Respiratory Viruses in Luxembourg (ReViLux)

Sentinel Network Report -Week 01

Summary of Sentinel Network activities

At the end of week **2025/01**, the sentinel network detected a low epidemic activity, based on **6.6%** of consultations being associated with influenza-like illness. Among the specimens collected by the sentinel network over the last week, the percentage of positive tests for **Influenza A** was **30.8%**, **28.9%** for **RSV** and **26.3%** for **Human rhinovirus.**

During the week **2025/01**, positivity rates for **SARS-CoV-2** and Influenza B were **0%** in the sentinel network.

In total, this season (24/25) 967 samples were received with 97 Influenza positive samples (19 Influenza B and 78 Influenza A). So far, 64 of the 78 Influenza A samples have been subtyped. Twenty five (39%) Influenza A samples have been subtyped as A(H1)pdm9 and 39 (61%) samples as A(H3) virus. RSV continues to circulate at increased level with 58.4 % of subtype A and 41.6% subtype B cases.

Syndromic surveillance over the last 4 weeks (Table 1)

Week	ARI		ILI		Total consultations
	N	%	N	%	
2024/50	73	18.96	17	4.42	385
2024/51	101	23.71	34	7.98	426
2024/52	74	20.05	28	7.59	369
2025/01	45	24.73	12	6.59	182

ARI: Acute Respiratory Infections; ILI: Influenza-Like Illness.

Sentinel Surveillance Network

The Sentinel Surveillance aims to monitor circulating respiratory viruses, from traditional ones like Influenza to more recent ones like SARS-CoV-2, and hence underpin public health actions. The Sentinel Network is a group of general practitioners and paediatricians spread across the country. They report the weekly number of patients showing symptoms suggestive of acute respiratory infection (ARI) and influenza-like illness (ILI), and those patients are then sampled and tested for a panel of respiratory viruses. The circulation of respiratory viruses in the north hemisphere is generally monitored by seasons that go from week 40 to week 20. The period between weeks 20 and 40 is usually called inter-season.

Clinical results

Last week **(2025/01)**, **6.6%** of the consultations were reported as ILI, representing a low (borderline to medium) epidemic activity for Luxembourg, according to ECDC and the Moving Epidemic Method. During weeks 2024/51 and 2024/52, the network reported a medium epidemic activity, but decreased slightly last week. This could be due to holiday season, as only a small number of doctors participated and numbers should be interpreted with caution.

The history of ILI consultations is displayed in Figure 1, and a detailed summary of the number of ARI and ILI cases during the last four weeks is included in Table 1.

Laboratory results

Over the last week, the most frequently detected viruses (according to positivity rates) were **Influenza A (30.8%)**, followed by **RSV (28.9%)** and **Human rhinovirus (26.3%)**. During week 2025/01, no new cases of SARS-CoV-2 and Influenza B were identified. RSV activity remained elevated in week 2025/01, but decreased slightly from 31.4% to 28.9%. So far this season (24/25), hundred thirty five RSV cases have been detected, including sixty six RSV-A and forty seven RSV-B. Nearly 70% of cases were aged 1 and 4 years (figure 3).

In total, 967 sentinel samples have been analysed with more than 65% of samples belonging to age-group below 18 years (figure 4) and with 50.7 % of female cases.

This season (24/25), almost 70% of all A (H3) cases were detected in children and adolescents while 60% of A (H1) cases were detected in patients over 18 years old. Over the past 2 weeks, Human rhinovirus was detected in all age-groups, while Adenovirus and Metapneumovirus were detected predominantly in children. The fortnightly distribution of detections of common respiratory virus in all age-groups compared to previous season is shown in figure 5.

Over the last 2 weeks, about three quarters of all co-infections (N=11) were detected primarily in children below 5 years. The most commonly identified combination was RSV with Human rhinovirus.

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An overview of the circulating viral pathogens during the current and previous inter- season is displayed in Figure 2 and Table 2.

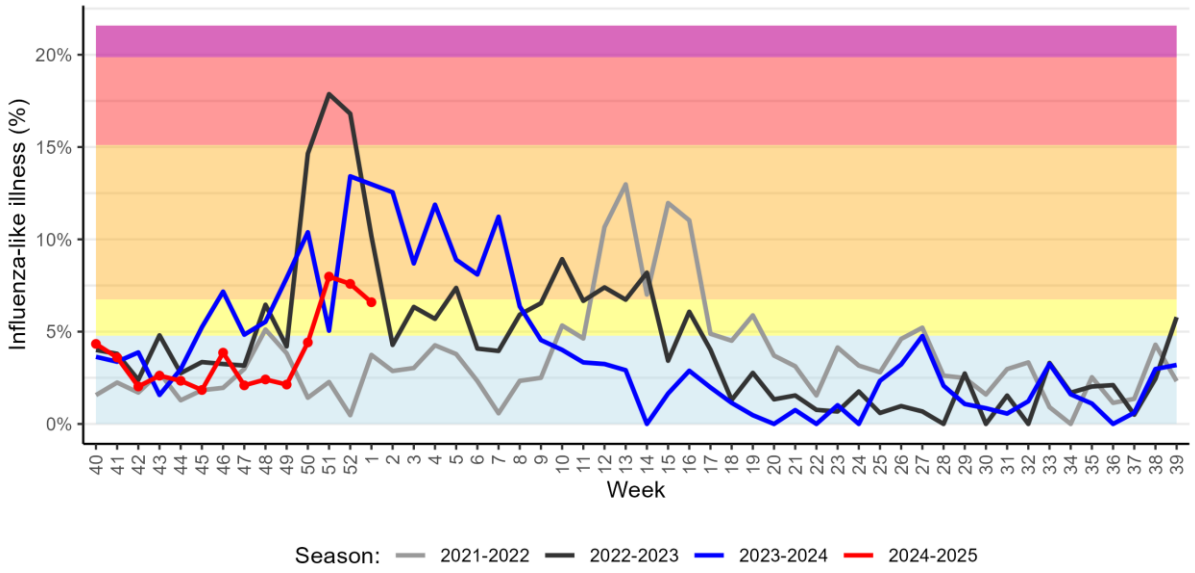

Figure 1. Percentage of patients with influenza-like illness over the last three seasons
Background colours according to intensity of circulation: baseline, low, medium, high, very high.

Table 2. Distribution of respiratory viruses detected within the Sentinel Network previous 4 weeks compared to previous year.

Virus	Season 2024/25					Season 2023/24	
	Positivity Rate in %						
	W50	**W51**	**W52**	**W01**	**Total N (%)**	**W01**	**Total N (%)**
Influenzavirus A	14.3	17.5	20.0	30.8	78 (8.1)	26.2	388 (16.5)
Respiratory syncytial virus	22.9	23.4	31.4	28.9	135 (14.0)	6.6	212 (9.2)
Human rhinovirus	37.1	27.9	20.0	26.3	358 (37.4)	9.8	572 (24.9)
Adenovirus	7.6	6.6	0.0	18.4	80 (8.4)	1.6	125 (5.4)
Metapneumovirus	1.9	2.2	2.9	5.3	17 (1.8)	1.6	125 (5.4)
Parainfluenzavirus	5.7	3.7	5.7	0.0	53 (5.5)	0.0	77 (3.4)
SARS-CoV-2	4.8	5.1	0.0	0.0	52 (5.4)	13.1	227 (9.7)
Influenzavirus B	2.9	5.8	5.7	0.0	19 (2.0)	0.0	12 (0.5)

Co-detection counted once for each virus detected & N- total number of detection during season

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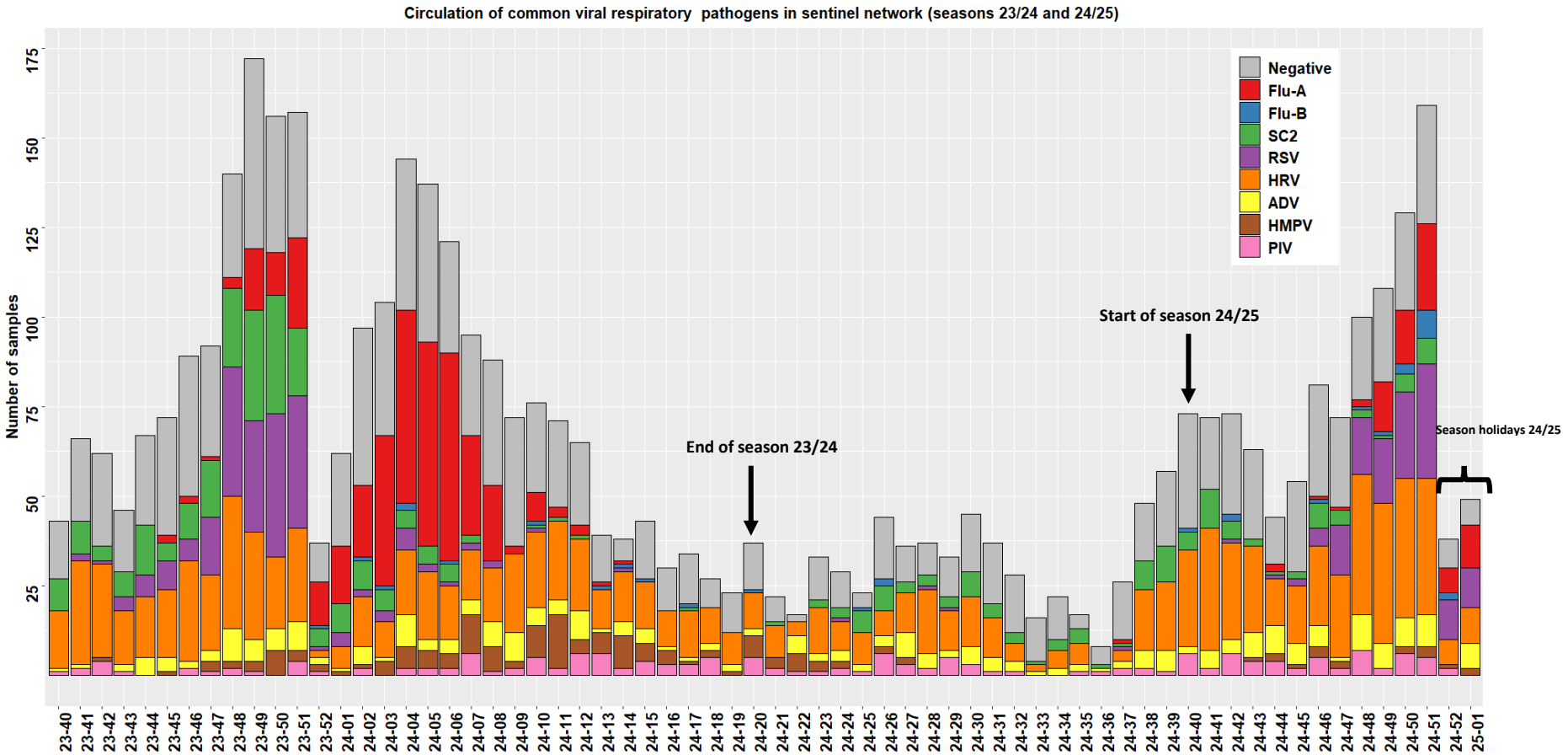

Figure 2. Distribution of respiratory viruses detected within the Sentinel Network, by calendar week. Results from last weeks are not all yet consolidated.
FLU-A: Influenzavirus A; FLU-B: Influenzavirus B; PIV:Parainfluenzavirus; RSV: Respiratory syncytial virus; ADV: Adenovirus; MPV: Metapneumovirus; HRV: Human rhinovirus; SC2: SARS-CoV-2.

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Figure 3. Displays RSV cases according to different age groups with highest impact among the 1-4 years old. Data for week 2025/01 not yet completely consolidated

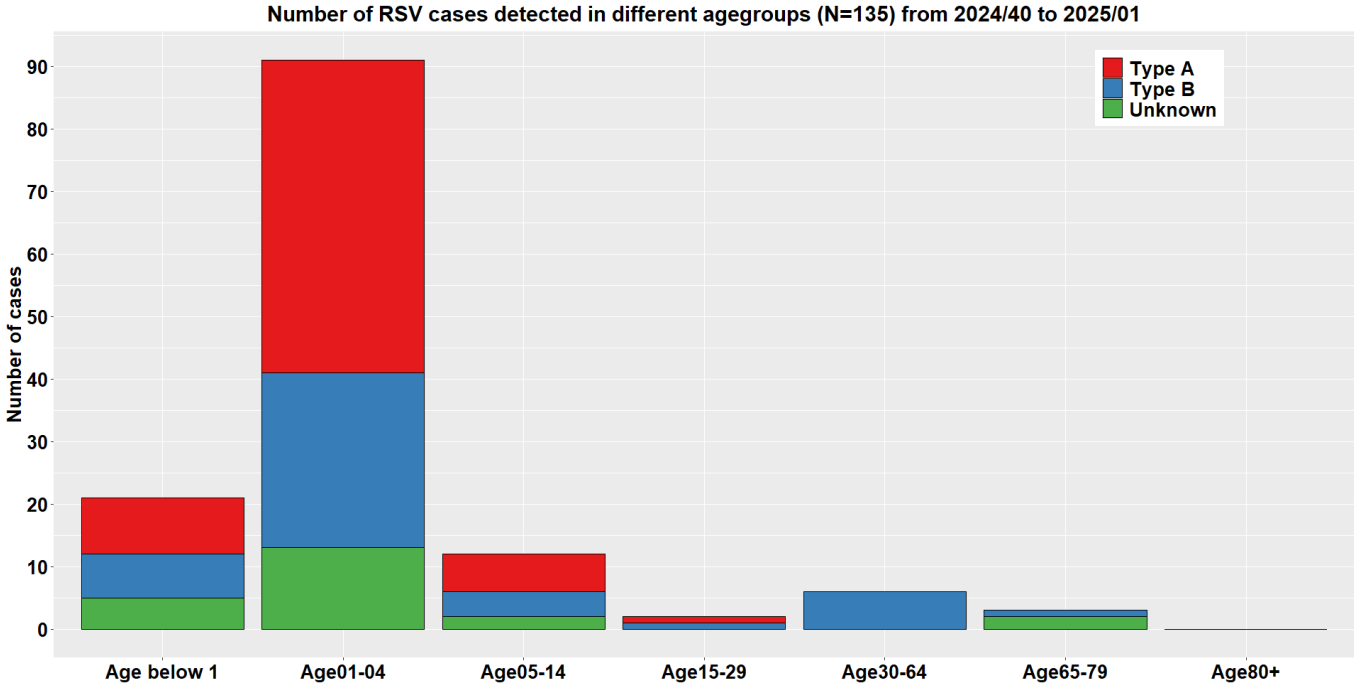
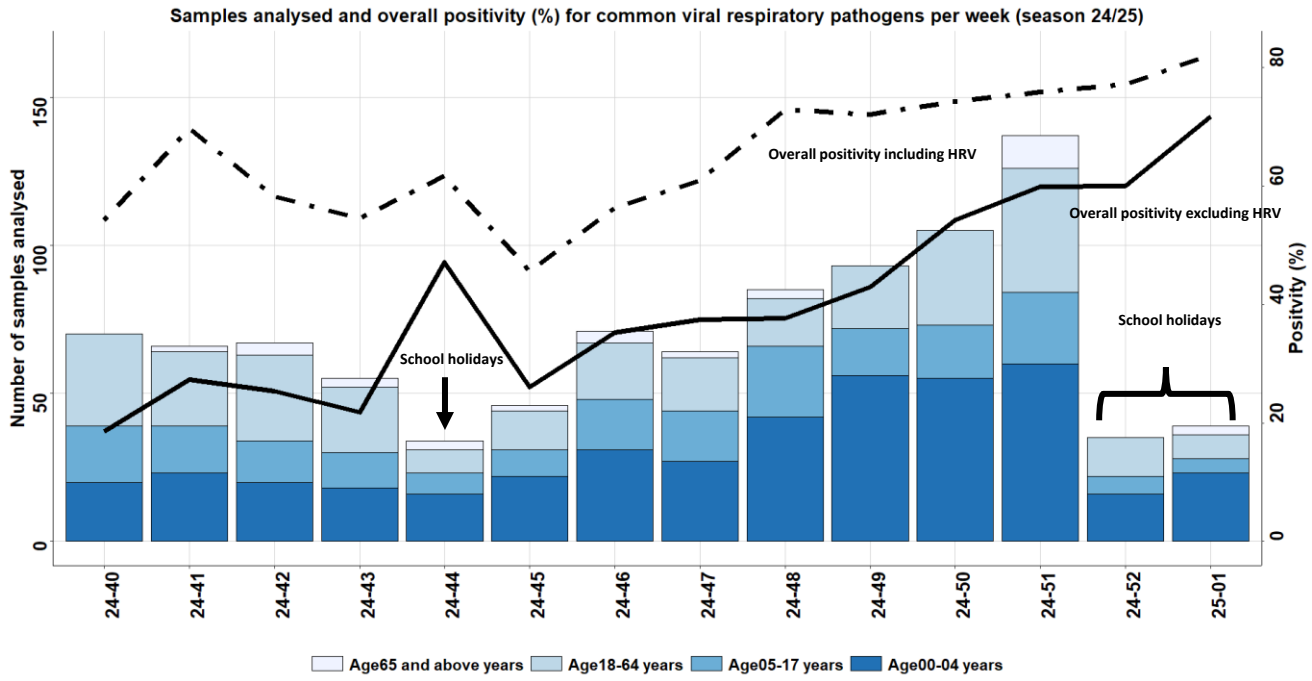


Figure 4. Displays number of sentinel samples received per week by age-group including overall sample positivity including Human rhinovirus (HRV, dotted line) and excluding HRV (black line). Secondary axis corresponds to positivity



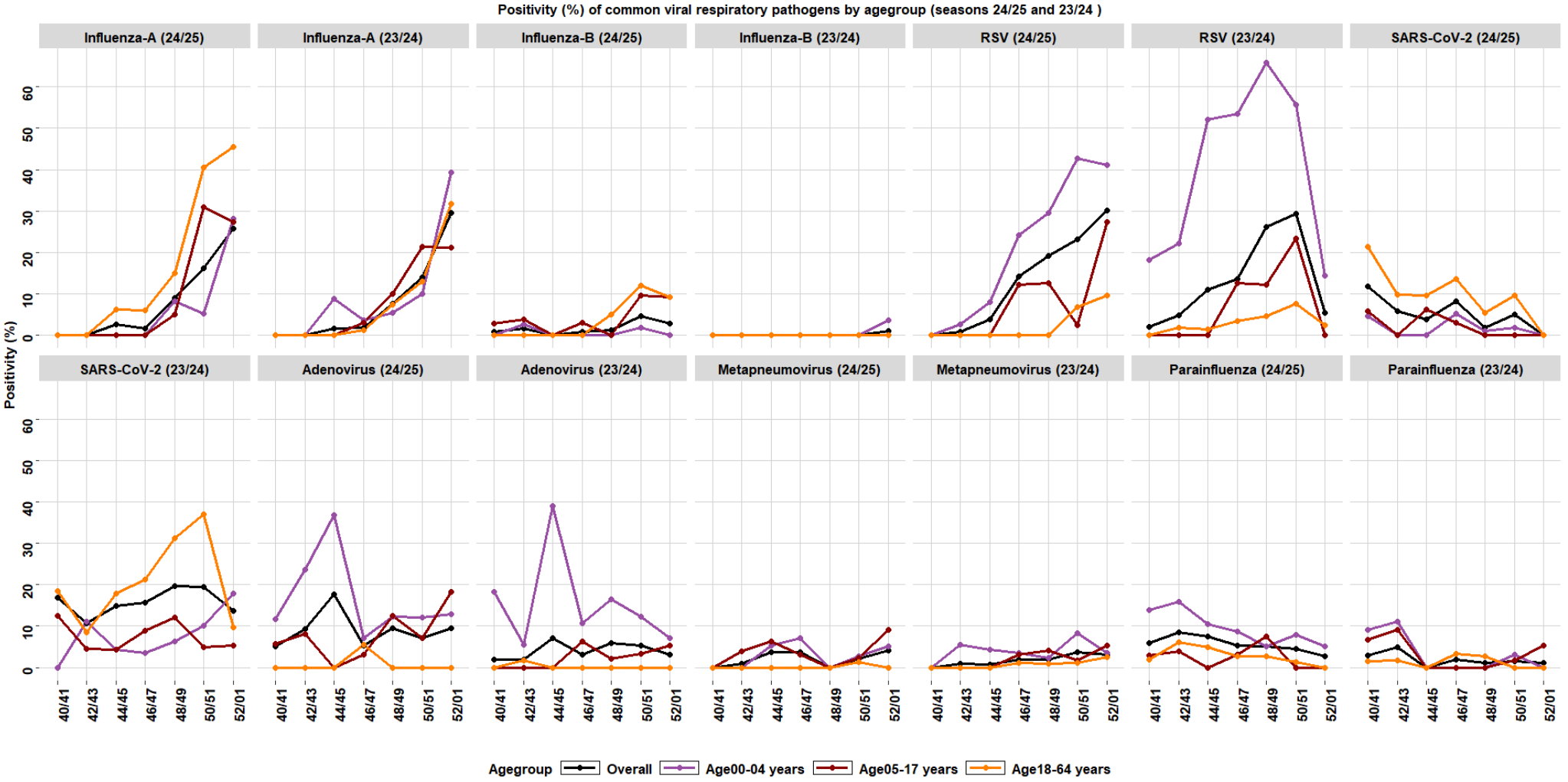


Figure 5. Displays biweekly positivity rates in different age-groups comparing season 23/24 and 24/25. Age-group >64 years not presented due to low sample size (3%) but included in overall rate.

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