

NATIONAL WEEKLY INFLUENZA BULLETIN OF THE RUSSIAN FEDERATION

week 20 of 2024 (13.05.24 - 19.05.24)

Summary.

Influenza and ARI incidence data. Influenza and other ARI activity in Russia increased in comparison with previous week. The nationwide ILI and ARI morbidity level (40.6 per 10 000 of population) was lower than national baseline (70.0) by 42.0%.

Etiology of ILI & ARI. Among 7101 patients investigation 70 (1.0%) respiratory samples were positive for influenza, including no cases of influenza A(H1N1)pdm09, no cases of influenza A(H3N2), 4 cases of untyped influenza A in 3 cities and 66 cases of influenza B in 17 cities.

No influenza viruses were isolated on MDCK cell culture. Since the beginning of the season 1150 influenza viruses were isolated on MDCK cell culture, including: 7 influenza viruses A(H1N1)pdm09, 1098 viruses A(H3N2) and 45 viruses B.

Antigenic characterization. Since the beginning of the season 751 influenza have been antigenically characterized by the NICs, including: 3 influenza A(H1N1)pdm09 viruses in Moscow (2) and Saint-Petersburg (1), 729 influenza A(H3N2) viruses in Moscow (186) and Saint-Petersburg (543) and 19 influenza B viruses in Moscow (8) and Saint-Petersburg (11). 2 influenza A(H1N1)pdm09 viruses were similar to the vaccine strain for the Northern Hemisphere countries for the 2023-2024 season A/Victoria/4897/22 (H1N1)pdm09, 1 strain was its drift variant; 478 influenza A(H3N2) viruses were antigenically similar to vaccine strain for the Northern Hemisphere countries for the 2023-2024 season A/Darwin/09/2021 and 251 viruses were a drift variant of the vaccine strain A/Darwin/09/2021 and reacted with antiserum to it in a reduced titer (1:8 and low). 12 influenza B viruses were antigenically similar to vaccine strain for the Northern Hemisphere countries for the 2023-2024 season A/Austria/1359417/2021 and 7 were its drift variants.

Genetic analysis. Since the beginning of the season 2023-2024, sequencing of 5 A(H1N1)pdm09 influenza isolates, 1364 influenza viruses and isolates from primary clinical materials from patients and 2 B influenza isolates were performed by NIC (Saint-Petersburg). According to phylogenetic analysis, 5 A(H1N1)pdm09 influenza isolates were assigned to genetic clade 6B.1A.5a.2a and similar to the vaccine strain A/Victoria/2570/2019, 1364 influenza A(H3N2) viruses were assigned to genetic clade 3C.2a1b.2a.2a.3a.1 and similar to the reference strain A/Thailand/08/2022, 1 virus was assigned to genetic clade 2a.3b and similar to the reference virus A/Sydney/732/2022, 2 B influenza isolates were assigned to genetic subclade 6B.1A.5a.2a and similar to the vaccine strain B/Austria/1359417/2021. All viruses were sensitive to neuraminidase inhibitors (oseltamivir, zanamivir).

Susceptibility to antivirals. Since the beginning of the season 2023-2024, the sensitivity of 509 influenza viruses to neuraminidase inhibitors (oseltamivir, zanamivir) was studied in two NICs (Moscow, Saint-Petersburg), including 508 A(H3N2) influenza viruses and 1 influenza B virus. All studied viruses were sensitive to neuraminidase inhibitors, except for one strain of A(H3N2) isolated in Moscow, which showed reduced sensitivity to oseltamivir.

ARVI detections. The overall proportion of respiratory samples tested positive for other ARVI (PIV, ADV, RSV, RhV, CoV, MPV, BoV) was estimated in total as 17.0% (PCR).

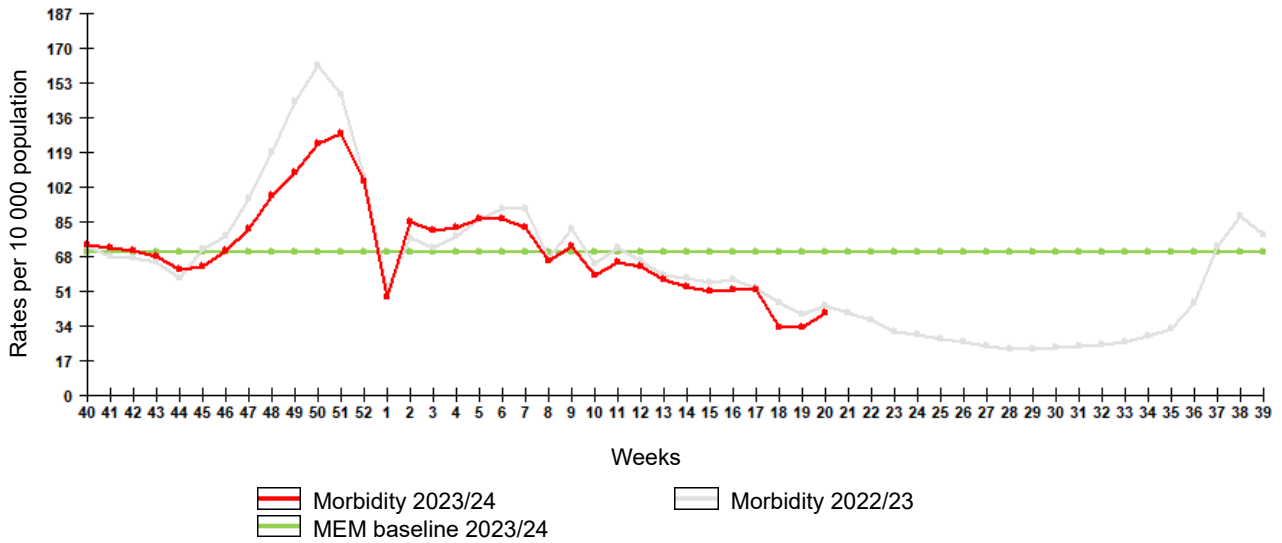
In sentinel surveillance system clinical samples from 75 SARI patients were investigated by rRT-PCR for influenza, among them 3 (4.0%) cases of influenza B were detected. Among 75 SARI patients no positive cases for SARS-CoV-2 were detected. Among 71 SARI samples 5 (7.0%) cases positive for ARVI were detected including: 2 cases of RhV and 3 cases of MPV infection.

Clinical samples from 43 ILI/ARI patients were investigated for influenza by rRT-PCR, among them 1 (2.3%) case of untyped influenza A was detected. Among 34 ILI/ARI samples 7 (20.8%) cases positive for ARVI were detected including: 1 case of PIV, 5 cases of RhV and 1 case of MPV infection. 1 (2.3%) of 43 SARI patients was positive for coronavirus SARS-CoV-2.

COVID-19. Totally 24 206 892 cases and 403 045 deaths associated with COVID-19 were registered in Russia including 11 550 cases and 8 deaths in week 20. According to the data obtained by NIC in Saint-Petersburg totally 7941 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 335 (4.2%) cases.

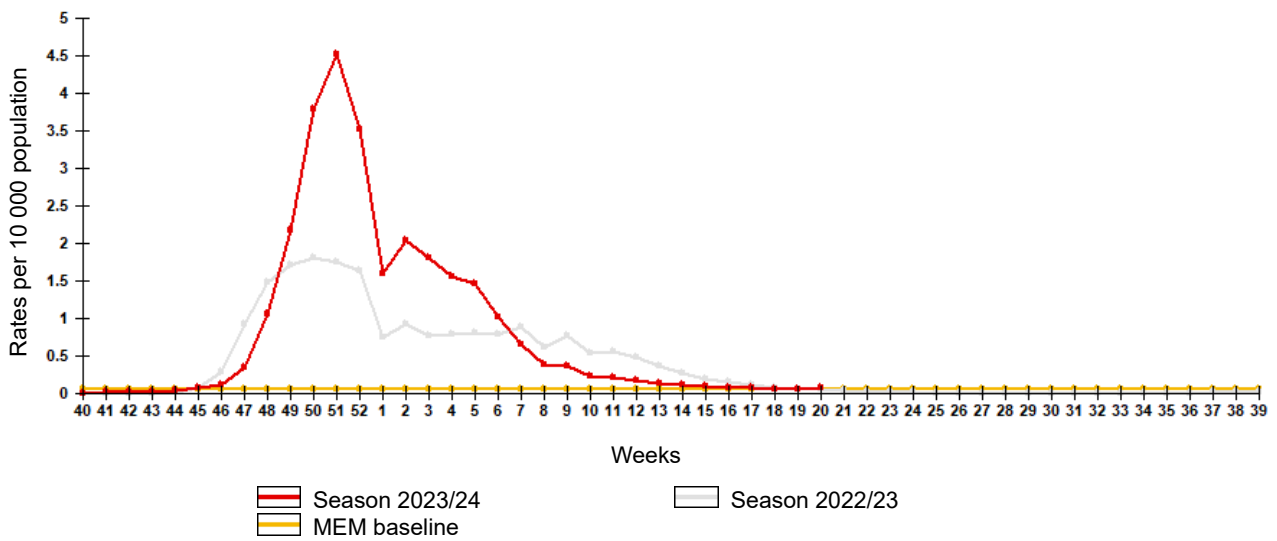
Influenza and ARI morbidity data

Fig. 1. Influenza and ARI morbidity in 61 cities under surveillance in Russia, seasons 2022/23 and 2023/24



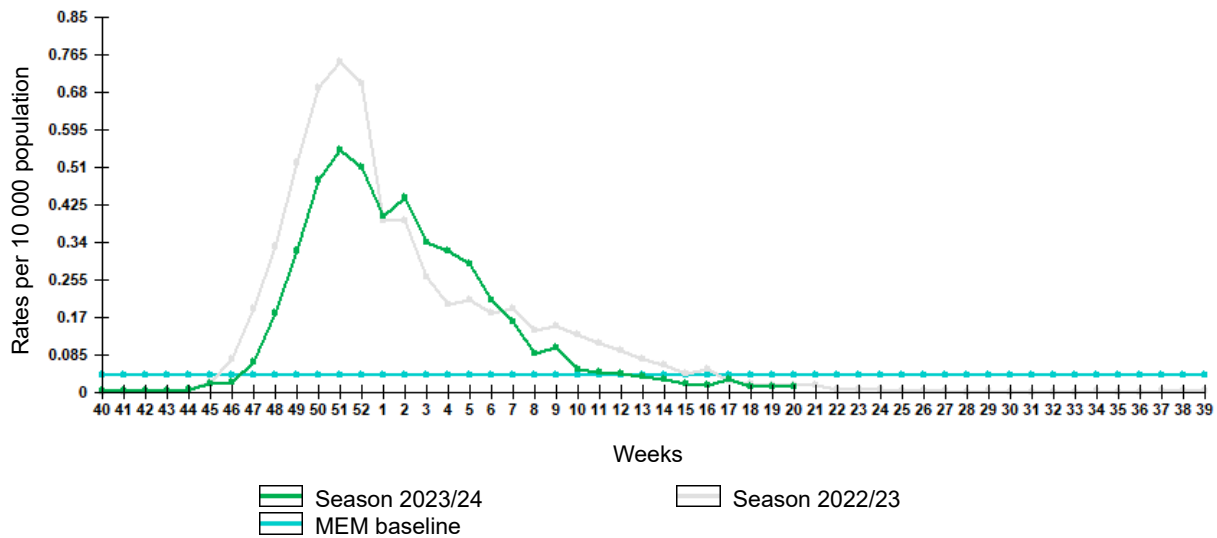
Epidemiological data increased of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (40.6 per 10 000 of population) was lower than national baseline (70.0) by 42.0%.

Fig. 2. Comparative data on incidence rate of clinically diagnosed influenza, seasons 2022/23 and 2023/24



Incidence rate of clinically diagnosed influenza increased comparing to previous week and amounted to 0.069 per 10 000 of population, it was higher than pre-epidemic MEM baseline (0.060).

Fig. 3. Comparison of hospitalization rate with clinical diagnosis of influenza, seasons 2022/23 and 2023/24



Hospitalization rate of clinically diagnosed influenza remained at the same level comparing to previous week and amounted to 0.014 per 10 000 of population, it was lower than pre-epidemic MEM baseline (0.040).

Influenza and ARVI laboratory testing results

Cumulative results of influenza laboratory diagnosis by rRT-PCR were submitted by 45 BBLs and two WHO NICs. According to these data as a result of 7101 patients investigation 70 (1.0%) respiratory samples were positive for influenza, including no cases of influenza A(H1N1)pdm09, no cases of influenza A(H3N2), 4 cases of unsubtype influenza A in 3 cities and 66 cases of influenza B in 17 cities.

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Fig. 4. Geographic distribution of RT-PCR detected influenza viruses in cities under surveillance in Russia, week 20 of 2024

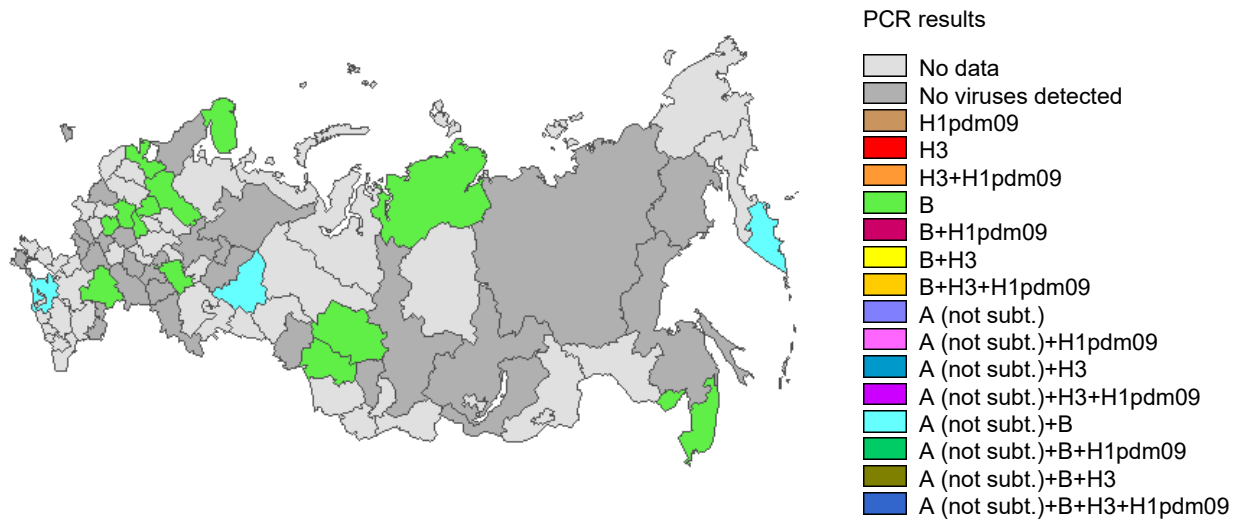


Fig. 5. Monitoring of influenza viruses detection by RT-PCR in Russia, season 2023/24

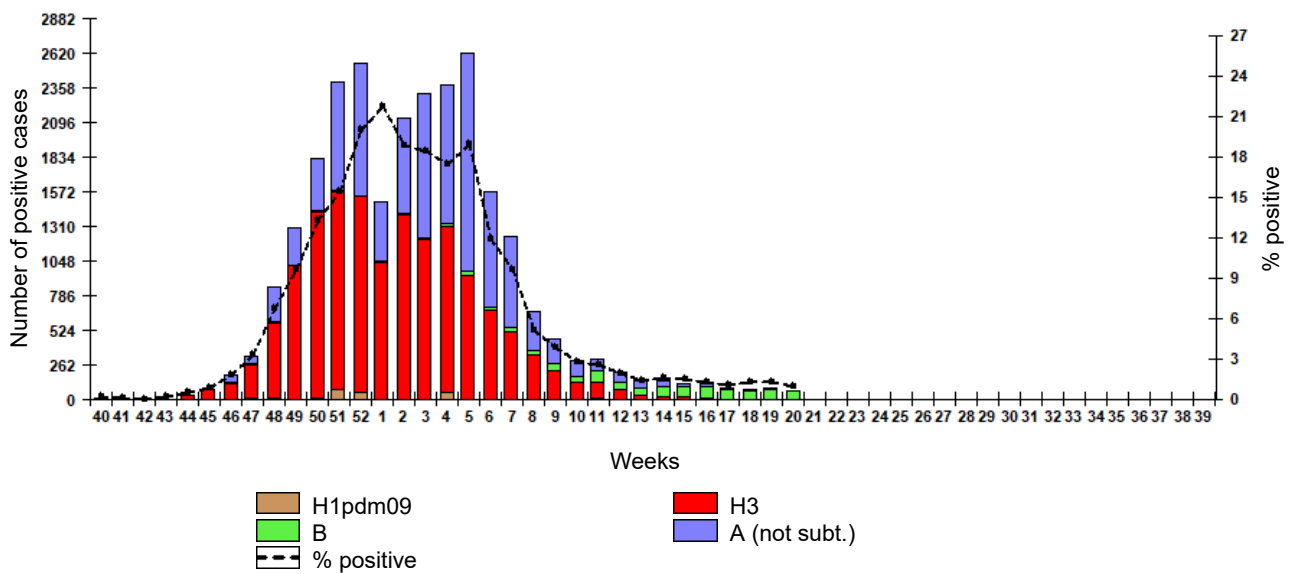
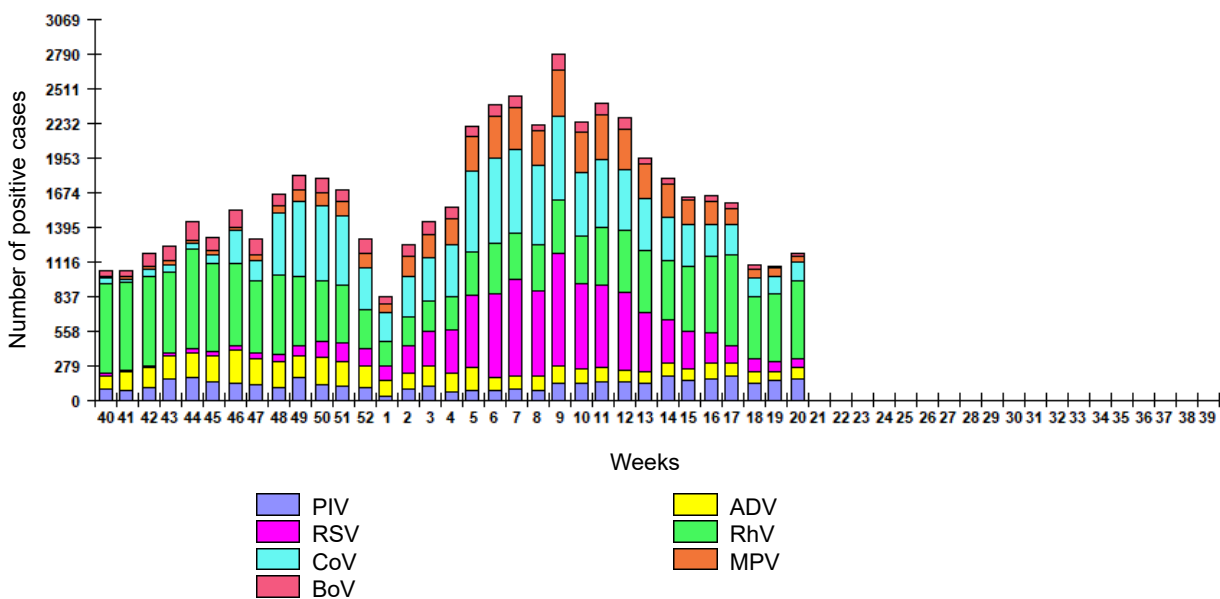


Fig. 6. Monitoring of ARVI detection by RT-PCR in Russia, season 2023/24



ARVI detections. The overall proportion of respiratory samples tested positive for other ARVI (PIV, ADV, RSV, RhV, CoV, MPV, BoV) estimated as **17.0%** of investigated samples by PCR.

Fig. 7. Monitoring of influenza viruses isolation in Russia, season 2023/24

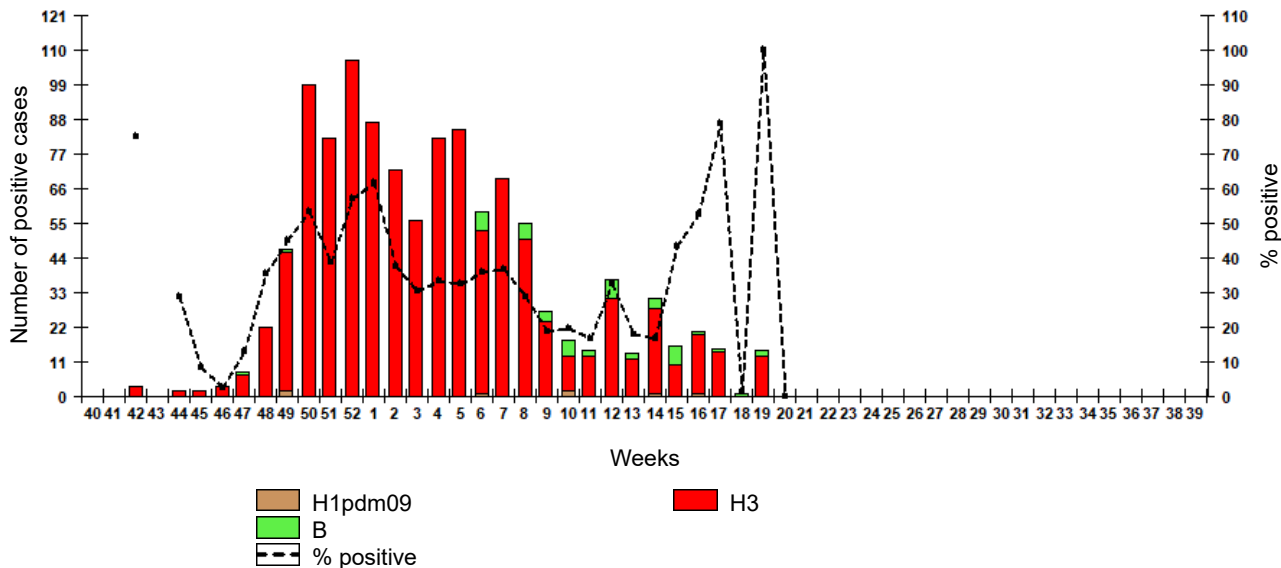


Table 1. Results of influenza and other ARVI detection by RT-PCR in Russia, week 20 of 2024

	Number of specimens / number of positive cases	% positive
<u>Influenza</u>		
Number of specimens tested for influenza	7101	-
Influenza A (not subt.)	4	0,06%
Influenza A(H1)pdm09	0	0,0%
Influenza A(H3)	0	0,0%
Influenza B	66	0,9%
All influenza	70	1,0%
<u>Other ARVI</u>		
Number of specimens tested for ARVI	6998	-
PIV	178	2,5%
ADV	97	1,4%
RSV	65	0,9%
RhV	629	9,0%
CoV	147	2,1%
MPV	48	0,7%
BoV	24	0,3%
All ARVI	1188	17,0%
<u>SARS-CoV-2 (COVID-19)</u>		
Number of specimens tested for SARS-CoV-2	7941	-
SARS-CoV-2	335	4,2%

Fig. 8. Results of PCR detections of SARS-CoV-2 in Russia



COVID-19. Totally 24 206 892 cases and 403 045 deaths associated with COVID-19 were registered in Russia including 11 550 cases and 8 deaths in week 20. According to the data obtained by NIC in Saint-Petersburg totally 7941 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 335 (4.2%) cases.

Table 2. Results of influenza viruses isolation in Russia, week 20 of 2024

	Number of specimens / number of viruses	% isolated viruses
Number of specimens	1	-
Influenza A(H1)pdm09	0	0,0%
Influenza A(H3)	0	0,0%
Influenza B	0	0,0%
All influenza	0	0,0%

Sentinel influenza surveillance

Clinical samples from 75 SARI patients were investigated by rRT-PCR for influenza, among them 3 (4.0%) cases of influenza B were detected. Among 75 SARI patients no positive cases for SARS-CoV-2 were detected. Among 71 SARI samples 5 (7.0%) cases positive for ARVI were detected including: 2 cases of RhV and 3 cases of MPV infection.

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Fig. 9. Monitoring of influenza viruses detection by RT-PCR among SARI patients in sentinel hospitals, season 2023/24

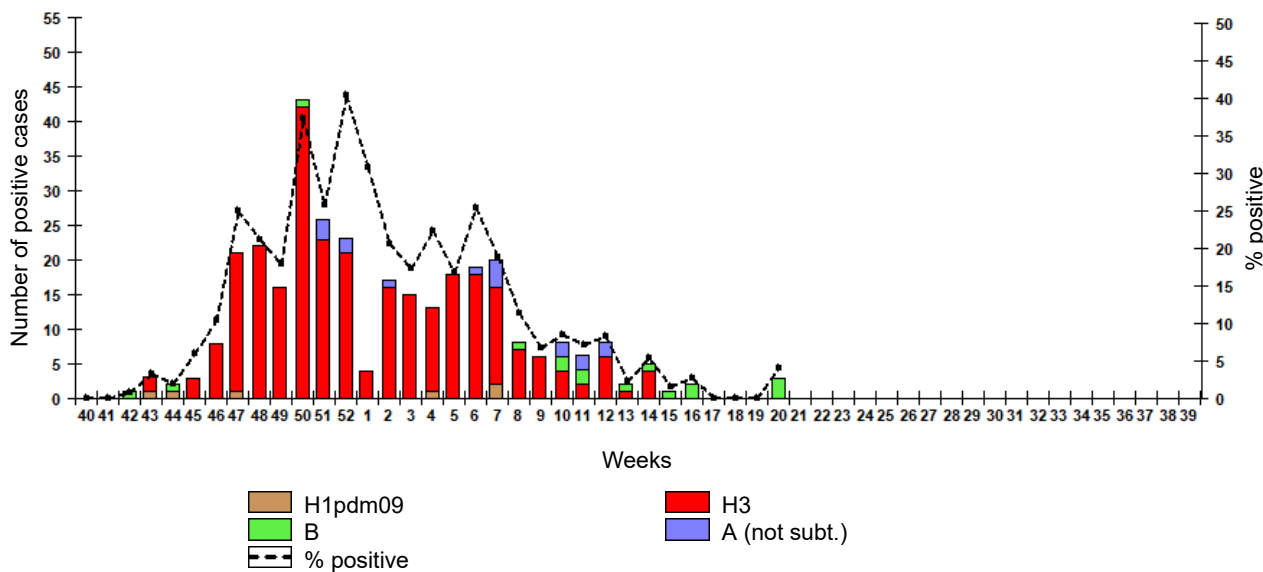


Fig. 10. Monitoring of influenza viruses detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2023/24

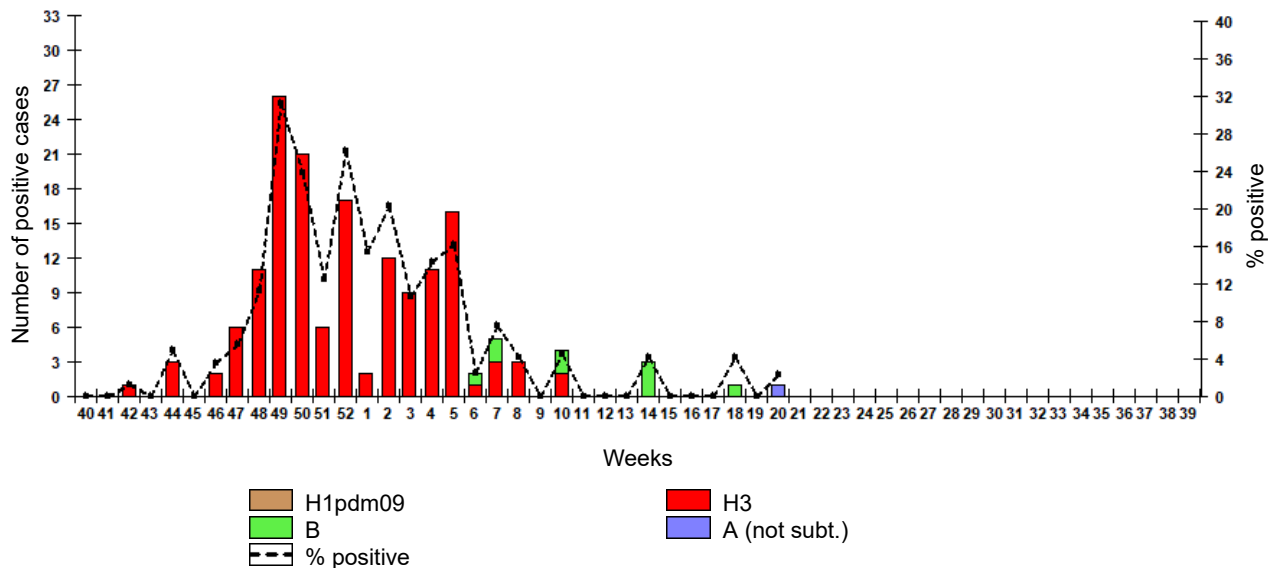


Fig. 11. Monitoring of ARVI detection by RT-PCR among SARI patients in sentinel hospitals, season 2023/24

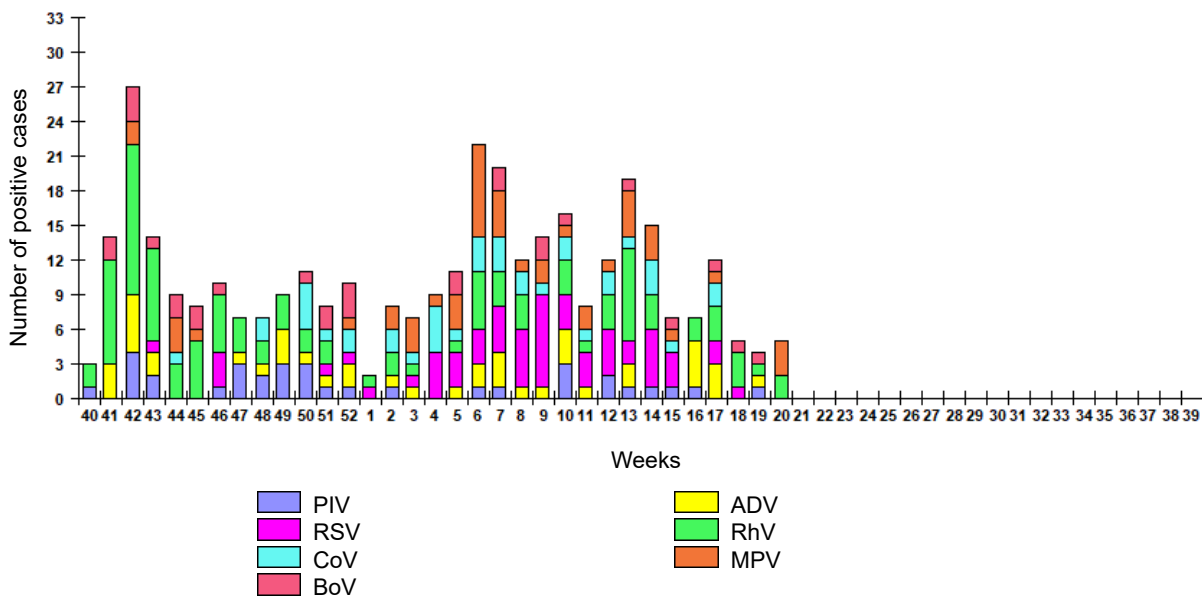


Fig. 12. Monitoring of ARVI detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2023/24

