



## Changing Patterns of Viral Respiratory in Albania: Laboratory Findings from March 2025 to June 2026

Migena Nezha<sup>1,2</sup>, Anila Mitre<sup>1,2</sup>

<sup>1</sup>University of Tirana, Faculty of Natural Sciences, Department of Biology, Tirana, Albania

<sup>2</sup>Intermedica Clinic

**ABSTRACT:** Background: Seasonal influenza is a major cause of acute respiratory infections, with activity typically increasing during the colder months. Because influenza and other respiratory viruses cause similar symptoms, laboratory testing is essential for accurate pathogen identification and appropriate clinical management. Objective: To characterize the distribution and monthly patterns of laboratory-confirmed respiratory viruses from March 2025 to June 2026, and to place these findings in the context of two previous local studies. Methods: We conducted a descriptive analysis of 1,863 laboratory test records. As in the previous research, initial screening for respiratory antigens was followed by molecular confirmation of positive samples. Results: At least one virus was identified in 467 tests (25.1%): 463 cases tested positive for a single virus, and four cases involved more than one virus. Influenza A was the most frequently identified virus (207 cases), followed by SARS-CoV-2 (80), adenovirus (71), RSV (42), influenza B (38), hMPV (23), and parainfluenza virus (2). Conclusions: Influenza A was the most frequent virus among cases that tested positive for a single virus. Influenza A and RSV peaked during the winter, influenza B was identified primarily during the colder months, SARS-CoV-2 showed an increase during the summer and early autumn, while adenovirus was identified throughout the entire study period. Age-specific results demonstrated a marked concentration of several respiratory viruses among children aged 0–10 years.

**KEYWORDS:** respiratory viruses, laboratory analysis, molecular testing, Albania

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*\*Corresponding Author:* Migena Nezha

### INTRODUCTION

Acute respiratory infections are caused by a variety of viruses that often present with similar clinical symptoms, such as fever, cough, fatigue, and difficulty breathing. Influenza viruses (types A and B), severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), respiratory syncytial virus (RSV), adenoviruses, human metapneumovirus (hMPV), and parainfluenza viruses can all circulate during the same period. Since these infections cannot always be distinguished based only on clinical presentation, laboratory testing plays a key role in identifying the causative pathogens and characterizing the detection patterns of respiratory viruses <sup>1,2,8</sup>. Influenzas typically causes seasonal outbreaks, while SARS-CoV-2 has continued to circulate even outside the periods traditionally associated with influenza <sup>2,5</sup>.

Laboratory methods are crucial for distinguishing between respiratory viruses that cause similar illnesses. Antigen-based tests are frequently used for initial screening, while molecular methods allow for more sensitivity identification of viral targets. Multiplex molecular assays enable testing for multiple respiratory pathogens using a single specimen, making it possible to identify more than one virus within the same sample <sup>6,8</sup>. The viruses identified in a sample depend, in part, on the diagnostic method used and the pathogens included in the testing panel.

The aim of this study is to describe the distribution of respiratory viruses, identify monthly peaks, and characterize the demographic composition of positive laboratory records.

### MATERIALS AND METHODS

This retrospective observational study included 1,863 laboratory test records from patients with suspected respiratory viral infections between March 2025 and June 2026. For each patient, a questionnaire was completed to collect information on clinical symptoms, based on the clinical assessment provided by the referring physician.

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Respiratory specimens were initially screened using antigen-based assays for SARS-CoV-2, influenza A and B, respiratory syncytial virus (RSV), adenovirus, human metapneumovirus (hMPV), and parainfluenza viruses. Positive screening results were subsequently confirmed using the EUROArray PneuVir molecular assay (EUROIMMUN, Germany)<sup>14</sup>.

Laboratory results were analysed according to viral type, age, sex, and testing period. Patients were classified into eight age groups: 0–10, 11–20, 21–30, 31–40, 41–50, 51–60, 61–70, and ≥71 years, consistent with the previous investigation. Descriptive statistical analysis was performed using frequencies and percentages to summarize viral detections and their distribution across demographic groups and study periods.

### RESULTS

Among 1,863 laboratory test records collected between March 2025 and June 2026, 467 (25.1%) contained at least one positive result and 1,396 (74.9%) were negative. The records demonstrated a nearly uniform distribution across sexes: 942 (50.6%) female and 921 (49.4%) males (Table 1).

**Table 1. Overview of test records and viral counts among 463 single-virus-positive records; four mixed-virus-positive records are excluded from these virus-specific counts.**

| Characteristic   | n (%)        | Virus       | Detections |
|------------------|--------------|-------------|------------|
| Test records     | 1,863 (100)  | Influenza A | 207        |
| Positive records | 467 (25.1)   | SARS-CoV-2  | 80         |
| Negative records | 1,396 (74.9) | Adenovirus  | 71         |
| Female records   | 942 (50.6)   | RSV         | 42         |
| Male records     | 921 (49.4)   | Influenza B | 38         |

Of the 467 positive records, 463 contained one virus and four contained more than one virus. Influenza A was the most frequently detected virus among single-virus-positive samples (207 cases), followed by SARS-CoV-2 (80), adenovirus (71), RSV (42), influenza B (38), hMPV (23), and PIV (2) (Table 1). The four mixed-virus-positive records comprised one influenza A/influenza B, two hMPV/adenovirus, and one adenovirus/RSV. The distribution of single-virus-positive records is summarized Figure 1.

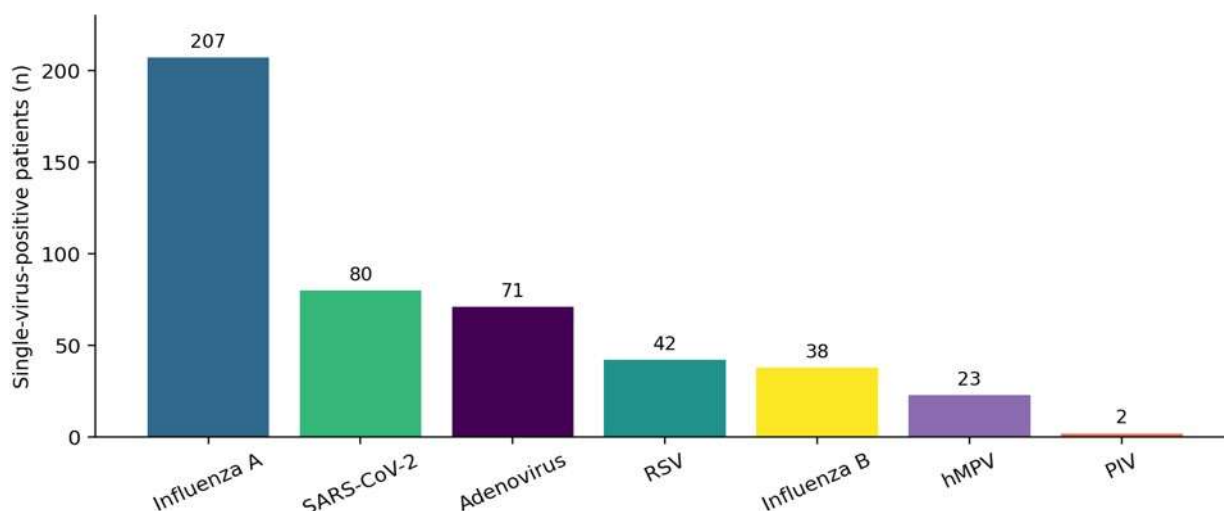


**Figure 1. Distribution of 463 single-virus-positive records by detected virus, March 2025–June 2026. Four mixed-virus-positive records are excluded from these virus-specific counts.**

Influenza A demonstrated a pronounced winter pattern, with a substantial increase during December 2025–February 2026, rising from (18) detected cases in December 2025 to (106) in January 2026 and (68) in February 2026. Influenza B was also concentrated during colder months, although a high number of detections was observed in March 2025, when (35) cases were recorded. In contrast, SARS-CoV-2 showed increased activity during summer and early autumn 2025, particularly in August (29) and September (26), followed by a significant decline. No SARS-CoV-2 cases were recorded after January 2026. RSV activity increased mainly during the November 2025–February 2026 period, reaching (12) detected cases in both November and December. Adenovirus was detected throughout the observation period, with peaks in February 2026(14) and June 2026(10). hMPV was detected less frequently and showed increased activity during the period from February to April 2026. Only two cases with parainfluenza were identified, indicating a sporadic occurrence during the study period (Figure 2).

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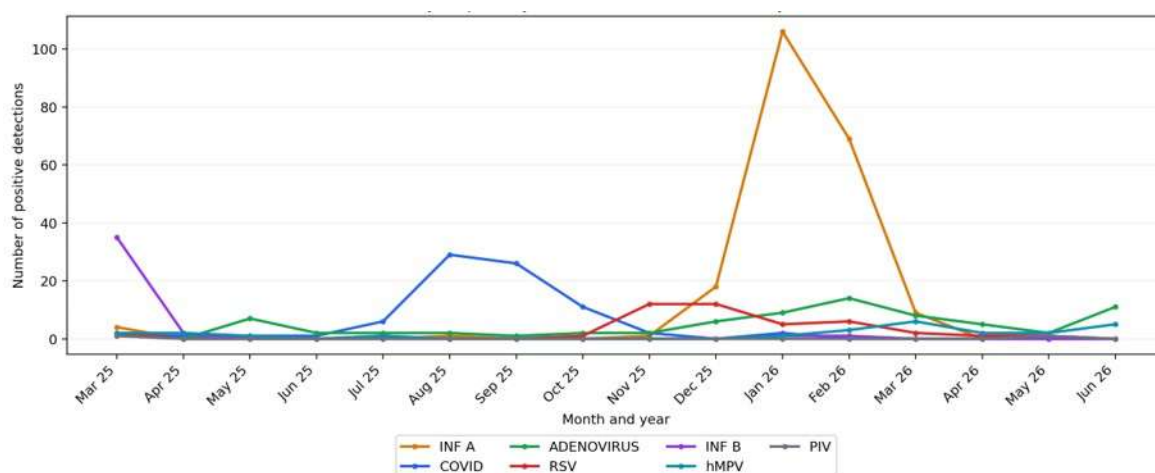


**Figure 2. Monthly respiratory viral detections, March 2025–June 2026**

Age-specific results demonstrated a marked concentration of several respiratory viruses among children aged 0–10 years. Among the most recent available records, this age group accounted for 160 influenza A, 29 influenza B, 63 adenovirus, 41 RSV, and 21 hMPV detections. SARS-CoV-2 showed a broader age distribution, including detections among adults, although infections were also recorded among children.

## DISCUSSION

Previous laboratory research in Albania has shown variations in the detection of respiratory viruses across different observation periods. In conference proceedings covering the period from January 2023 to January 2024, Nezha and Mitre reported 292 samples testing positive for SARS-CoV-2, compared to 100 cases of influenza A and 39 cases of influenza B. The reported findings also varied according to the month and gender<sup>3</sup>. In a followup report covering the period from January 2023 to February 2025, the authors presented a series of subsequent tests, which included 1,690 samples collected during 2024 and early 2025. Influenza A was the most frequently identified virus, with 346 cases, followed by Influenza B with 130 cases and SARS-CoV-2 with 44 cases. The report also documented 14 cases of RSV, 9 adenovirus, and 8 hMPV<sup>4</sup>. The two Albanian reports showed differences in the number of laboratory-confirmed cases of SARS-CoV-2, influenza A, and influenza B during the reported periods<sup>3,4</sup>.

The predominance of Influenza A aligns with a previous Albanian report covering 2024 and early 2025, in which Influenza A was the most frequently reported virus, followed by Influenza B and SARS-CoV-2<sup>4</sup>. This pattern differs from that observed in a report covering the period from January 2023 to January 2024, when detections of SARS-CoV-2 exceeded those of Influenza A and Influenza B<sup>3</sup>. The three reports indicate that the most frequently detected respiratory viruses varied across the observation periods; SARS-CoV-2 predominated in the first report, while influenza A was more prevalent in the subsequent reports. Only four samples contained more than one respiratory virus: one case of Influenza A/Influenza B, two cases of hMPV/adenovirus, and one case of adenovirus/RSV.

There are also studies from neighbouring countries within the same regional context. In Serbia, Dimitrijevic et al. analysed the burden of severe disease during the 2023–2024 season by combining epidemiological and virological data from hospitals<sup>9</sup>. Ristić et al. also investigated acute respiratory infections among patients in Serbia during the 2023–2024 and 2024–2025 seasons, examining the detection of SARS-CoV-2, influenza A, influenza B, and RSV<sup>10</sup>. They reported a shift in the predominant influenza type between the two seasons, with influenza A predominating in 2023–2024 and influenza B in 2024–2025. Evidence from Greece further illustrates the importance of considering the observation period and the characteristics of the study population. Berikopoulou et al. examined the epidemiology of RSV among hospitalized children before, during, and after COVID-19 lockdown restrictions<sup>11</sup>. Their findings documented shifts in RSV detection and the timing of seasonal activity throughout the period. In North Macedonia, Popova et al. investigated the use of multiplex polymerase chain reaction (PCR) testing for respiratory tract infections in hospitalized children<sup>12</sup>. Their study highlights the value of molecular testing for identifying respiratory pathogens that might not be distinguishable based on clinical presentation alone. The World Health Organization recommends integrated surveillance approaches that include systematic identification of symptomatic patients, collection of respiratory specimens and laboratory testing for influenza, SARS-CoV-2, RSV and other respiratory viruses<sup>13</sup>.

The distribution of the study population by gender was balanced, with females accounting for 50.6% and males for 49.4%. The predominance of several viruses among children aged 0–10 years is also notable. This was particularly evident for influenza A, adenovirus, RSV and hMPV. The findings emphasize the importance of maintaining respiratory-virus testing among symptomatic children, in whom several respiratory pathogens may produce overlapping clinical presentations.

### CONCLUSION

The findings of this study highlight the importance of laboratory testing in distinguishing respiratory viruses with similar clinical presentations and identifying the most frequently detected pathogens. Continued clinical and laboratory surveillance is essential for monitoring changes in viral circulation and supporting timely public health responses in Albania.

### REFERENCES

1. Moriyama M, Hugentobler WJ, Iwasaki A. Seasonality of respiratory viral infections. *Annu Rev Virol.* 2020;7:83–101. [https://doi.org/10.1146/annurev-virology-012420-022445](https://doi.org/10.1146/annurev-virology-012420-022445) [https://doi.org/10.1146/annurev-virology-012420-022445].
2. Uyeki TM, Hui DS, Zambon M, Wentworth DE, Monto AS. Influenza. *Lancet.* 2022; 400:693–706. [https://doi.org/10.1016/S0140-6736(22)00982-5] (https://doi.org/10.1016/S0140-6736\ (22\ )00982-5).
3. Nezha M, Mitre A. Study through molecular techniques of viral respiratory infections of SARS-CoV-2, RSV, influenza A and influenza B during Jan 2023–Jan 2024 in a group population of Albania. In: *Proceedings of ICSEST 2024.* 2024. p. 332–339. ISBN:978-1-952092-71-8
4. Nezha M, Mitre A. Trends and comparative analysis of respiratory infections in Albania: from January 2023 to February 2025. *Int J Curr Res.* 2025;17(8):34146–34148. [https://doi.org/10.24941/ijcr.49313.08.2025] (https://doi.org/10.24941/ijcr.49313.08.2025).
5. Luštrek M, Cesar Z, Suljić A, et al. Influenza A, influenza B, human respiratory syncytial virus and SARSCoV-2 molecular diagnostics and epidemiology in the post COVID-19 era. *Respir Res.* 2024; 25:234. [https://doi.org/10.1186/s12931-024-02862-7] (https://doi.org/10.1186/s12931-024-02862-7).
6. Domnich A, Massaro E, Icardi G, Orsi A. Multiplex molecular assays for the laboratory-based and point-of-care diagnosis of infections caused by seasonal influenza, COVID-19, and RSV. *Expert Rev Mol Diagn.* 2024;24(11):997–1008. [https://doi.org/10.1080/14737159.2024.2408745] (https://doi.org/10.1080/14737159.2024.2408745).
7. Bernknopf AC, Koski RR, Konieczny AM, Coveyou JA, Klepser ME. Multiplex CLIA-waived point-of-care tests for SARS-CoV-2, influenza A and B, ± other respiratory pathogens: a systematic review. *J Am Pharm Assoc.* 2024;64(4):102090. [https://doi.org/10.1016/j.japh.2024.102090] (https://doi.org/10.1016/j.japh.2024.102090).
8. Farfour E, Yung T, Baudoin R, Vasse M. Evaluation of four fully integrated molecular assays for the detection of respiratory viruses during the co-circulation of SARS-CoV-2, influenza and RSV. *J Clin Med.* 2022;11(14):3942. [https://doi.org/10.3390/jcm11143942] (https://doi.org/10.3390/jcm11143942).
9. Dimitrijevic D, et al. Integrated sentinel surveillance of influenza, SARS-CoV-2, RSV and respiratory viruses in Serbia. *Eur J Public Health.* 2024;34(Suppl 3):1443. [https://doi.org/10.1093/eurpub/ckae144.1443] (https://doi.org/10.1093/eurpub/ckae144.1443).
10. Ristić M, Patić A, Miljković A, et al. Sentinel surveillance of acute respiratory infections and distribution of SARS-CoV-2, influenza A and B, and respiratory syncytial virus in the post-COVID-19 period. *Vojnosanit Pregl.* 2025;82(8):490–503. [https://doi.org/10.2298/VSP250402052R] (https://doi.org/10.2298/VSP250402052R).
11. Berikopoulou MM, et al. Epidemiology of respiratory syncytial virus in hospitalized children before, during, and after the COVID-19 lockdown restriction measures in Greece. *Epidemiol Infect.* 2024;152. [https://doi.org/10.1017/S0950268824000724] (https://doi.org/10.1017/S0950268824000724).
12. Popova G, Jakjovska T, Arnaudova-Danevska I, Boskovska K, Smilevska-Spasovska O. Multiplex PCR in diagnosing respiratory tract infections in hospitalized children. *Prilozi.* 2024;45(1):61–68. [https://doi.org/10.2478/prilozi-2024-0007] (https://doi.org/10.2478/prilozi-2024-0007).
13. World Health Organization. Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System. Geneva: WHO; 2024.
14. EUROIMMUN Medizinische Labordiagnostika AG. EUROArray PneuVir. Instructions for Use. Lübeck, Germany: EUROIMMUN.