) nosocomial infections among CH-SUR hospitals. For 31 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 2945 (83%) episodes, and influenza type B virus in 611 (17%) episodes. Influenza type was unknown for 5 episodes.
- Information regarding the patient's vaccination status is available for 994 out of the 3561 influenza episodes (2567 unknowns). Among those, 835 (84%) influenza episodes occurred among non-vaccinated patients.
- A total of 253 (7%) influenza episodes concerned patients admitted to intermediate care (56 unknowns). Among those, 96 (38%) required non-invasive ventilation.
- A total of 382 (11%) influenza episodes concerned patients admitted to ICU (60 unknowns). Among those, 168 (44%) required non-invasive ventilation, 146 (38%) required invasive ventilation and 17 (4%) required ECMO.
- A total of 81 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. Glossary and supplemental information

**Hospitals participating to data collection / Ospedali che partecipano alla raccolta dei dati :** Per consultare l'elenco degli ospedali svizzeri che partecipano attualmente al sistema CH-SUR, si prega di visitare il sito internet al seguente indirizzo: [Hospital-based surveillance of COVID-19 in Switzerland website](#).

### **Criteri di inclusione / Inclusion Criteria**

CH-SUR raccoglie dati di pazienti ospedalizzati con infezione da SARS-CoV-2 documentata e una degenza di durata superiore alle 24 ore. La conferma dell'infezione è data dal risultato positivo di un test PCR (reazione a catena della polimerasi) o di un test antigenico rapido, nonché da un referto clinico di COVID-19. Le infezioni **nosocomiali** da SARS-CoV-2 sono anch'esse rilevate nella banca dati e descritte in una sezione speciale in calce al presente rapporto.

### **Ospedalizzazione / Hospitalization:**

Si tratta della più breve unità di analisi dei dati e corrisponde al tempo intercorso tra ricovero e dimissioni da un qualsiasi ospedale partecipante a CH-SUR. L'intervallo deve avere durata superiore alle 24 ore per essere considerato un'ospedalizzazione. È rilevata una nuova ospedalizzazione ogni qualvolta la persona è ricoverata in ospedale. Considerati i frequenti nuovi ricoveri durante il decorso di un'unica malattia (singola infezione), il rapporto basa le proprie analisi sul numero di episodi e non sul numero di ospedalizzazioni.

### **Episodio / Episode:**

È assegnato un numero di episodio a ogni nuovo ricovero in ospedale che ha una durata di almeno 24 ore avvenuto ad almeno 30 giorni di distanza da una precedente ospedalizzazione. Che il paziente sia ricoverato una sola volta o più volte nel corso di 30 giorni, in entrambi i casi è rilevato un solo episodio. Due ospedalizzazioni separate dello stesso paziente che si verificano a distanza di oltre 30 giorni determinano l'assegnazione di due diversi numeri di episodio. Se un paziente è trasferito da un ospedale a un altro (entrambi partecipanti a CH-SUR) entro un periodo di 30 giorni dalle ultime dimissioni, le due ospedalizzazioni contano come un episodio. Un episodio può pertanto comprendere numerose ospedalizzazioni, ciascuna delle quali può richiedere più ricoveri in unità di terapia intensiva.

### **Motivo dell'ospedalizzazione / Reason for the hospitalization:**

- *Ospedalizzazione causata da COVID-19 / Hospitalization because of COVID-19:* sulla base delle informazioni disponibili al momento del ricovero, il paziente è ospedalizzato perché presenta sintomi di COVID-19 o soffre dello scompenso di una patologia cronica evidentemente causato dalla COVID-19.
- *Ospedalizzazione con infezione da SARS-CoV-2 / Hospitalization with a SARS-CoV-2 infection:* sulla base delle informazioni disponibili al momento del ricovero, il paziente è risultato positivo a un test per il SARS-CoV-2 ma viene ricoverato senza sintomi di COVID-19 per un problema che non ha a che vedere con la COVID-19. In altre parole, il problema predominante è una malattia diversa dalla COVID-19 o un infortunio.

### **Origine dell'infezione / Origin of the infection:**

- *Infezione acquisita in comunità / Community acquired infection:* l'infezione da SARS-CoV-2 è stata rilevata prima del ricovero in ospedale o entro i primi 5 giorni dal ricovero.
- *Infezione nosocomiale / Nosocomial infection:* l'episodio è registrato come «nosocomiale» se l'infezione da SARS-CoV-2 è rilevata 5 o più giorni dopo il ricovero in ospedale.

**Unità di terapia intermedia / Intermediate care unit (intermediate care or IMCU):** Unità di terapia che si prende cura di pazienti con insufficienza di una funzione vitale o il cui onere di cura non consente il ritorno a un'unità di ospedalizzazione. Queste unità costituiscono l'anello di collegamento tra le unità di terapia intensiva e i posti letto normali.

**Unità di terapia intensiva (UTI) / Intensive care unit (ICU):** Unità che si fa carico dei pazienti con un'insufficienza grave di una o più funzioni vitali o che sono a rischio di sviluppare complicazioni gravi.

**Stato vaccinale / Vaccination status:**

La definizione dello stato vaccinale si basa sulla dose di vaccino più recente eventualmente ricevuta dal paziente e comprende le seguenti categorie:

- a) *Vaccinati negli ultimi sei mesi:* pazienti che hanno ricevuto l'ultima dose di vaccino meno di sei mesi prima del risultato positivo del test SARS-CoV-2.
- b) *Vaccinati da più di sei mesi:* pazienti che hanno ricevuto l'ultima dose di vaccino più di sei mesi prima del risultato positivo del test SARS-CoV-2.
- c) *Vaccinati (data sconosciuta):* pazienti che hanno ricevuto almeno una dose di un vaccino **approvato dall'OMS** prima del test positivo, ma per i quali mancano informazioni sulla data di somministrazione dell'ultima dose.
- d) *Non vaccinati:* pazienti che non hanno ricevuto nemmeno una dose di un vaccino **approvato dall'OMS** al momento del test SARS-CoV-2 positivo.
- e) *Stato sconosciuto:* pazienti per i quali non erano disponibili informazioni sulla vaccinazione.

**Note importanti: popolazioni speciali.** I bambini sotto i cinque anni non sono compresi in nessuna analisi specifica per età, poiché per loro non è raccomandata la somministrazione di alcuna dose di vaccino.

**Dimissioni / Discharge:** Quando il paziente lascia l'ospedale da vivo, la sua partenza è categorizzata come dimissioni se il paziente:

1. rientra al proprio domicilio;
2. è ricoverato in una struttura di lungodegenza;
3. è ricoverato in un altro ospedale;
4. è ricoverato in un'altra struttura che non partecipa alla sorveglianza CH-SUR;
5. è ricoverato in una struttura di riabilitazione;
6. si reca presso una destinazione sconosciuta.

**Motivo del decesso / Reason of death:** I pazienti per i quali la COVID-19 è stata la causa di morte (decesso per COVID-19) sono indicati separatamente dai pazienti di COVID-19 morti per altre cause (decesso con COVID-19 ma non per COVID-19). Per ogni struttura partecipante a CH-SUR è un medico a livello di ospedale ad accertare se un paziente COVID-19 è morto per COVID-19 o per un'altra causa. In presenza di una diagnosi di COVID-19 (conformemente ai criteri di inclusione di CH-SUR), i casi in cui la causa del decesso è incerta sono considerati decessi per COVID-19 effettivi o sospetti.

**Gestione dei dati mancanti / Dealing with missing data:** Se indicato nel testo, i dati mancanti sono esclusi dall'analisi. In caso contrario, le voci con dati mancanti sono incluse nei totali e analizzate di conseguenza. Questo potrebbe comportare che i denominatori di diverse categorie analizzate non diano, se addizionati, lo stesso totale. Ove indicato, i dati degli ultimi due mesi sono considerati provvisori a causa di ritardi nell'immissione dei dati ed evidenziati in grigio in alcuni grafici.

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