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COVID-19 and Influenza Hospital Based Surveillance CH-SUR
Federal Department of Home Affairs FDHA
Federal Office of Public Health FOPH
University of Geneva Institute of Global Health UNIGE (IGH)
Geneva University Hospitals (HUG)

Hospital Based Sentinel Surveillance of COVID-19 and Influenza
Week 2024-16 Report

Data status: April 30, 2024

About the Hospital Based Sentinel Surveillance System:

Since November 2018, hospitalisations of patients infected with influenza have been recorded in the Hospital Based Sentinel Surveillance System. In 2020, the system was expanded to capture COVID-19 hospitalisations and extended to include a broad network of hospitals. The aim of the system is to obtain detailed clinical and epidemiological information on the burden of disease of COVID-19 and influenza, the clinical course such as intensive care unit (ICU) stays, outcomes, risk factors and treatments. There are currently 6 hospitals participating in the Hospital Based Surveillance System. The Federal Office of Public Health (FOPH), the Institute of Global Health (IGH) of the University of Geneva and the Infection Control Program of the Geneva University Hospitals (HUG) jointly coordinate the surveillance system. This project is financed by the FOPH.

Important notes:

- The scope of the Hospital Based Sentinel Surveillance System has been adapted to the endemic phase. Since 1 December 2023, the number of reporting hospitals has been reduced to six. From now on, the weekly report will show the data from these six hospitals.
- Data collection on influenza hospitalisations is seasonal and lasts from week 40 to week 20. Data on COVID-19 hospitalisations is collected year-round.
- When the number of patients and events are low, all epidemiological and clinical data included in this report are to be interpreted with caution. Due to reporting delays, additional registrations of hospitalisations are expected for the most recent weeks.
- A list of essential definitions is provided at the end of the document.

1. New COVID-19 and influenza hospitalisations during the week 2024-16
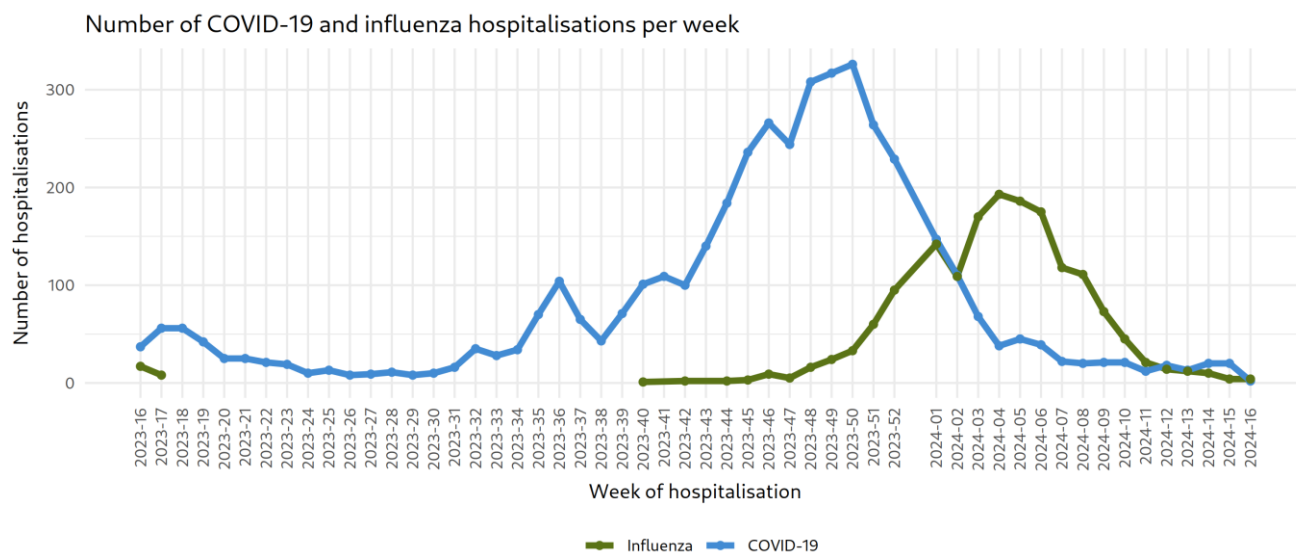

Figure 1: Number of COVID-19 and Influenza hospitalisations per week.

- For the reporting week, a total of 6 hospitalisations were recorded in the Hospital Based Sentinel System. Of these, 2 were COVID-19 hospitalisations (33.3%) and 4 influenza hospitalisations (66.7%). The number of COVID-19 hospitalisations decreased by 90% compared to the previous week (20 hospitalisations). The number of influenza hospitalisations decreased by 0% compared to the previous week (4 hospitalisations) (figure 1). The number of hospitalisations for the most recent weeks may be underestimated due to reporting delays.

- Nosocomial infections represented 100% of COVID-19 hospitalisations (1 of 1, 1 unknown) and 0% of influenza hospitalisations (0 of 4, 0 unknown) (figure 2).

- For COVID-19, 0 (%) concerned patients aged 65 years and older, and 0 (0%) concerned children under the age of 15. Age was unknown for 1 COVID-19 hospitalisation. For influenza, 1 (25%) hospitalisation concerned patients aged 65 years and older, and 1 (25%) concerned children under the age of 15. Age was unknown for 0 influenza hospitalisations.

- Among patients aged 65 years and older, 0% of COVID-19 hospitalisations concerned patients who had received a vaccine dose within the last 6 months (0 of 0 with known vaccination status, 0 unknown). Among the same age group, 0% of influenza hospitalisations concerned patients who had received a vaccine dose for the current influenza season (0 of 0 with known vaccination status, 1 unknown).

- Influenza type A virus was detected in 2 (50%) hospitalisations, and influenza type B virus in 2 (50%) hospitalisations (0 unknown) (figure 3).
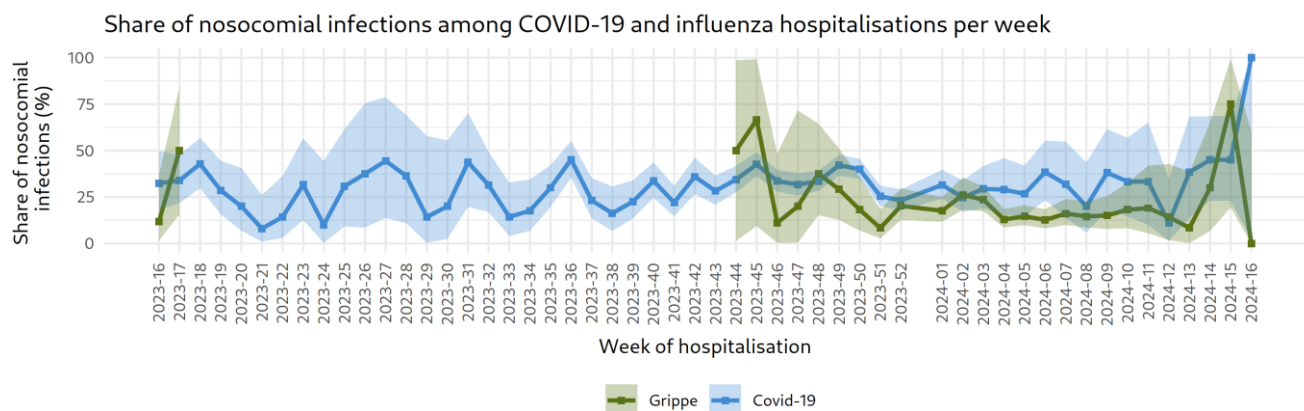
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Share of nosocomial infections among COVID-19 and influenza hospitalisations per week

Figure 2: Share of nosocomial infections among COVID-19 and influenza hospitalisations per week (percentage and 95% confidence interval).
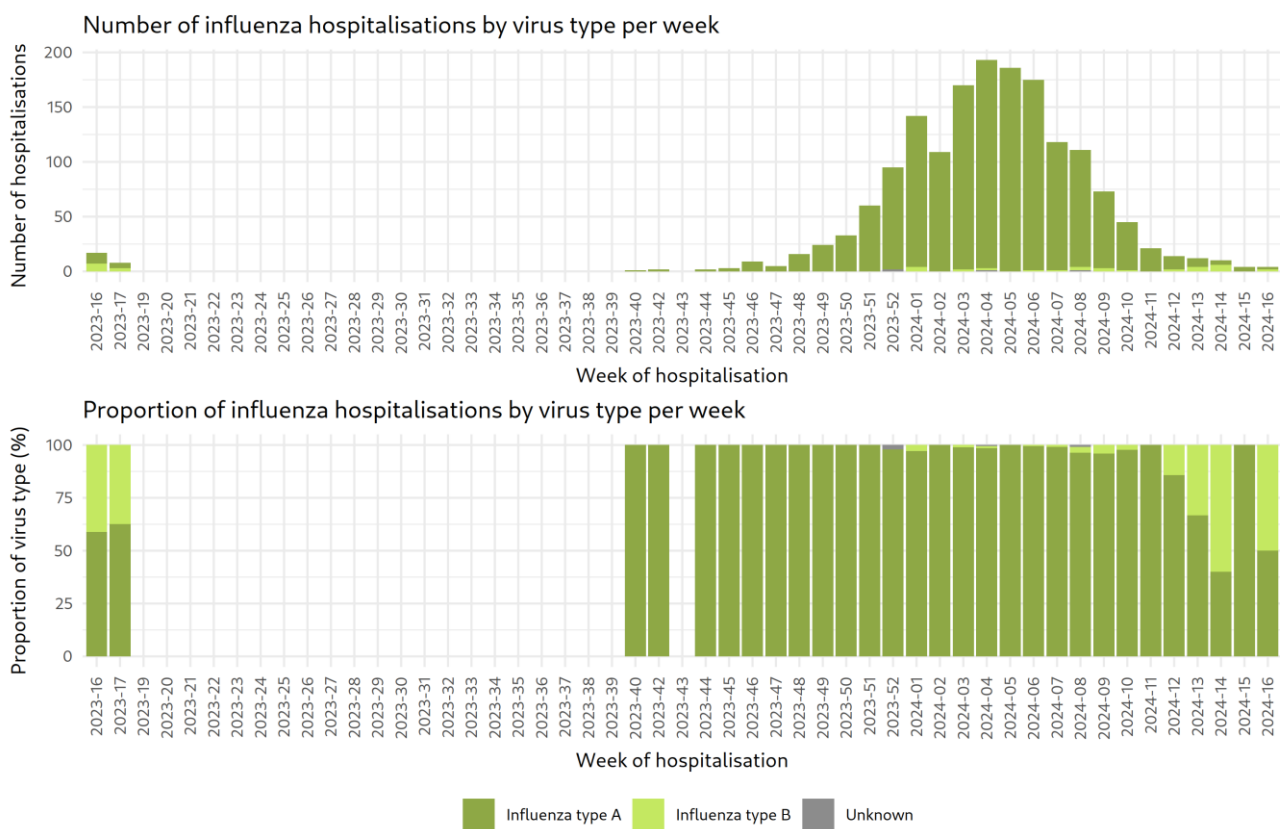
Number of influenza hospitalisations by virus type per week

Proportion of influenza hospitalisations by virus type per week

Figure 3: Absolute number and proportion of influenza hospitalisations per week according to virus type.

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2. Summary of cumulative hospitalisations since week 2023-40

This section provides a summary of the data on hospitalisations, clinical course and outcome since the start of the current reporting period in week 2023-40. Each week, data of the new reporting week is added to the summary. Data on COVID-19 hospitalisations are published in this chapter from week 2023-44 onwards. Data on Influenza hospitalisations are published from week 2024-02 onwards.

2.1. Hospitalisations related to COVID-19 and influenza

- From week 2023-40 to week 2024-16, a total of 3440 COVID-19 hospitalisations and 1637 influenza hospitalisations were recorded.

- Nosocomial infections represented 33.1% of COVID-19 hospitalisations (1135 of 3428, 12 unknown) and 17.3% of influenza hospitalisations (282 of 1630, 7 unknown).

- For COVID-19, 2649 (78.5%) hospitalisations concerned patients aged 65 years and older, and 63 (1.9%) hospitalisations concerned children under the age of 15. Age was unknown for 67 COVID-19 hospitalisations. For influenza, 992 (60.6%) hospitalisations concerned patients aged 65 years and older, and 123 (7.5%) concerned children under the age of 15. Age was unknown for 0 influenza hospitalisations.

- Among patients aged 65 years and over, 5.7% of COVID-19 hospitalisations concerned patients who had received a vaccine dose within the last 6 months (84 of 1461 with known vaccination status, 1188 unknown). Among the same age group, 28.3% of influenza hospitalisations concerned patients who had received a vaccine dose for the current influenza season (52 of 184 with known vaccination status, 808 unknown).

- Influenza type A virus was detected in 1602 (98.1%) hospitalisations and influenza type B virus in 31 (1.9%) hospitalisations (4 unknown) (figure 3).

2.2. Clinical course and outcome of hospitalisations related to COVID-19 and influenza

The assessment of the clinical course and outcomes is only possible with a delay of several weeks, once a hospitalisation has been completed. Therefore, data in this section need to be interpreted with caution, especially at the beginning of the season.

- From week 2023-40 to week 2024-16, a stay in intermediate care unit (IMCU) was documented for 5.2% of COVID-19 hospitalisations (177 of 3412, 28) unknown and for 7.2% of influenza hospitalisations (118 of 1630, 7 unknown). A stay in the intensive care unit (ICU) was documented for 8.1% of COVID-19 hospitalisations (275 of 3413, 27 unknown) and for 12% of influenza hospitalisations (195 of 1655, 7 unknown).

- Among hospitalisations with ICU and/or IMCU stay, ventilation was documented for 54.1% of COVID-19 hospitalisations (231 of 428, 1 unknown), and for 65.7% of influenza hospitalisations (186 of 284, 1 unknown).

- The proportion of hospitalised patients who died with COVID-19 was 7% (239 of 3393, 47 with unknown outcome) and 4.2% died with influenza (68 of 1617, 20 with unknown outcome). Of all deaths occurring in COVID-19 hospitalisations, 48.1% (115) were reported as causally related to COVID-19, 42.7% (102) as related to another cause, and for 9.2% (22) of deaths the cause was undetermined. Of all death occurring in influenza hospitalisations, 64.7% (44) were reported as causally related to influenza, 0.8% (13) as related to another cause, and for 0.6% (10) of deaths the cause was undetermined.

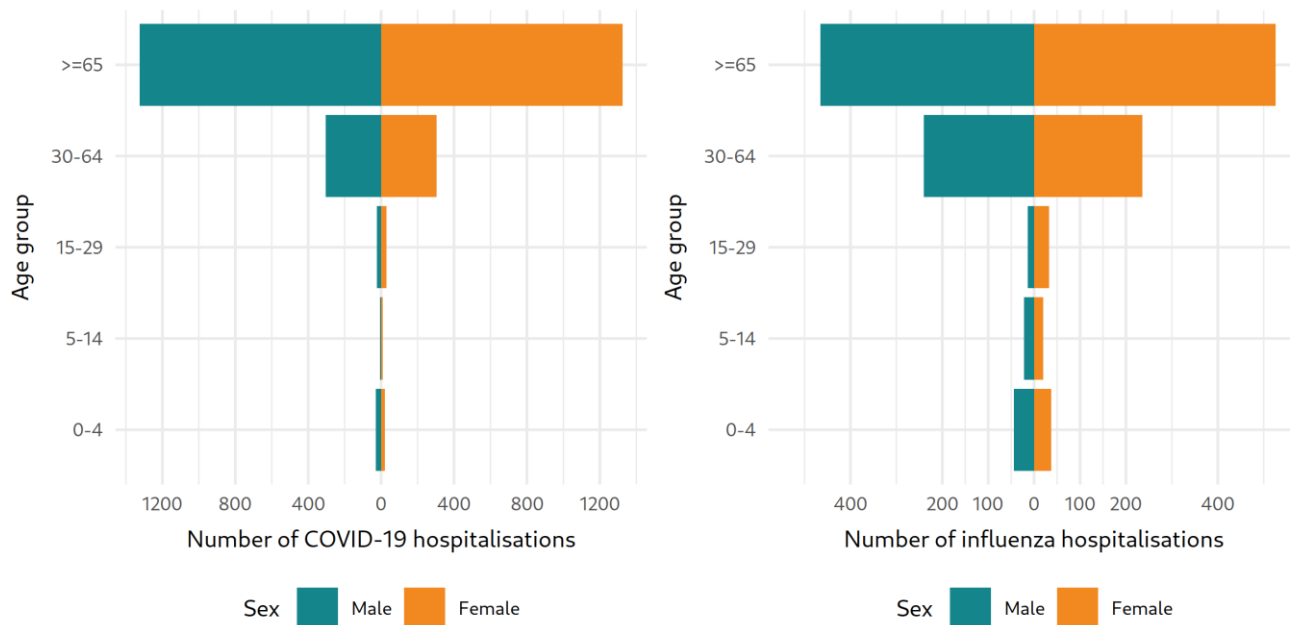## Number of COVID-19 and influenza hospitalisations by age group and sex (weeks 2023-40 to 2024-16)

Figure 4: Demographic characteristics of COVID-19 (n=3440) and influenza (n=1637) hospitalisations from week 2023-40 to week 2024-16.

3.   Contributions:

The following members of the Hospital Based Sentinel Surveillance group have participated in the development of this report:

- Laura Urbini, Jonathan Sobel, Mária Süveges, Sara Botero Mesa, Olivia Keiser from the Institute of Global Health (ISG), University of Geneva;
- Marie-Céline Zanella, and Stephan Harbarth from the Infection Control Program, University of Geneva Hospitals (HUG);
- Ursina Roder, Ornella Luminati, Carolina Agop Nersesian, Carla Grolimund, Fabienne Krauer, Anton Labutin, Jasmin Vonlanthen, Mirjam Mäusezahl, Katrin Schneider, from the Federal Office of Public Health (FOPH).

4.   Acknowledgements

Centres participating in the Hospital Based Sentinel Surveillance System: Kantonsspital St. Gallen (KSSG), Hôpitaux Universitaires de Genève (HUG), Luzerner Kantonsspital (LUKS), Spital Thurgau (STGAG), Universitätsspital Basel (USB), Hirslanden Clinic St Ana.

5. Definitions

Hospitals participating to data collection: To review the list of Swiss hospitals currently participating in the Hospital Based Surveillance System, please visit: Hospital-based surveillance of COVID-19 in Switzerland website.

Influenza season: participating hospitals report influenza cases from week 40 to week 20.

The **week** (calendar week - Monday to Sunday), used for the figures is:

- the week of hospital admission for community-acquired infections,
- the week of diagnosis for hospital-acquired infections, or if the hospital admission date is missing for community-acquired infections,
- the week of inclusion into the database if hospital admission and diagnosis dates are missing.

Nosocomial infection: patient who developed symptoms of influenza or tested positive for influenza more than 3 days or for COVID-19 more than 5 days after admission to the hospital.

Hospitalisations: A hospitalisation, as defined in this report, can include several hospital stays of the same patient if a new admission occurs within 30 days after the last discharge. Only hospital stays which last longer than 24 hours from admission to discharge are recorded in the system. If a patient is transferred between two hospitals participating in the Hospital Based Sentinel Surveillance System within the period of 30 days after last discharge, then these hospital stays count as one continuous hospitalisation. One hospitalisation can include multiple ICU admissions.

Vaccination status: patients are defined as having a current vaccination protection if the last dose of COVID-19 vaccine was administered within 6 months before the time of the positive SARS-CoV-2 test or, for influenza hospitalisations, if the patient received a vaccination for the current influenza season before the positive influenza test. Based on current vaccination recommendations for COVID-19 and Influenza in Switzerland, the analysis of the vaccination status in this report is limited to the group of patients aged 65 years and older as they are one of the main risk groups for whom vaccination is recommended.

Intermediate Care Unit (IMCU): unit caring for patients who have a failure of a vital function or whose burden of care does not allow a return to a hospitalisation unit.

Intensive Care Unit (ICU): unit caring for critically ill patients who have a serious failure of one or more vital functions or who are at risk of developing severe complications. ICUs have specialized medical and nursing care and enhanced capacity for monitoring patients. ICU and IMCU admissions include patients that were hospitalized *because* of COVID-19/influenza as well as *with* COVID-19/influenza (patients with a positive test for SARS-CoV-2/influenza but primary cause for hospitalization was not related to COVID-19/influenza).

Ventilation: includes non-invasive ventilation, invasive and Extracorporeal Membrane Oxygenation (ECMO) ventilation.

Cause of death: A medical doctor at each participating hospital determines whether a patient died of COVID-19/influenza or another cause (death probably not causally related to COVID-19/influenza).

Dealing with missing data: When mentioned in the text, missing data are excluded from the analysis. Otherwise, records with missing data are included in the total numbers and analysed accordingly. This may lead to the situation where the denominators of different categories analysed do not sum up to the same total.

Unknown: Values declared as "unknown" in this report include both missing and unknown data. This means that either the field is not filled (missing data) or it is specified as "unknown" in the questionnaire.