Respiratory Viruses in Luxembourg (ReViLux)

Report – Sentinel Week 09 and Sequencing Update

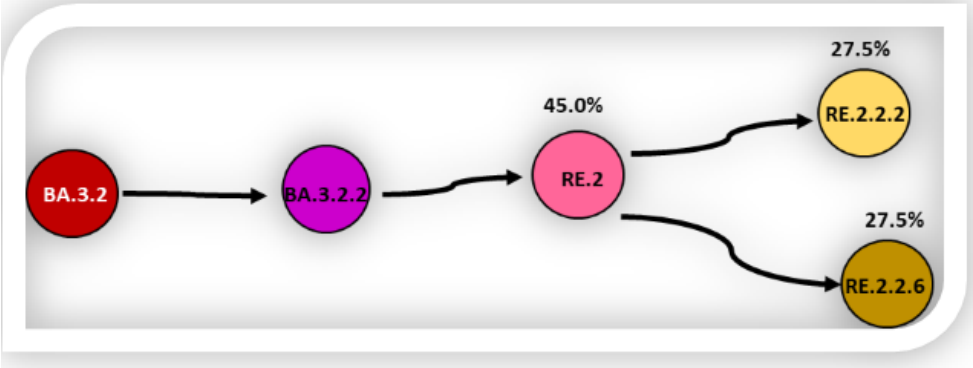
Summary

In week **2026/09**, consultations for acute respiratory infections **(ARI)** remained above **10%**, while influenza-like illness **(ILI)** activity decreased to ECDC-defined baseline levels (**2.1%**).

During week 2026/09, the LNS received 73 sentinel specimens, with an overall viral positivity of 56.2%. **Influenza A (15.1%)** and **human rhinovirus (14.1%)** were the most frequently detected pathogens. Influenza A activity increased to 15.1% compared with 4.2% in week 2026/08, affecting patients under 65 years; subtyping showed a predominance of A(H3). S**ARS-CoV-2** positivity remained stable at **4.1%**, mainly detected in adults. **RSV** detection declined to **5.6%**, with RSV-B identified in most cases. Human rhinovirus and **human metapneumovirus (11.3%)** were observed across all age groups, while **adenovirus (9.9%)** was mostly detected in children under five years.

Variants of SARS-CoV-2 detected from weeks 2026/02-2026/05

The most common variant detected during this monitoring period was XFG* (46.6%, including 10.1% identified as XFG.3), closely followed by BA.3.2 (25.2%) and NB.1.8.1 (24.5%). Minor variants were detected at lower frequencies, with JN.1 observed at low level (1.3%), while KP.3 was not detected.
The Figure below illustrates the emergence and distribution of BA.3.2 sub-lineages circulating in Luxembourg during this period.



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 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 called inter-season and monitoring is done on a voluntary basis.

Clinical results

Between week 2026/08 and week 2026/09, total consultations increased noticeably after the school holidays, but fewer patients reported respiratory illnesses. ARI cases remained almost unchanged, yet the proportion decreased from 16.2% to 13.0%. In contrast, ILI rates decreased from 6.7% to 2.1%, returning to ECDC-defined baseline levels.

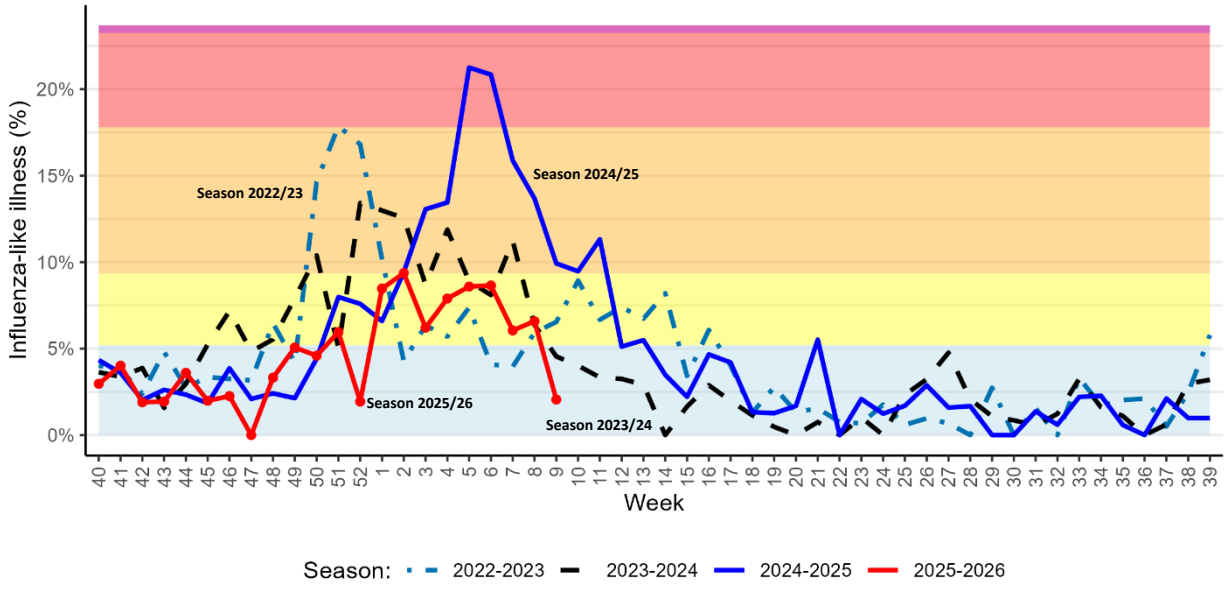
Historical trends in ILI consultations are presented in Figure 2, and a detailed summary of the ARI and ILI case counts for the past four weeks is provided in Table 1.

Table 1. Syndromic surveillance over the last 4 weeks

Week	ARI		ILI		Total consultations
	N	%	N	%	
2026/06	68	12.78	46	8.65	532
2026/07	44	15.66	17	6.05	281
2026/08	37	16.23	15	6.58	228
2026/09	38	13.01	6	2.05	292

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 week 2026/09, the LNS received 73 sentinel specimens. Of these, 38.4% (N=28) originated from children under 5 years of age, followed by 34.3% (N=25) from adults aged 18 to 64 years. Children aged 5 to 17 years accounted for 21.9% (N=16), while patients aged ≥ 65 years represented 5.5% (N=4). Overall, 60.3% (N=44) of samples were obtained from male and 39.7% (N=29) from female patients.

Respiratory viruses were detected in 41 (56.2%) of the 73 sentinel samples. The most frequently detected pathogen was **influenza A (15.1%)**, followed closely by **human rhinovirus (14.1%)**. Notably, influenza A positivity increased from 4.2% in week 2026/08 to 15.1% in week 2026/09, coinciding with the end of the school holidays and driven largely by a shift in the age distribution of submitted specimens. All influenza A cases reported in week 2026/09 were detected in patients < 65 years of age. Of the 11 influenza A cases identified, 8 (72.7%) were subtyped. Among these, 87.5% (N=7) were characterized as A(H3) and 12.5% (N=1) as A(H1)pdm09.

SARS-CoV-2 positivity remained stable at **4.1%**, affecting predominantly adults. RSV detection decreased to 5.6% following the school holidays. Four cases were detected: 2 in children ≤ 5 years of age and two cases > 60 years. Three of the four RSV cases were subtyped as RSV-B, while the remaining case was classified as RSV-A.

During the same period, human rhinovirus and metapneumovirus have been detected in all age-groups, whereas adenovirus were primarily detected in children under 5 years of age. An

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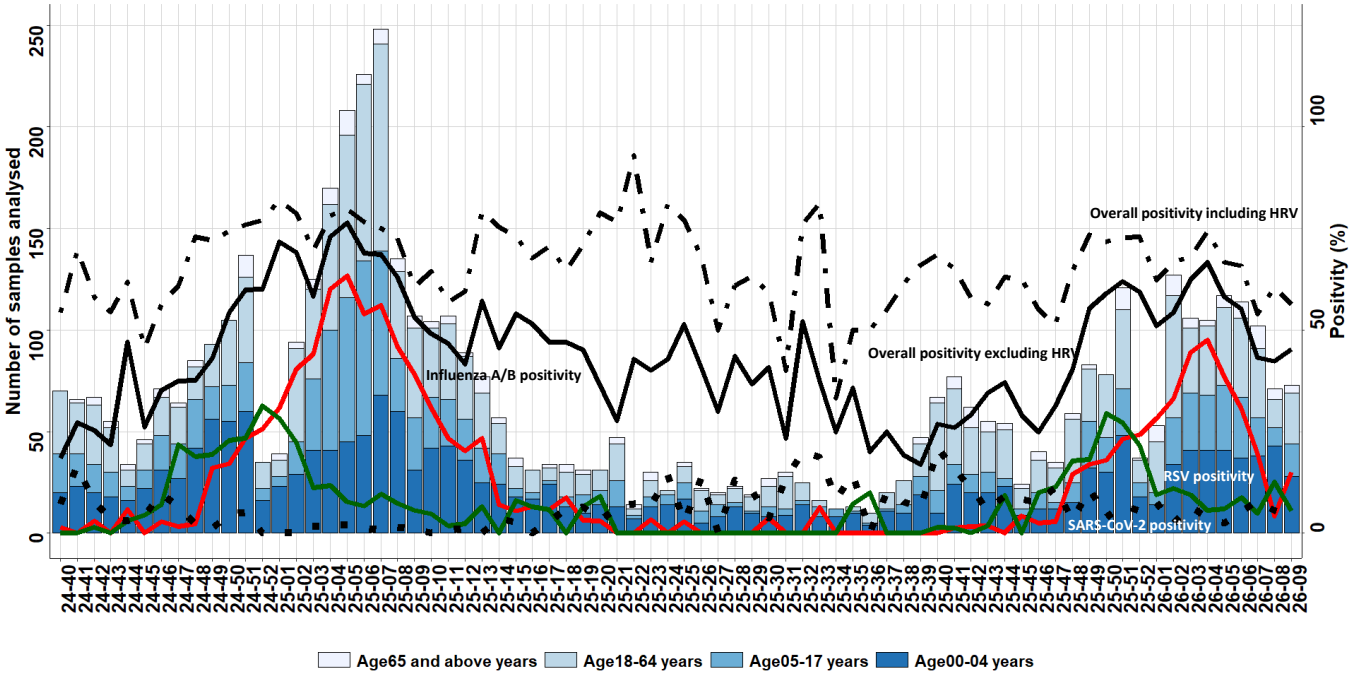
overview of the circulating viral pathogens in the Luxembourg sentinel network for the current and preceding (inter)- season is presented in Figure 2, 3 and Table 2.

Table 2. Distribution of respiratory viruses detected within the Sentinel Network over the past 4 weeks compared to previous season; Results from last weeks are not all yet consolidated.

Virus	Season 2025/26					Season 2024/25		
	Positivity Rate in %							
	W06	**W07**	**W08**	**W09**	**Total N (%)**	**W08**	**W09**	**Total N (%)**
Influenzavirus A	30,7	19,8	4,2	15,1	348 (20,9)	12,6	19,6	502 (17,2)
Human rhinovirus	21,9	18,8	23,9	14,1	391 (23,6)	17,0	15,9	720 (24,8)
Metapneumovirus	10,5	6,9	11,3	11,3	86 (5,2)	3,0	6,5	157 (5,4)
Adenovirus	1,8	7,9	9,9	9,9	96 (5,8)	7,4	4,7	203 (7,0)
Respiratory syncytial virus	8,8	5,0	12,7	5,6	176 (10,6)	7,4	5,6	287 (9,9)
SARS-CoV-2	5,3	7,8	5,6	4,1	116 (7,0)	1,5	0,9	80 (2,7)
Parainfluenzavirus	1,8	3,0	5,6	1,4	55 (3,3)	0,7	0,0	99 (3,4)
Influenzavirus B	0,0	0,0	0,0	0,0	0 (0,0)	33,3	19,6	404 (13,9)

**Co-detection is counted once for each virus detected.*

*Figure 2. Presents number of sentinel samples received per week by age-group (weeks 2024/40 to 2026/09) 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; Results from last weeks are not all yet consolidated.*



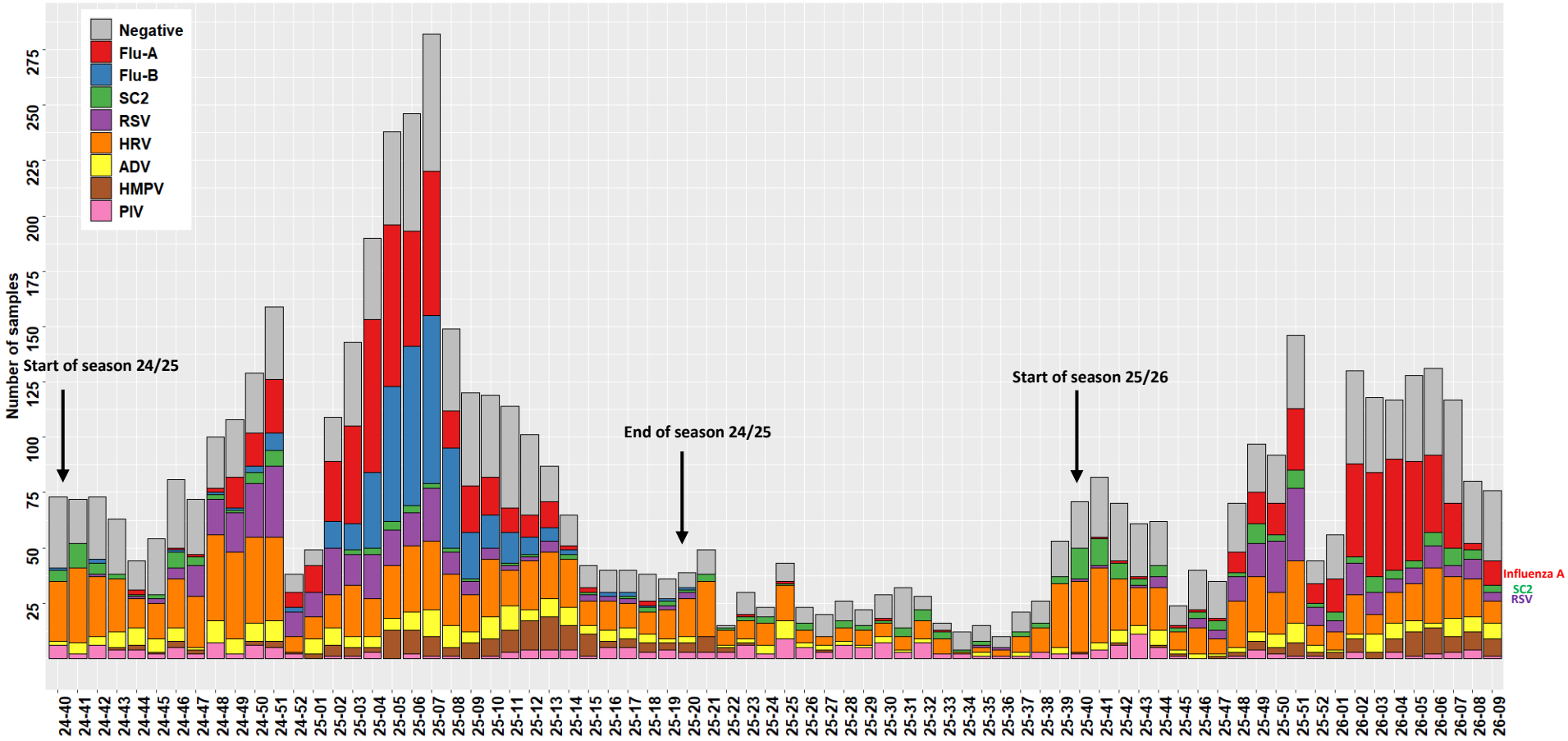


Figure 3. Circulation of respiratory viruses detected within the Sentinel Network by calendar week (seasons 24/25 and 25/26). FLU-A: influenzavirus A; FLU-B: influenzavirus B; PIV:parainfluenzavirus; RSV: respiratory syncytial virus; ADV: adenovirus; HMPV: metapneumovirus; HRV: human rhinovirus; SC2: SARS-CoV-2; Results from last weeks are not all yet consolidated.

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SARS-CoV-2 Genomic Surveillance

The LNS receives positive specimens (nasopharyngeal or oropharyngeal swabs analysed by RT-PCR) from the national network of laboratories. A selection of hospital specimens are sequenced, as well as a representative selection of community specimens. Illumina devices are used. Bioinformatic analyses are based on a standardised pipeline and lineage assignment is performed through the Pangolin software (Pangolin: 4.3.4; 1.37 mode UShER).

Sequencing activity

Of the 307 reported cases in Luxembourg, 159 samples (51.8%) were successfully sequenced. Specimen collection dates ranged from calendar weeks 02 to 05 of 2026. Among these, 21.4% (N=34) were obtained from hospital settings, while 78.9% (N=125) originated from the community. Sequencing efforts prioritized the most recent specimens and those from hospitalized patients. Any low coverage will be addressed in subsequent sequencing runs.

Variant circulation

Over the past 18 months, SARS-CoV-2 variant JN.1 and its various sub-variants and recombinant forms have been dominant in Luxembourg. Since July 2025, XFG emerged as the dominant lineage, reaching a prevalence up to 90% in October 2025. It has since remained the most frequently detected variant in Luxembourg, with different sub-variants continuing to emerge (Figure 7).

In contrast, BA.3.2 was first detected in November 2025 and now accounts for up to one quarter of new detections in Luxembourg during weeks 2025/02-05. However, it is still unclear, whether it has a growth advantage over other circulating variants.

NB.1.8.1, first detected in April 2025 in Luxembourg continues to circulate.

At this time there is no indication, that NB.1.8.1, XFG, or BA.3.2 cause more severe infections.

A summary of all circulating variants identified in the selected sample, including those listed by WHO variants under monitoring, is provided in Table 4 and Figure 6.

Among hospital patients (N=34) approximately 30% of the sequenced samples were from individuals aged > 75 years. In contrast, more than 90% of community cases were from patients aged ≤ 75 years. Overall, in this selected cohort (N=159), females accounted for 60% in both settings.

Table 3 compares sampling setting and variant prevalence over the past four weeks. Notably, only a limited number of samples were received from hospitals, indicating that most cases were detected in the community.

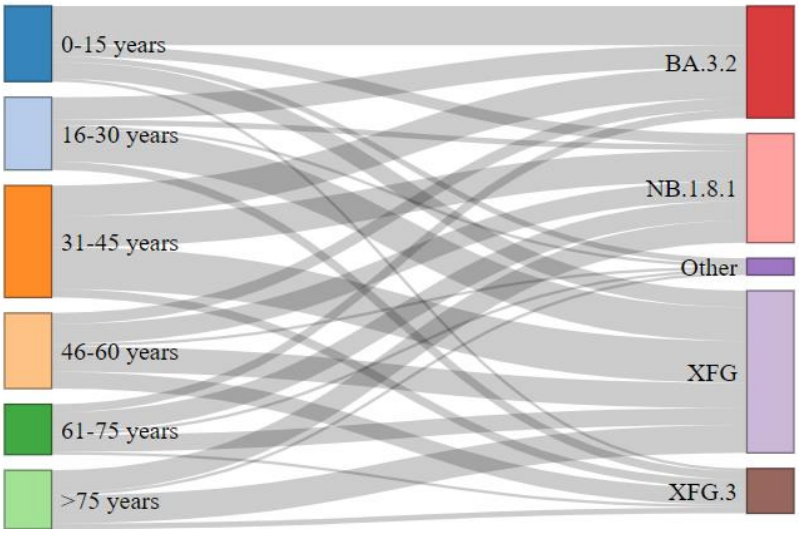
Table 3. Comparison of sub-variants by sampling setting

Comparison of variant detection during weeks 2026/02-05		
Lineage	**Community (N=125)**	**Hospital (N=34)**
XFG	**62 (49.6%)**	**12 (35.3%)**
NB.1.8.1	**28 (22.4%)**	**11(32.4%)**
BA.3.2	**31 (24.8%)**	**9 (26.5%)**
Other	**4 (3.2%)**	**2 (5.9%)**

*Table 4. Distribution of SARS-CoV-2 lineages detected during weeks 2025/50 to 2026/05; Previously reported cases might be updated by retrospective analysis; *JN.1 and XFG* excludes sub-variants listed in Table.*

Lineage	First detection in Luxembourg	Under WHO monitoring	weeks 50-01 (N=139)		weeks 02-05 (N=159)	
			%	CI %	%	CI %
XFG*	13.03.2025	yes	28.8	21.4 – 37.1	36.5	29.0 – 44.5
BA.3.2	**11.11.2025**	**yes**	**17.3**	**11.4 – 24.6**	**25.2**	**18.6 – 32.6**
NB.1.8.1	07.04.2025	yes	32.4	24.7 – 40.8	24.5	18.1 – 32.0
XFG.3	22.04.2025	under XFG	16.6	10.8– 23.8	10.1	5.9 – 15.8
Other	not applicable	no	5.0	2.1 – 10.1	2.5	0.6 – 6.3
JN.1*	25.08.2023	yes	0.0		1.3	0.2 – 4.5
KP.3	03.04.2024	yes	0.0		0.0	

Figure 5. Distribution of XFG, XFG.3, NB.1.8.1 and Other detected during weeks 2026/02 to 2026/05 (N=159) by age groups



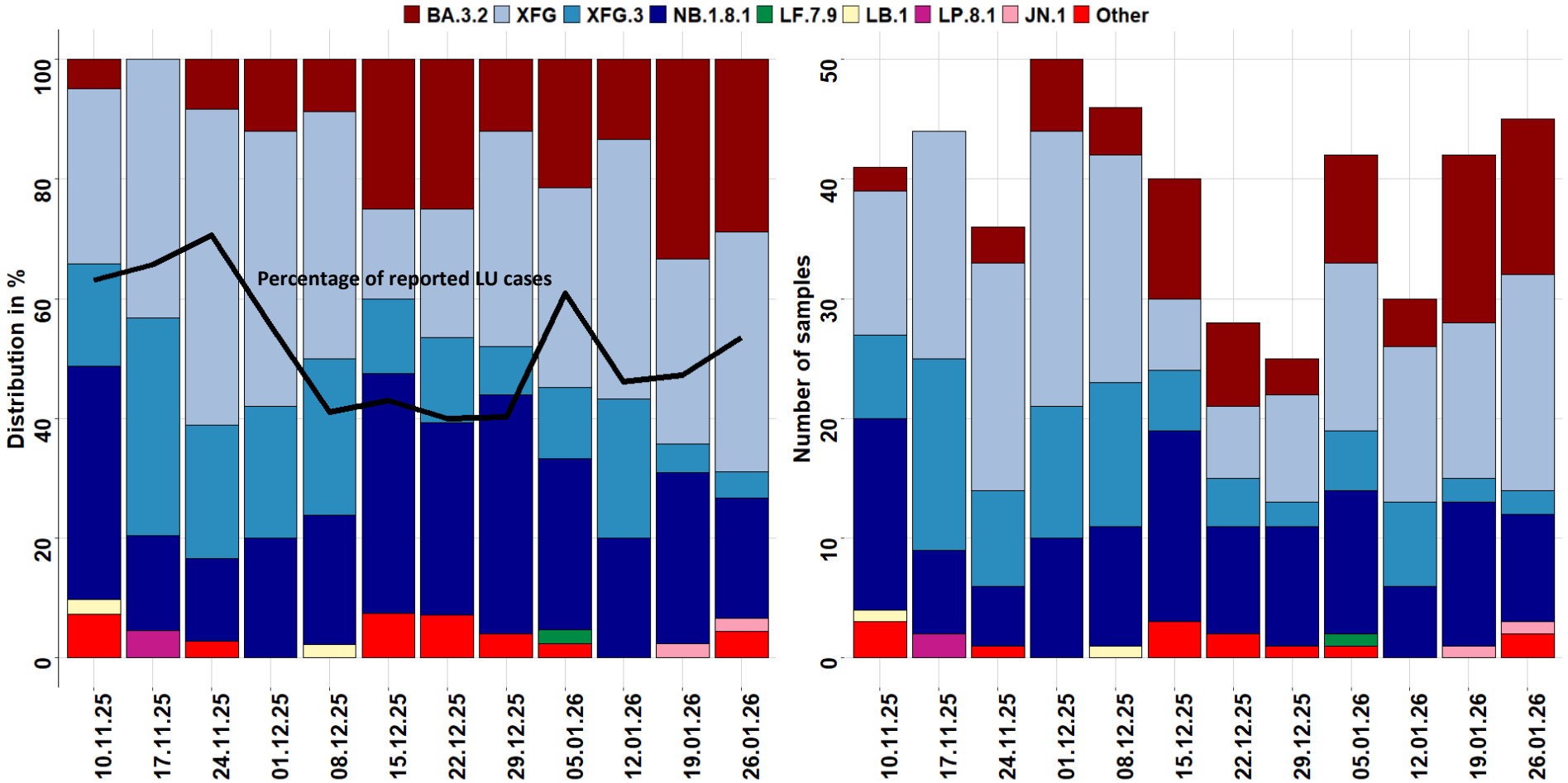


Figure 6. Lineage distribution and sequencing coverage from week 2025/46 (10.11.2025) to week 2026/05 (26.01.2026) in weekly intervals; All displayed variants include descendant lineages- except those specified on the legend. Other: recent cases-recombinant XFC, and XGA; during this period no further KP.3 cases have been detected

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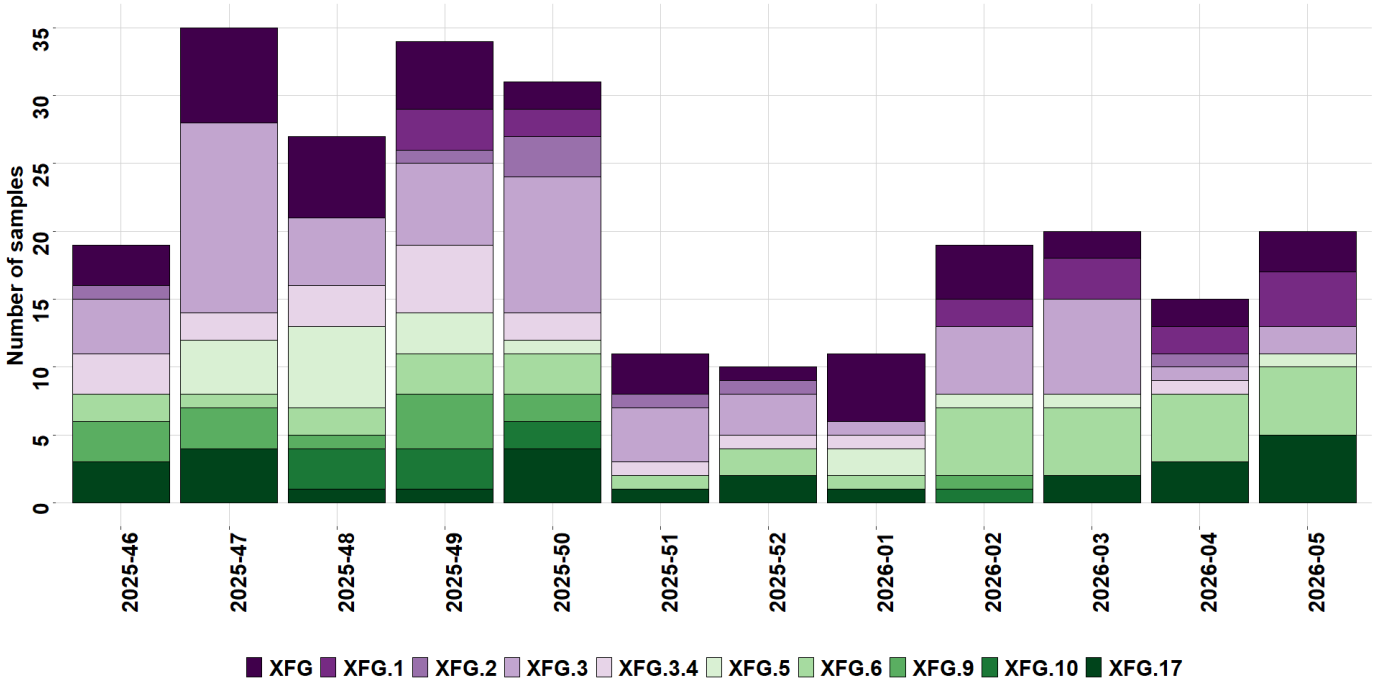
Figure 7. Number of selected XFG sub-variants circulating in Luxembourg over the past 12 weeks, illustrating the diversity within XFG.



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