Respiratory Viruses in Luxembourg (ReViLux)

Report – Sentinel Week 50

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 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, 10.4% of the consultations were reported as ILI, which represents a medium epidemic activity for Luxembourg, according to ECDC and the Moving Epidemic Method. ILI rates have increased since week 2023/43 with drop in week 2023/46, but then increased steadily to 10.4% in week 2023/50. 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 SARS-CoV-2(24.4%), followed by RSV (11.3%) and Influenza A (8.9%). An upward trend in SARS-CoV-2 positivity has been observed over the last three weeks within the sentinel network. Positivity rates of Influenza A decreased slightly from 11.3% (2023/49) to 8.9% (2023/50). Eighteen samples have been characterized with 94% subtyped as A(H1)pdm09 and 6% as A(H3). Test positivity for RSV decreased further from 17.0% (2023/49) to 11.3 (2023/50), however not all samples have been tested yet. Overall, this season (23/24), the highest impact was seen among the 0-4 years age group (Figure3).

To date, 90 RSV detections were further subtyped as either RSV A (N=81, 90%) or RSV B (N=9, 10%). An overview of the circulating viral pathogens during the current and previous inter-season is displayed in Figure 2 and Table 2.
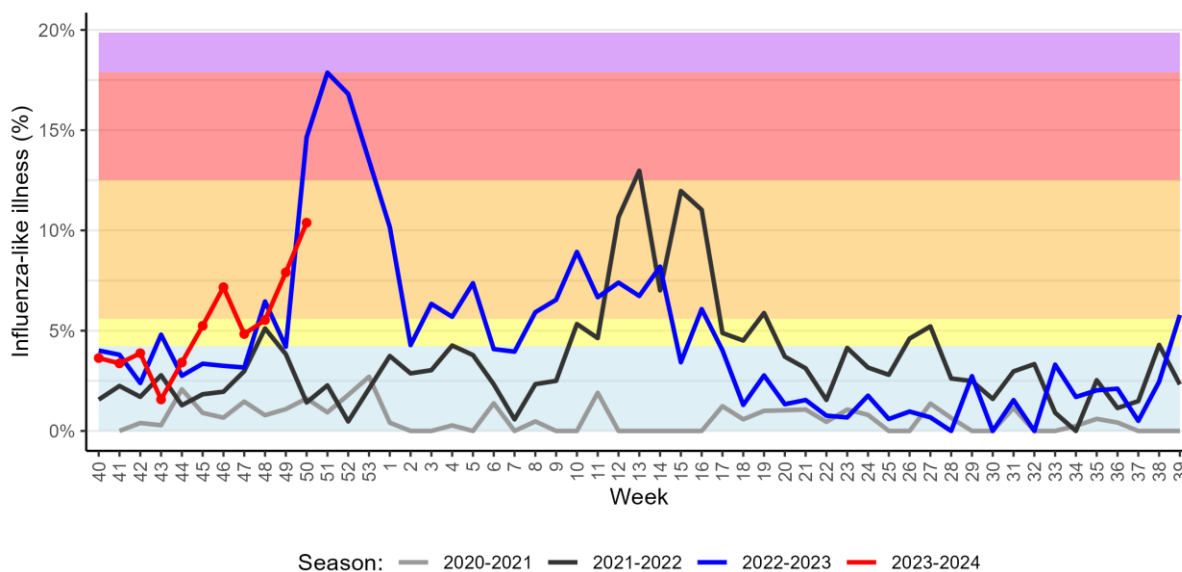
Figure 1. Percentage of patients with influenza-like illness over the last three seasons
Background colours according to intensity of circulation: baseline, low, medium, high, very high.

Table 1. Syndromic surveillance over the last 4 weeks

Week	ARI		ILI		Total consultations
	N	%	N	%	
2023/47	61	15.52	19	4.83	393
2023/48	123	25.20	27	5.53	488
2023/49	146	27.50	42	7.91	531
2023/50	111	21.35	54	10.38	520

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

National Reference Laboratory for Acute Respiratory Infections

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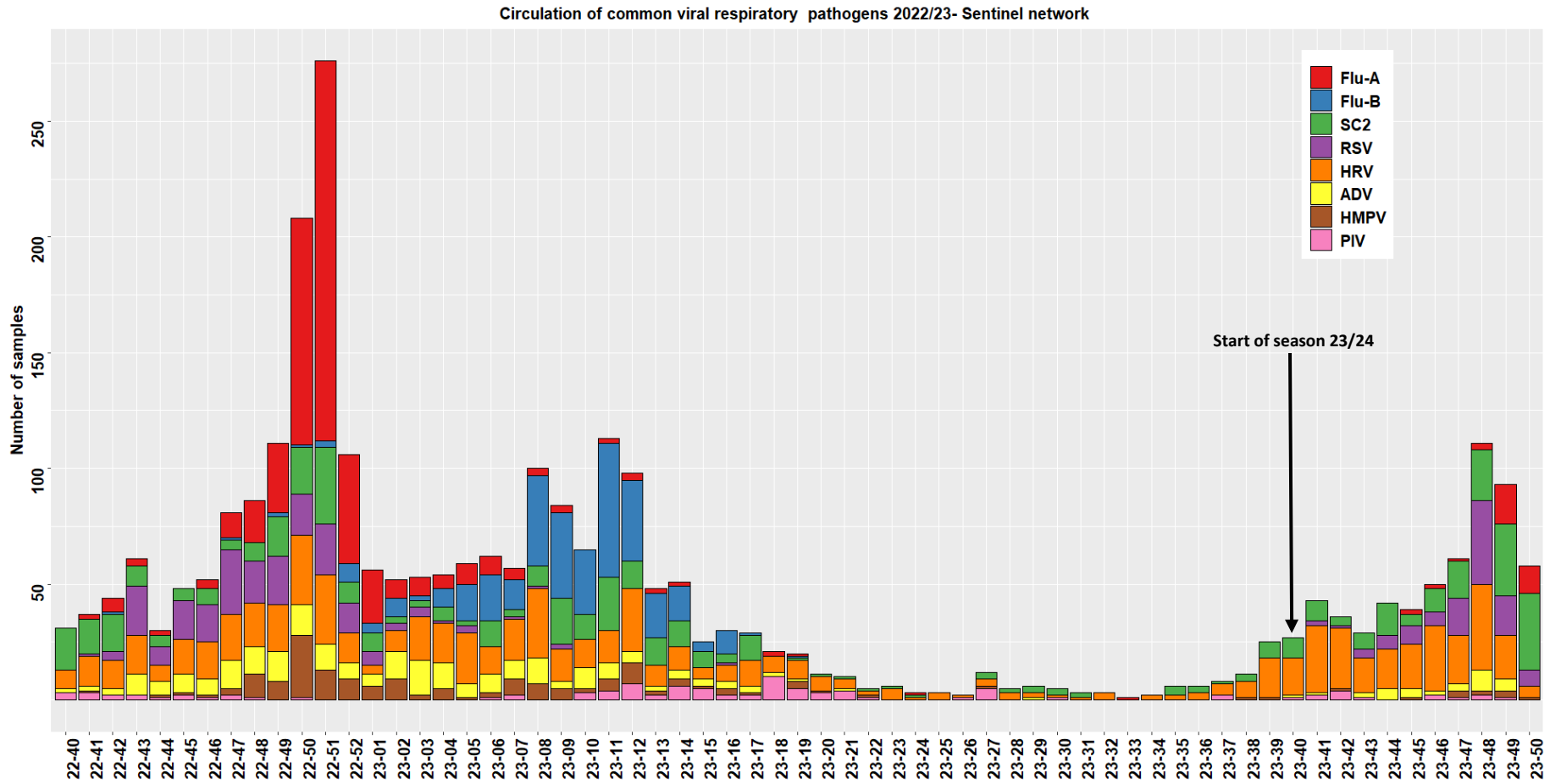
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Figure 2. Distribution of respiratory viruses detected within the Sentinel Network, by calendar week. Results from last weeks are not yet consolidated.
FLU-A: influenzavirus A; FLU-B: influenzavirus B; PIV: parainfluenzavirus; RSV: respiratory syncytial virus; ADV: adenovirus; MPV: metapneumovirus; HRV: human rhinovirus; SC2: SARS-CoV-2.

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

Virus	Season 2023/24					Season 2022/23
	Positivity Rate in %					
	w47	w48	w49	w50	Trend	w50
SARS-CoV-2	20.3	18.6	20.7	24.4	↑	8.5
Respiratory syncytial virus	20.5	30.8	17.0	11.3	↓	8.8
Influenzavirus A	1.3	2.5	11.3	8.9	↑	41.7
Human rhinovirus	26.9	31.6	19.0	8.1	↓	14.7
Metapneumovirus	3.8	1.7	3.0	1.6	→	13.2
Adenovirus	3.8	7.7	5.0	0.0	↓	6.4
Parainfluenzavirus	1.3	1.7	1.0	0.0	↓	0.5
Influenzavirus B	0.0	0.0	0.0	0.0	→	0.4

*Co-detection counted once for each virus detected.

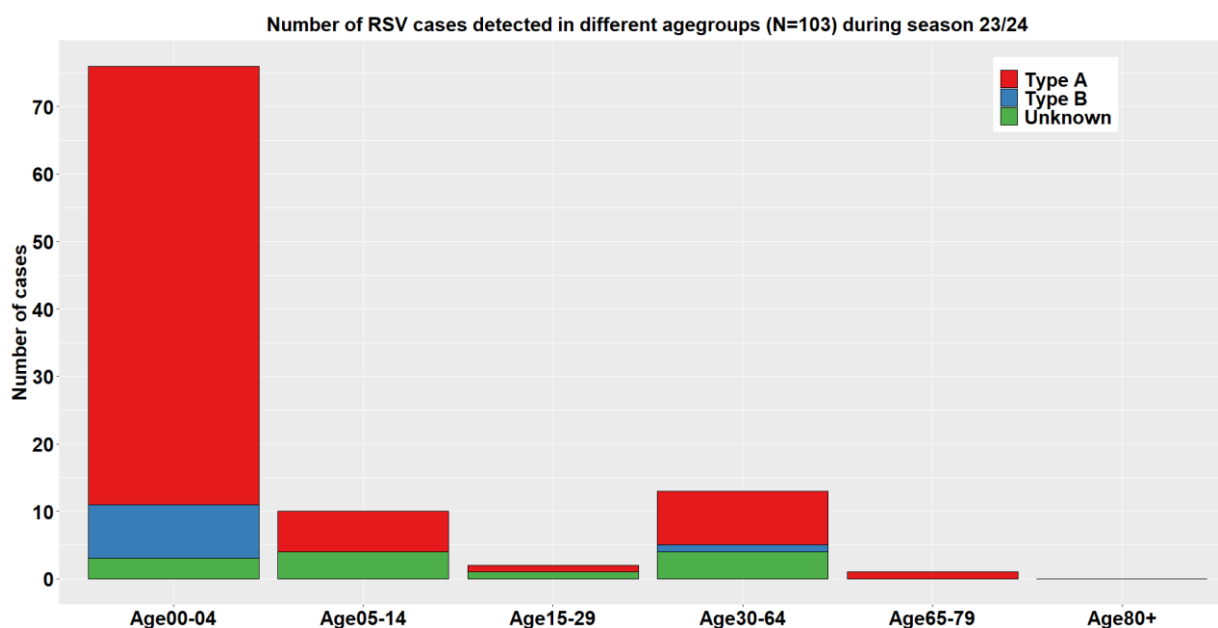Number of RSV cases detected in different agegroups (N=103) during season 23/24

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