Respiratory Viruses in Luxembourg (ReViLux)

Sentinel Network Report -Week 40

Summary of Sentinel Network activities

At the beginning of the season (**2025/40)**, the sentinel network detected a baseline activity with upward trend, based on **3.0%** of consultations being associated with influenza-like illness.

The LNS received 67 samples from the sentinel doctors, representing all age-groups.

Among the specimens collected by the sentinel network during the last week (**2025/40**), the percentage of positive tests for **human rhinovirus** was **47.8%**, followed by **SARS-CoV-2 (20.9%),** while the positivity rate for **RSV** was **1.5%.**

Circulation of human rhinovirus and SARS-CoV-2 was detected in all age-groups, while low level circulation of parainfluenza, RSV and human metapneumovirus was detected only in children.

Detection of respiratory viruses during the inter-season (weeks 2025/21-2025/39)

During the inter-season, the LNS analysed 458 samples and respiratory viruses were identified in a total of 298 samples (65.0%), mainly rhinoviruses (36.9%), parainfluenza (15.5%) and SARS-CoV-2 (9.0%). So far, 25 of the 42 SARS-CoV-2 samples have been characterized, and the majority of samples belong to XFG variant (60%). XFG is the dominant variant currently circulating in Europe.
During the inter-season,as expected, the sentinel network detected very low numbers of influenza A viruses (3 cases of A(H1N1)pdm09 and 1 case A(H3)). The cycle threshold of the A(H3) virus was above 35 and the virus could not be further characterized. All three A (H1) haemagglutinin genes were genetically characterized and belonged to clade 5a.2a.1, subclade D.3.1 (figure 4). Subclade D.3.1 was the most common subclade identified during the inter-season in Europe.

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 Northern Hemisphere is generally monitored by seasons that range from week 40 to week 20. The period between weeks 20 and 40 is usually called inter-season.

Clinical results

At the start of the season **(end of week 2025/40)**, **3.0%** of the consultations were reported as ILI, representing a baseline activity for Luxembourg, according to ECDC and the Moving Epidemic Method. However, in the sentinel network, the number of GP consultations due to AR/ILI increased significantly from week 2025/39 to week 2025/40.

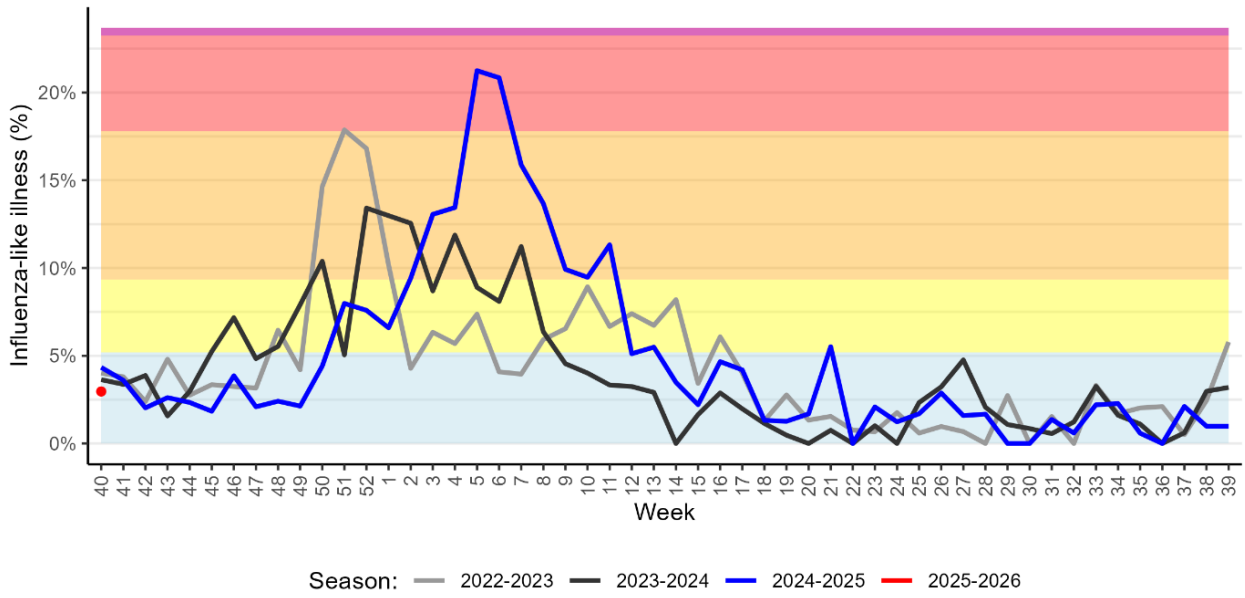
The history of ILI consultations is displayed in figure 1, and a detailed summary of the number of ARI and ILI cases during the last four weeks is included in table 1.

Table 1. Syndromic surveillance over the last 4 weeks

Week	ARI		ILI		Total consultations
	N	%	N	%	
2025/37	14	9.86	3	2.11	142
2025/38	18	8.87	2	0.99	203
2025/39	31	10.16	3	0.98	305
2025/40	54	14.56	11	2.96	371

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

Figure 1. Percentage of patients with Influenza-like illness over the last three seasons and 2025-2026 (red) Background colours according to intensity of circulation: baseline, low, medium, high, very high.



Laboratory results

During the first week of the season 2025/26, the LNS received 67 samples with a median age of 35 years (range: 0-76 years). Overall, 53.7% (N=36) were female and 46.3% (N=31) male patients. Symptoms were reported in only 55% (N=37) of patients, of whom 70% (N=26) reported fever and 64% (N=24) systemic symptoms such as headaches or muscle aches in addition to respiratory symptoms. Furthermore, influenza vaccine records were available in 43 cases (64%), of which approximately 10% reporting vaccination during the previous season. RSV vaccination records were available for all children under 2 years of age (N = 7), 2 of whom reported being vaccinated with long acting monoclonal antibodies.

In week 2025/40, the LNS identified respiratory viruses in a total of 46 (68.7%) of the 67 sentinel samples, mainly **human rhinovirus (47.8%)**, followed by **SARS-CoV-2 (20.9%)** and **parainfluenza (3.0%)**. The sentinel network did not detect any influenza circulation, but low level **RSV** circulation **(1.5%)**. RSV subtyping is still outstanding. Human rhinovirus and SARS-CoV-2 have been detected in all age-groups, while parainfluenza and RSV have been detected in children below 2 years old.

Similar trends were also observed in neighbouring countries with widespread SARS-CoV-2 circulation and low RSV/ influenza circulation.

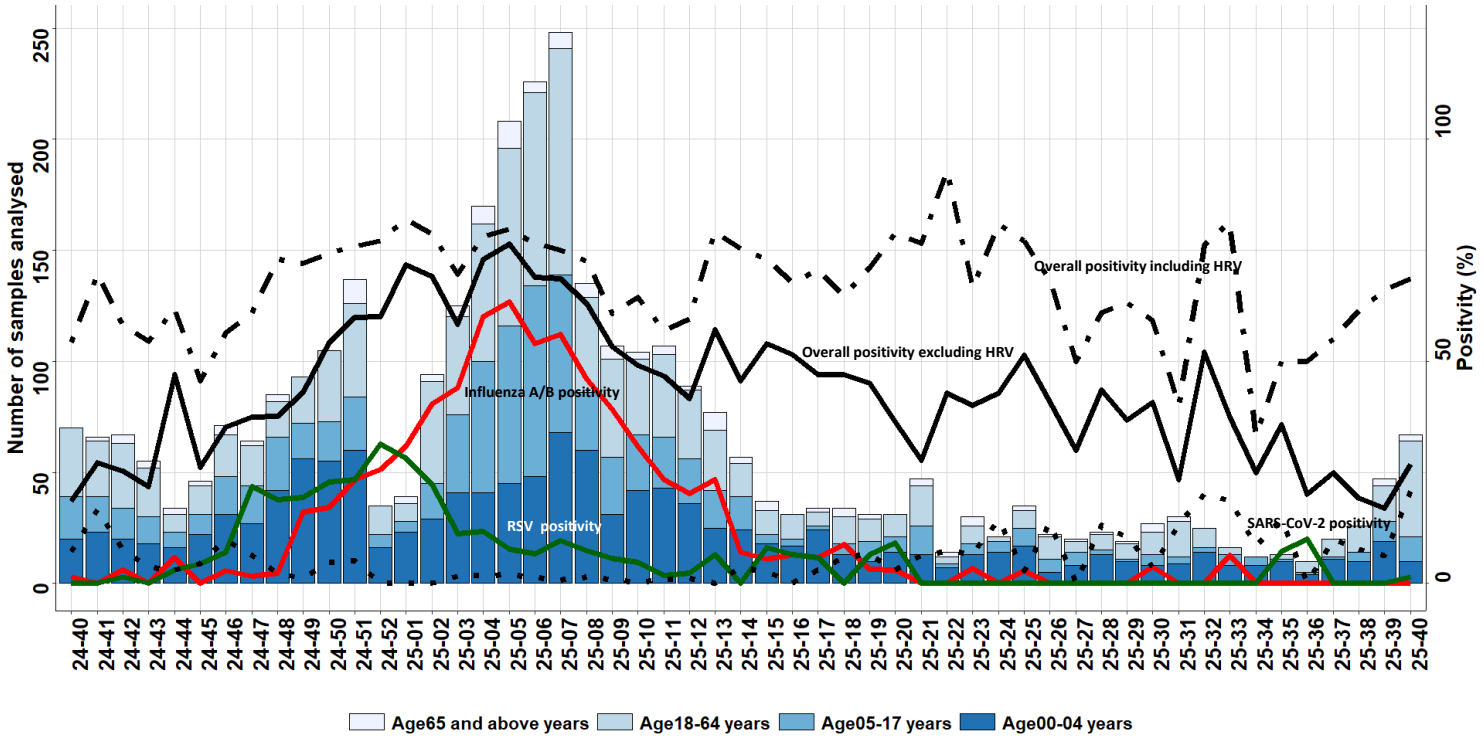
An overview of the circulating viral pathogens in the sentinel network in Luxembourg during the current and previous (inter)- season is presented in figure 2, 3 and table 2.

Table 2. Distribution of respiratory viruses detected within the Sentinel Network during the past 6 weeks compared to previous season. Weeks 35/36 and weeks 37/38 have been combined due to low numbers

Virus	inter-season 24/25 and season 25/26				season 24/25	
	Positivity Rate in %					
	W35/36	**W37/38**	**W39**	**W40**	**W39**	**W40**
Human rhinovirus	20.8	39.1	61.7	47.8	35.9	38.6
SARS-CoV-2	8.3	8.7	6.4	20.9	18.5	7.1
Parainfluenzavirus	8.3	8.7	4.3	3.0	1.9	8.6
Respiratory syncytial virus	8.3	0.0	0.0	1.5	0.0	0.0
Metapneumovirus	0.0	0.0	0.0	1.5	0.0	0.0
Adenovirus	8.3	4.3	6.4	0.0	11.3	2.9
Influenzavirus A	0.0	0.0	0.0	0.0	0.0	0.0
Influenzavirus B	0.0	0.0	0.0	0.0	0.0	1.4

Co-detection counted once for each virus detected

*Figure 2. Presents number of sentinel samples received per week by age-group (weeks 2024/40 to 2025/40) including overall sample positivity- including human rhinovirus (HRV, dot-dash line), excluding HRV (black line), SARS-CoV-2 (dotted line), influenza **combined** (red) and RSV (green). Secondary axis corresponds to positivity*



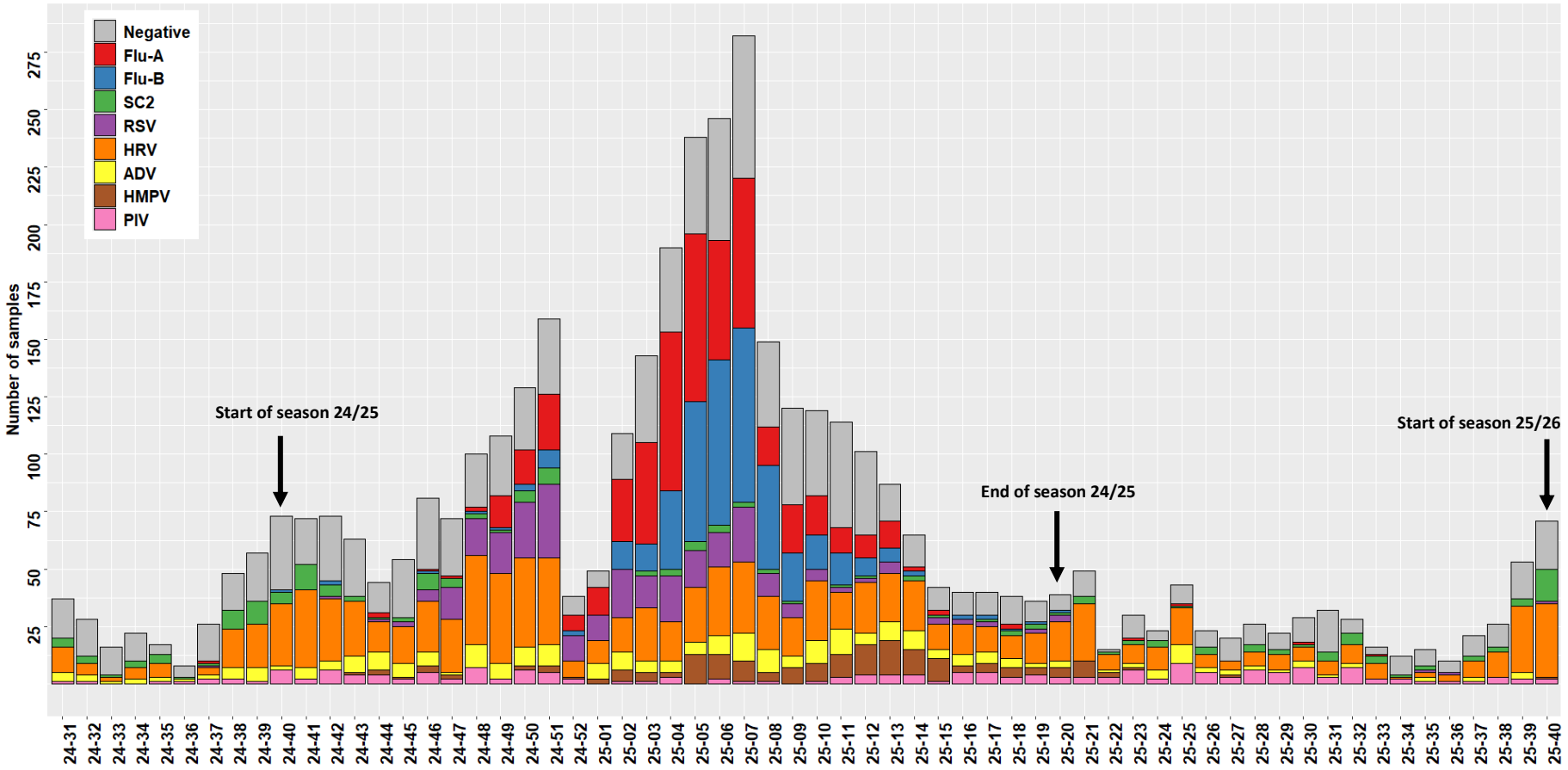


Figure 3. Circulation of respiratory viruses detected within the Sentinel Network by calendar week (seasons 24/25 and 25/26). FLU-A: influenzavirus A; FLU-B: influenzavirus B; PIV:parainfluenzavirus; RSV: respiratory syncytial virus; ADV: adenovirus; HMPV: metapneumovirus; HRV: human rhinovirus; SC2: SARS-CoV-2.

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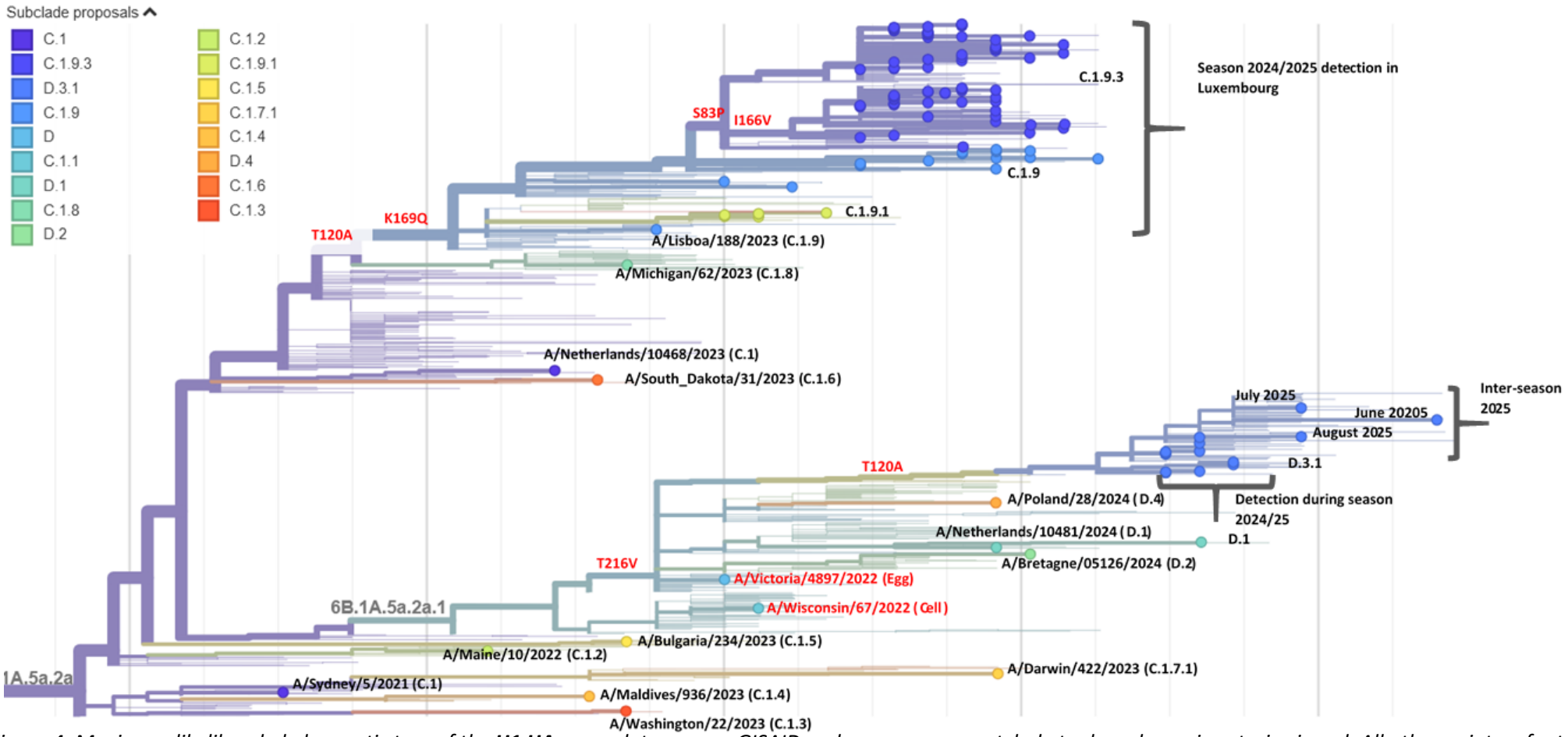

*Figure 4. Maximum likelihood phylogenetic tree of the **H1 HA** gene; data source: GISAID and open source nextclade tool used; vaccine strains in red; All other points refer to reference sequences; Lines in background display similar strains detected globally; During the season, Luxembourg A(H1N1)pdm09 viruses clustered in subclades C.1.9.3 and C.1.9 & occasionally detected viruses belonging to clade 5a.2a.1 (subclades D.1 and D.3.1); During the inter-season, the LNS identified only D.3.1 viruses; data caveat low number of samples and only sentinel samples characterized; however similar trends were observed globally*

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