

Respiratory Viruses in Luxembourg (ReViLux)

Sentinel Network Report -Week 45

Summary of Sentinel Network activities

At the end of week **2024/45**, the sentinel network detected a baseline epidemic activity, based on **2.3%** 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 **Human rhinovirus** was **37.1%**, **11.4%** for **Adenovirus** and **5.7%** for **Parainfluenza**. During the week **2024/45**, positivity for **SARS-CoV-2** was **4.3%** and **2.9%** for **RSV** in the sentinel network. Over the past three weeks, SARS-CoV-2 positivity remained below 5%.

In total, this season (24/25) 337 samples were received with 5 Influenza positive samples (3 Influenza B and 2 Influenza A). Both Influenza A samples have been subtyped as A(H1) virus. RSV circulates at low level with 1 case of subtype A detected so far. About three quarters of SARS-CoV-2 cases (N=19) have been detected in age-group 18 to 65 years in the sentinel network and 54% of all cases were female.

Syndromic surveillance over the last 4 weeks (Table 1)

Week	ARI		ILI		Total consultations
	N	%	N	%	
2024/42	82	20.81	8	2.03	394
2024/43	22	14.38	4	2.61	153
2024/44	29	16.96	4	2.34	171
2024/45	19	8.64	5	2.27	220

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 (**2024/45**), **2.3%** of the consultations were reported as ILI, representing a baseline epidemic activity for Luxembourg, according to ECDC and the Moving Epidemic Method. Over the past few weeks baseline ILI rates have been observed. Similar levels have been observed during previous season at this time of the year. 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 **Human rhinovirus (37.1%)**, followed by **Adenovirus (11.4%)** and **Parainfluenza (5.7%)**. In week 2024/45, positivity for **SARS-CoV-2** was **4.3%** and **2.9%** for **RSV** in the sentinel network. SARS-CoV-2 positivity has remained below 5 % and over the past two weeks low circulation of RSV has been detected in the sentinel network.

In total, 337 sentinel samples have been analysed with more than 50% of samples belonging to age-group below 18 years (figure 3) and with 53 % of female cases. Over the last 4 weeks, Human rhinovirus was detected in all age-groups whereas Adenovirus and Parainfluenza viruses have been primarily detected in children. Nearly three quarters of SARS-CoV-2 cases (N=19) were detected in age-group 18 to 65 years in the sentinel network. Recent Influenza A (H1) cases have been identified in age-group > 60 years and recent RSV cases in age-group below 5 years.

Over the last 4 weeks, more than three quarters (N=28) of all co-infections (N=36) were detected primarily in children below 5 years. The most commonly identified combination was Adenovirus with Human rhinovirus.

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

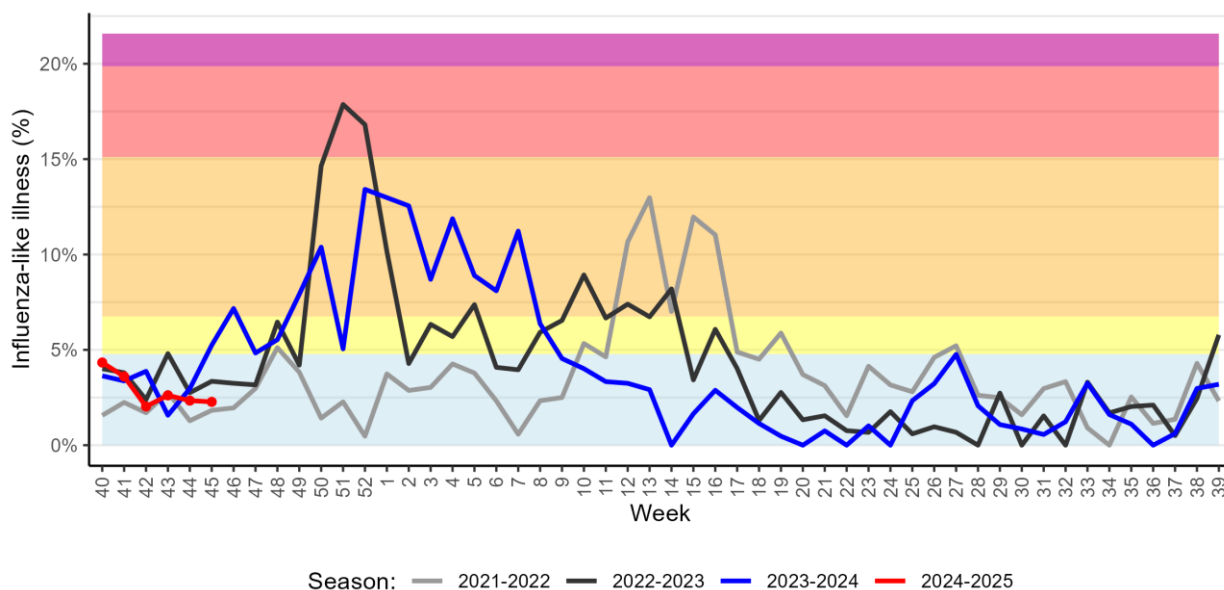


Figure 1. Percentage of patients with influenza-like illness over the last three seasons
Background colours according to intensity of circulation: baseline, low, medium, high, very high.

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 %					W45	Total N (%)
	W42	W43	W44	W45	Total N (%)		
Human rhinovirus	40.3	46.2	40.6	37.1	138 (43.0)	27.4	572 (24.9)
Adenovirus	6.0	13.5	25.0	11.4	30 (9.3)	8.1	125 (5.4)
Parainfluenzavirus	9.0	7.7	12.5	5.7	24 (7.5)	0.0	77 (3.4)
SARS-CoV-2	7.5	3.6	3.0	4.3	26 (7.7)	22.6	227 (9.7)
Respiratory syncytial virus	1.5	0.0	3.1	2.9	3 (0.9)	9.7	212 (9.2)
Metapneumovirus	0.0	1.9	6.3	2.9	4 (1.2)	0.0	125 (5.4)
Influenzavirus A	0.0	0.0	6.1	0.0	2 (0.6)	0.0	388 (16.5)
Influenzavirus B	3.0	0.0	0.0	0.0	3 (0.9)	0.0	12 (0.5)

Co-detection counted once for each virus detected & N* total number of detection during season
Data for week 2024/45 not completely consolidated

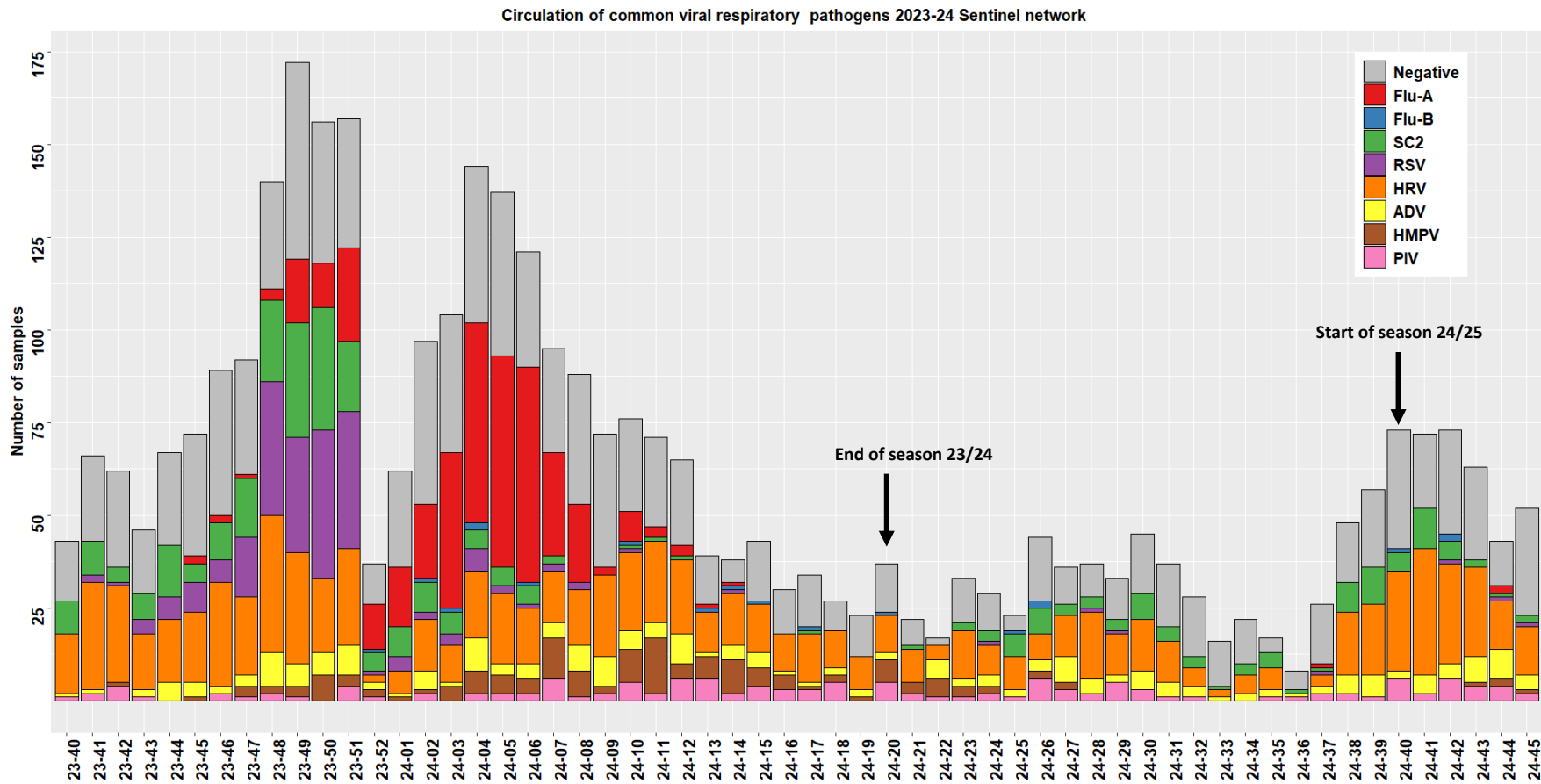
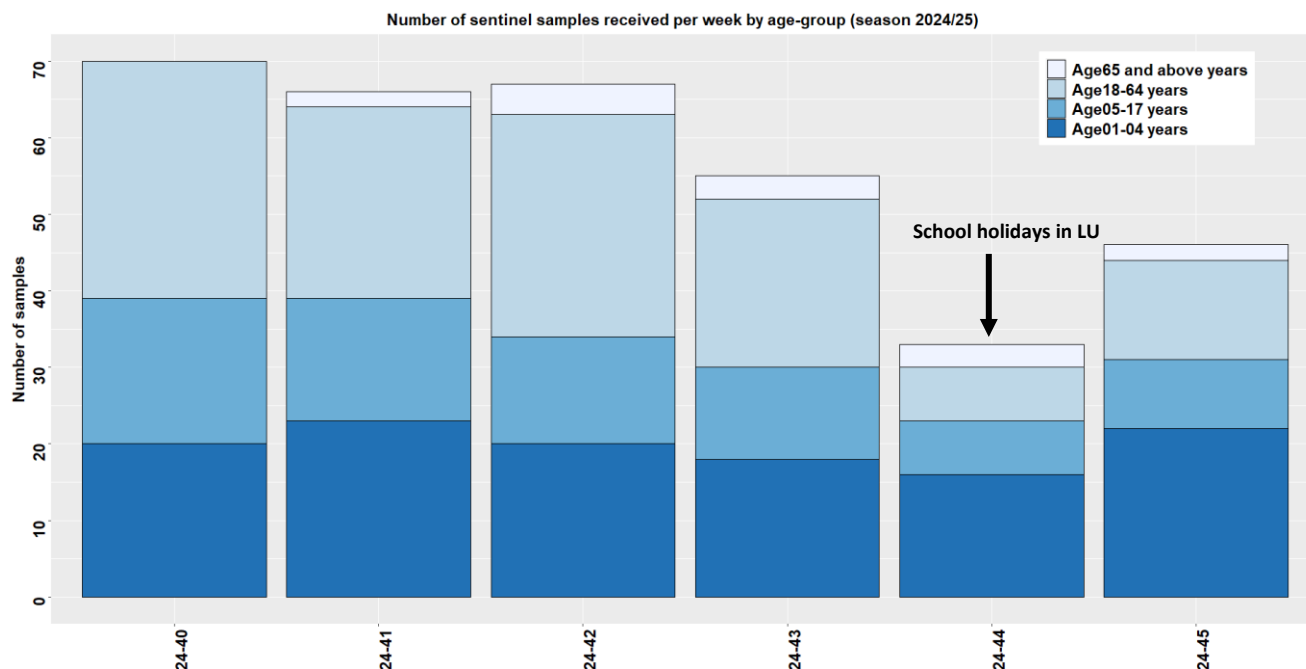


Figure 2. Distribution of respiratory viruses detected within the Sentinel Network, by calendar week. Results from last weeks are not all yet consolidated.
 FLU-A: Influenzavirus A; FLU-B: Influenzavirus B; PIV: Parainfluenzavirus; RSV: Respiratory syncytial virus; ADV: Adenovirus; MPV: Metapneumovirus;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

Figure 3. Displays number of sentinel samples received per week by age-group. Data for week 2024/45 not yet completely consolidated



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