Respiratory Viruses in Luxembourg (ReViLux)

Sentinel Network Report – Week 48

Sentinel Surveillance Network

The Sentinel Surveillance aims at monitoring the 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 over Luxembourg. 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

By the end of week 48, 5.3 % of the consultations were reported as ILI, which represents a **low- closed to medium** epidemic activity for Luxembourg, according to ECDC and the Moving Epidemic Method. 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 **two weeks**, the most frequently detected viruses (according to positivity rates) were Human rhinovirus (29.7%), closely followed by RSV (26.7%) and SARS-CoV-2 (19.3%). An overview of the circulating viral pathogens during the current and previous inter- season is displayed in Figure 2 and Table 2.

Test positivity for RSV increased from 9.3% (weeks 45/46) to 26.7% (weeks 47/48) with highest impact among the 0-4-years age group (Figure 3). To date, 59 RSV detections have been subtyped as either RSV A (N=54, 92%) or RSV B (N=5, 8%). Influenza virus A positivity was 2.0% (lower compared to last season). Eight samples have been characterized as A(H1)pdm09. Up to week 48, 96 cases of SARS-CoV-2 have been detected through the sentinel network. 32 samples were characterised in more detail. The estimated distribution of variants was 28% for EG.5, 15.6% for BA.2.86 and 34% can be classified as XBB (for example XBB.1.9 or XBB.1.5). An overview of the distribution is displayed in Figure 4.

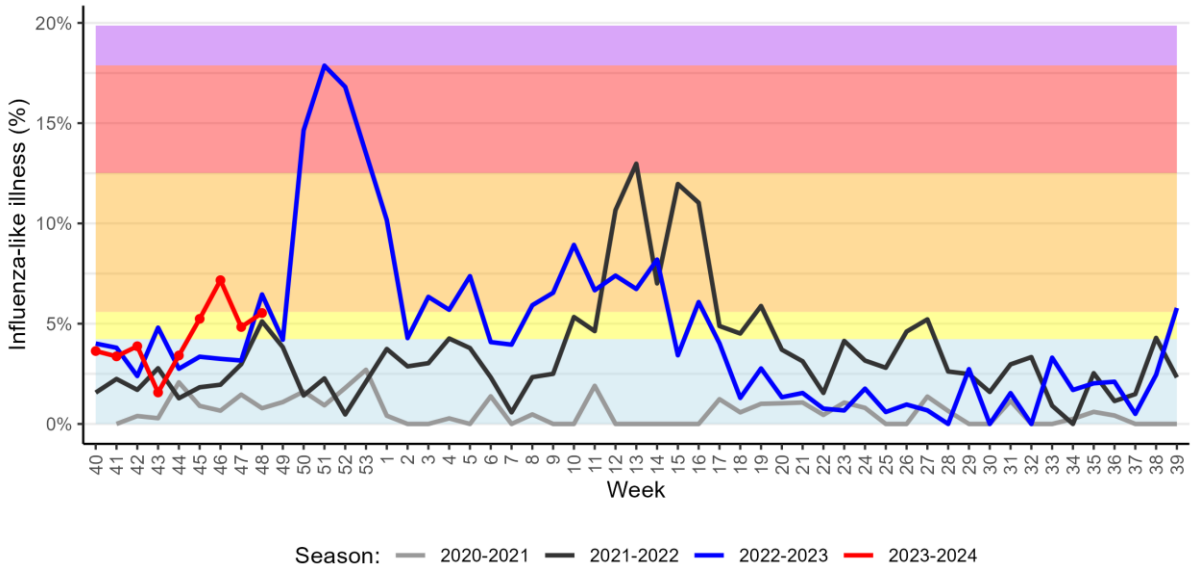

Figure 1. Percentage of patients with influenza-like illness over the last three seasons
Background colours according to intensity of circulation: baseline, low, medium, high, very high.

Table 1. Syndromic surveillance over the last 4 weeks

Week	ARI		ILI		Total consultations
	N	%	N	%	
2023/45	45	18.15	13	5.24	248
2023/46	54	19.35	20	7.17	279
2023/47	61	15.52	19	4.83	393
2023/48	123	25.20	27	5.53	488

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

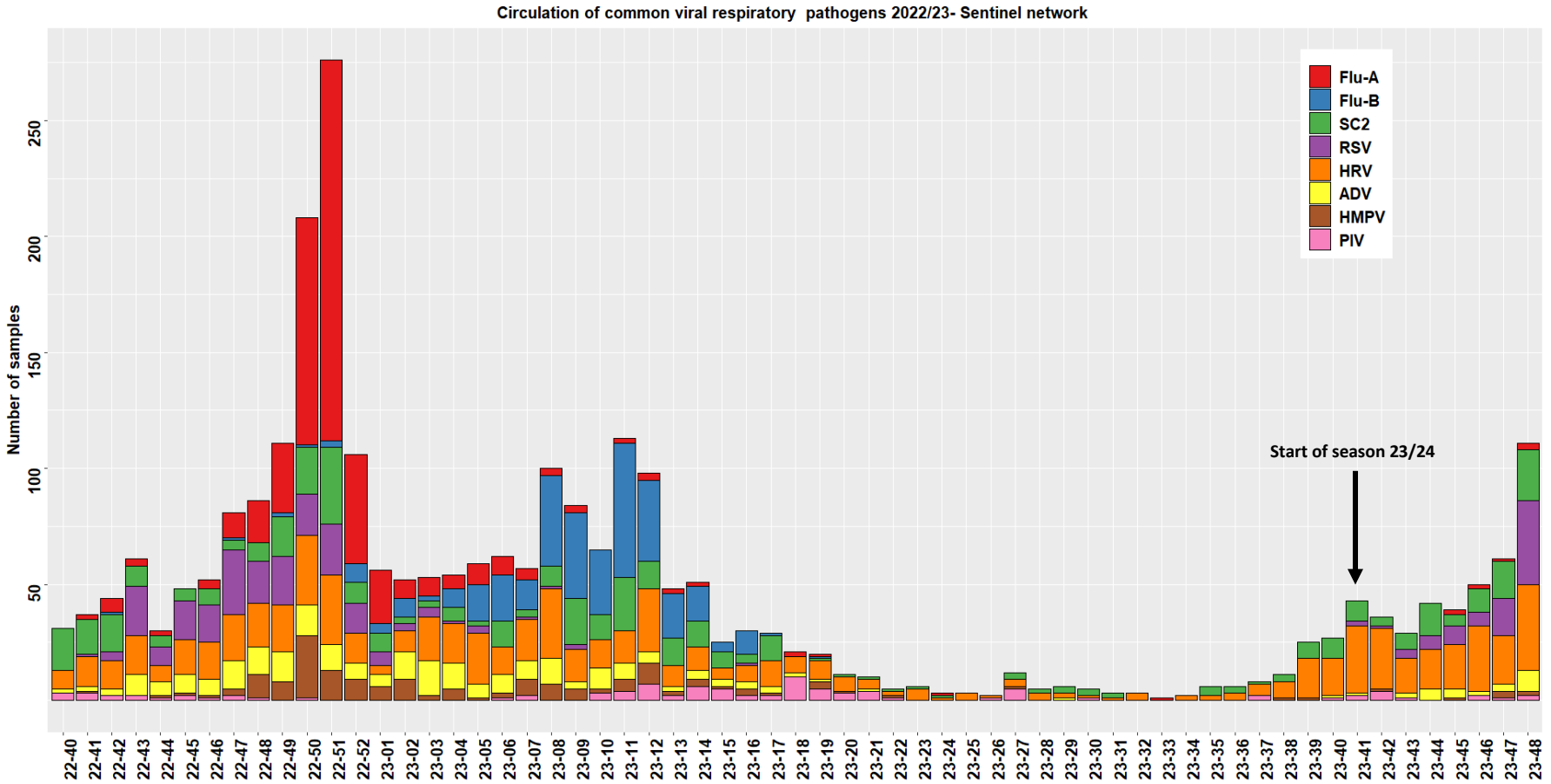

Figure 2. Distribution of respiratory viruses detected within the Sentinel Network, by calendar week. Results from last weeks are not yet consolidated.

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.

National Reference Laboratory for Acute Respiratory Infections
Department of Microbiology - **Laboratoire national de santé**
1, rue Louis Rech | L-3555 Dudelange
T : (+352) 28 100 523 | F : (+352) 28 100 512 | microbiology@lns.etat.lu | www.lns.lu

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

Virus	Season 23/24 weeks (47/48)		Season 22/23 weeks (47/48)	
	N*	Positivity rate (%)	N*	Positivity rate (%)
Human rhinovirus	58	29.7	39	21.3
Respiratory syncytial virus	52	26.7	46	25.1
SARS-CoV-2	38	19.3	12	5.9
Adenovirus	12	6.2	24	13.1
Metapneumovirus	5	2.6	13	7.1
Influenzavirus A	4	2.0	29	14.1
Parainfluenzavirus	3	1.5	3	1.6
Influenzavirus B	0	0.0	1	0.5
Total	**172**		**167**	

**Co-infection cases counted once for each virus detection*

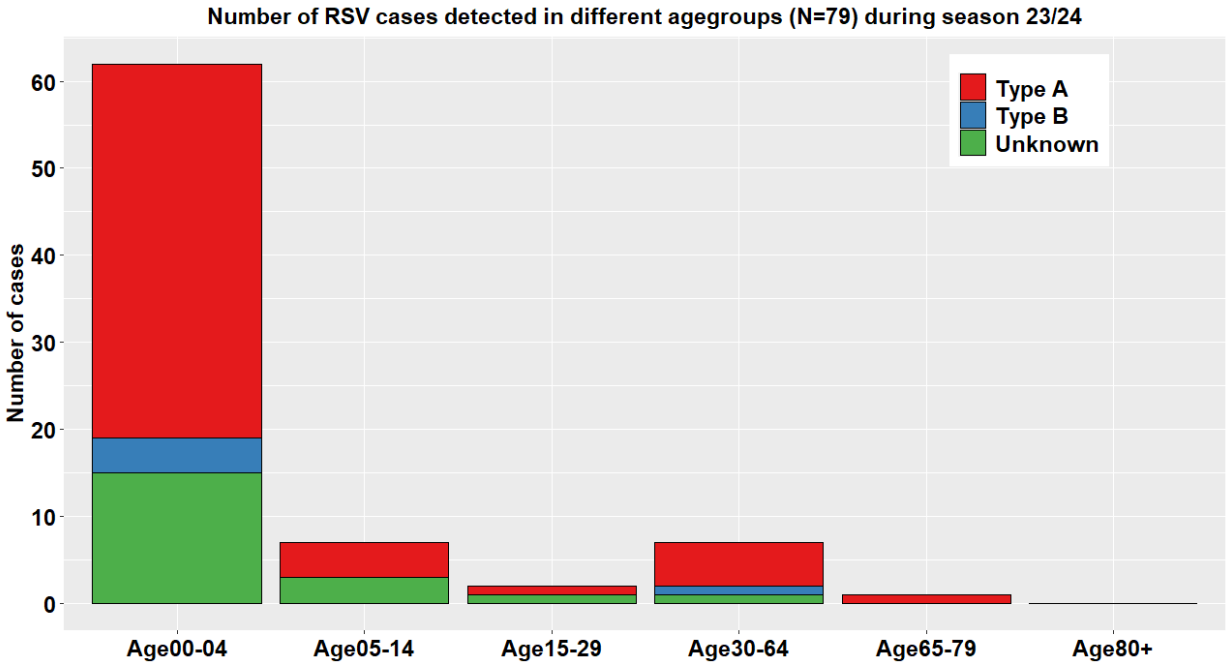

Figure 3. Displays RSV cases according to different age groups with highest impact among the 0-4 years old.

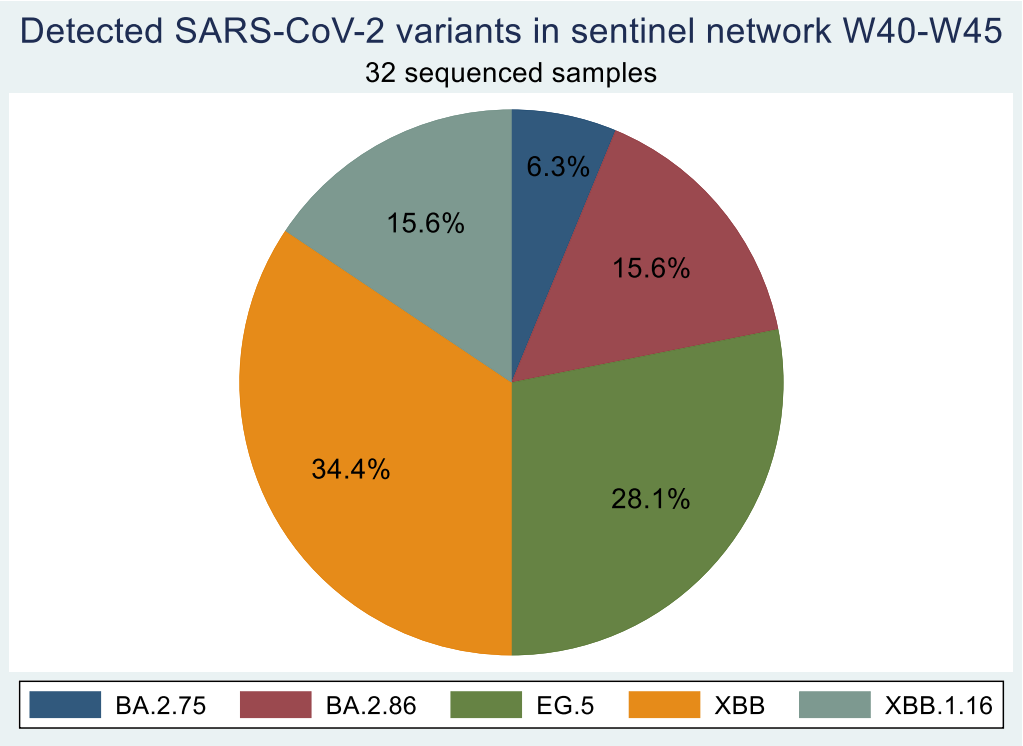

Figure 4. SARS-CoV-2 sequencing results for sentinel samples with majority of samples identified as XBB, followed by EG.5 and BA.2.86

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