

NATIONAL WEEKLY INFLUENZA BULLETIN OF THE RUSSIAN FEDERATION

week 2 of 2023 (09.01.23 - 15.01.23)

Summary.

Influenza and ARI incidence data. Influenza and other ARI activity increase of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (77.1 per 10 000 of population) was higher than national baseline (70.0) by 10.1%.

Etiology of ILI & ARI. Among 9435 patients investigation 2020 (21.4%) respiratory samples were positive for influenza, including 1194 cases of influenza A(H1N1)pdm09 in 42 cities, 4 cases of influenza A(H3N2) in 4 cities, 462 cases of influenza A unsubtype in 13 cities and 360 cases of influenza B in 32 cities.

103 influenza viruses were isolated on MDCK cell culture, including: 94 influenza A(H1N1)pdm09 viruses in Vladivostok (26), Vologda (2), Saint-Petersburg (10), Khabarovsk (56), 2 influenza A(H3N2) viruses in Khabarovsk and 7 influenza B viruses in Kaliningrad (1), Samara (1), Saint-Petersburg (2), Khabarovsk (3). Since the beginning of the season 482 viruses A(H1N1)pdm09, 13 viruses A(H3N2) and 48 viruses B have been isolated.

Antigenic characterization. Since the beginning of the season, 137 influenza A(H1N1)pdm09 viruses have been antigenically characterized by the NICs, including: Moscow (37) and Saint-Petersburg (100), 5 influenza A(H3N2) viruses in Saint-Petersburg and 28 influenza B, including: Moscow (5) and Saint-Petersburg (18). All viruses A(H1N1)pdm09 were antigenically similar to reference strain A/Victoria/2570/2019 (H1N1)pdm09. All A(H3N2) strains were similar to the reference virus A/Darwin/9/2021. 27 influenza B viruses were antigenically similar to reference strain B/Austria/1359417/2021 and 1 influenza B virus reacted with the reference virus antiserum to a 1:8 homologous titer.

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 8.7% (PCR).

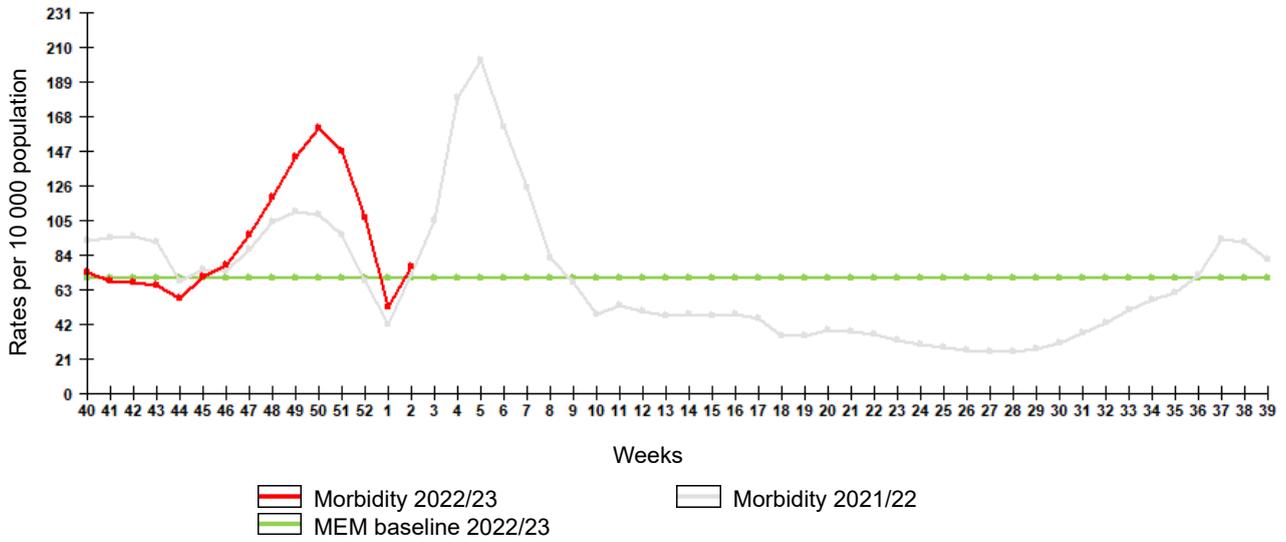
In sentinel surveillance system clinical samples from 50 SARI patients were investigated by rRT-PCR for influenza, among them 13 (26.0%) cases of influenza A(H1N1)pdm09 were detected. 31 SARI patients were investigated for ARVI by rRT-PCR, among them 3 (9.7%) cases of ARVI recognized including 1 case of ADV, 1 case of RhV and 1 case of MPV infection. 1 (2.8%) of 36 SARI patients were positive for coronavirus SARS-CoV-2.

Clinical samples from 38 ILI/ARI patients were investigated for influenza by rRT-PCR, among them 2 (5.3%) cases of influenza, including 1 case of influenza A(H1N1)pdm09 and 1 case of influenza B. Among 23 ILI/ARI samples 4 (17.4%) cases positive for ARVI detected including 3 cases of ADV and 1 case of RhV infection. 2 (6.1%) of 33 ILI/ARI patients were positive for coronavirus SARS-CoV-2.

COVID-19. Totally 21 876 336 cases and 394 569 deaths associated with COVID-19 were registered in Russia including 5 914 cases and 40 deaths in last 24 hours (on 12:00 of 19.01.2023). According to the data obtained by NIC in Saint-Petersburg totally 11 844 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 703 (5.9%) cases.

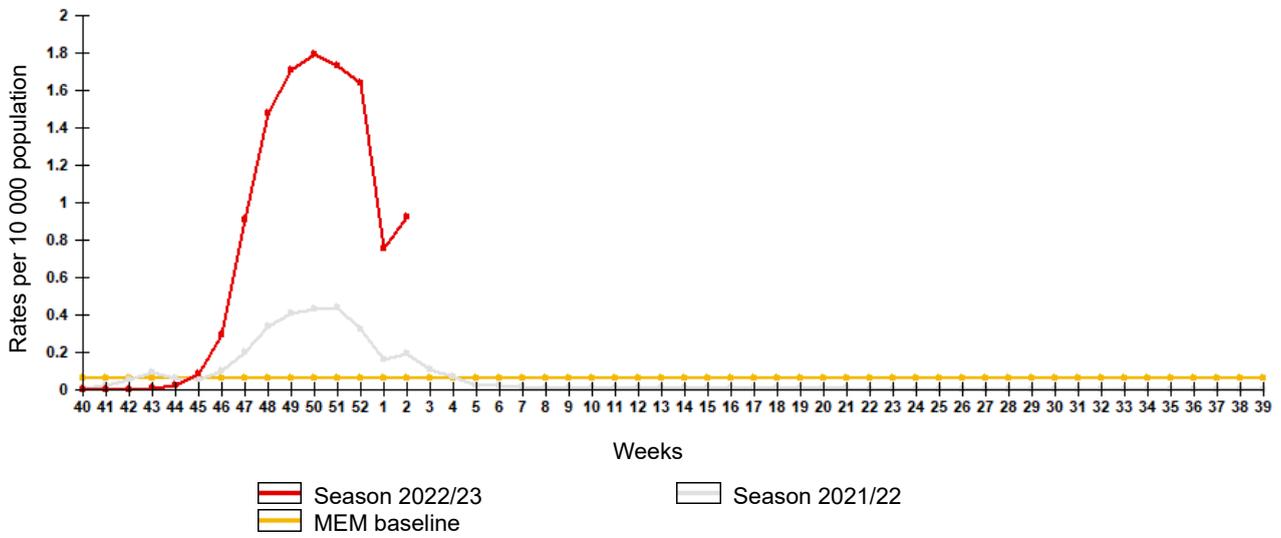
Influenza and ARI morbidity data

Fig. 1. Influenza and ARI morbidity in 61 cities under surveillance in Russia, seasons 2021/22 and 2022/23



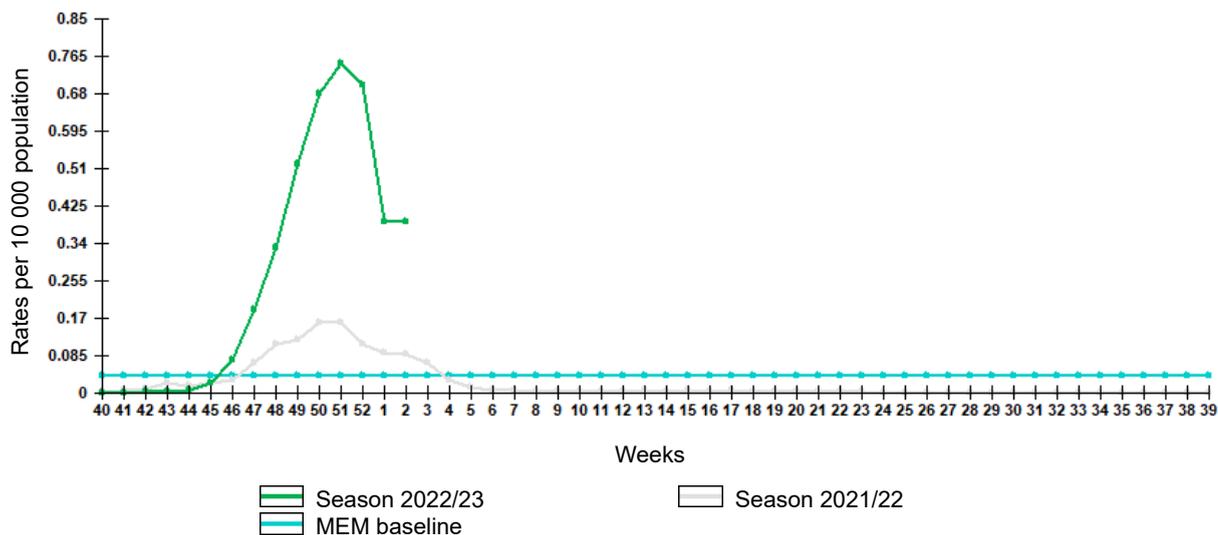
Epidemiological data showed increase of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (77.1 per 10 000 of population) was higher than national baseline (70.0) by 10.1%.

Fig. 2. Comparative data on incidence rate of clinically diagnosed influenza, seasons 2021/22 and 2022/23



Incidence rate of clinically diagnosed influenza increased comparing to previous week and amounted to 0.92 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 2021/22 and 2022/23



Hospitalization rate of clinically diagnosed influenza decreased comparing to previous week and amounted to 0.39 per 10 000 of population, it was higher 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 RBLs and two WHO NICs. According to these data as a result of 9435 patients investigation 2020 (21.4%) respiratory samples were positive for influenza, including 1194 cases of influenza A(H1N1)pdm09 in 42 cities, 4 cases of influenza A(H3N2) in 4 cities, 462 cases of influenza A untyped in 13 cities and 360 cases of influenza B in 32 cities.

103 influenza viruses were isolated on MDCK cell culture, including: 94 influenza A(H1N1)pdm09 viruses in Vladivostok (26), Vologda (2), Saint-Petersburg (10), Khabarovsk (56), 2 influenza A(H3N2) viruses in Khabarovsk and 7 influenza B viruses in Kaliningrad (1), Samara (1), Saint-Petersburg (2), Khabarovsk (3). Since the beginning of the season 482 viruses A(H1N1)pdm09, 13 viruses A(H3N2) and 48 viruses B have been isolated.

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Fig. 4. Geographic distribution of RT-PCR detected influenza viruses in cities under surveillance in Russia, week 2 of 2023

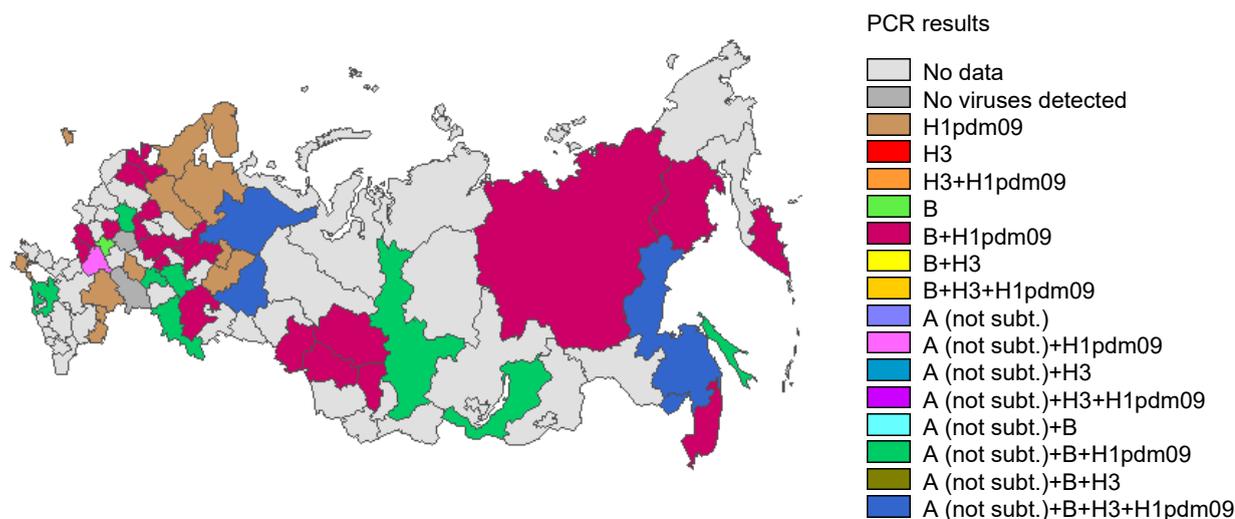


Fig. 5. Monitoring of influenza viruses detection by RT-PCR in Russia, season 2022/23

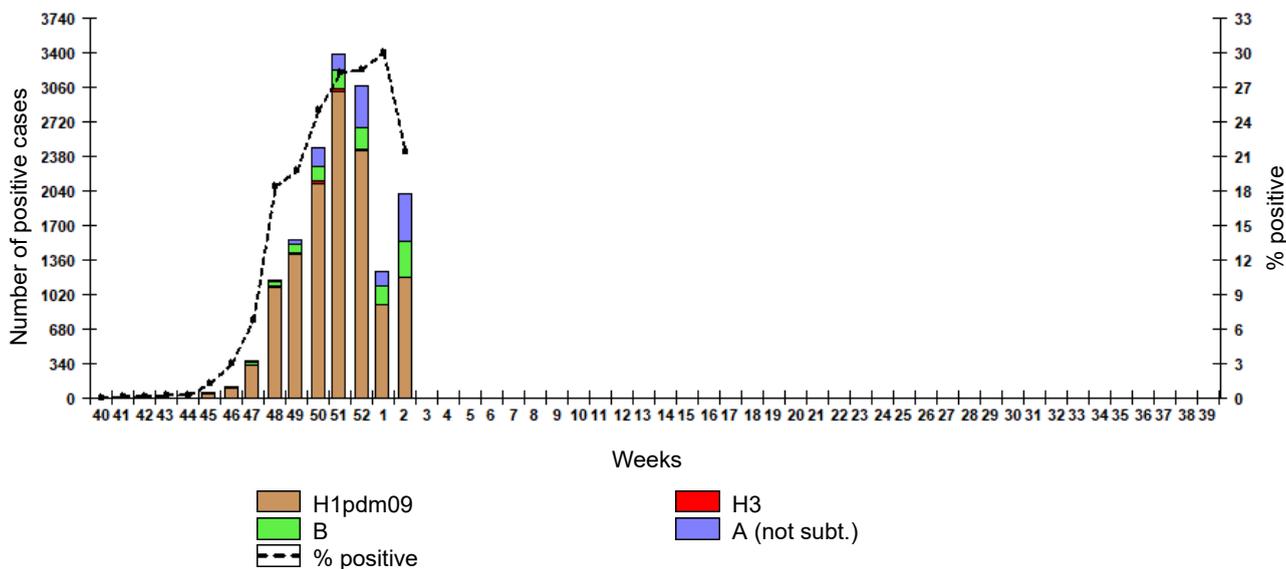
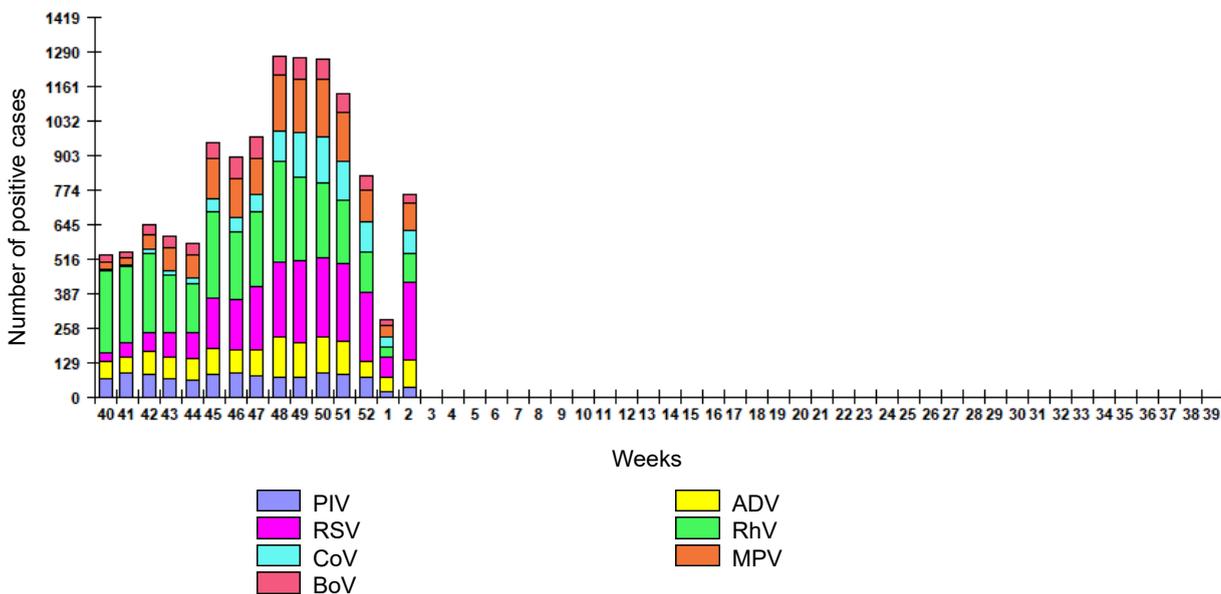


Fig. 6. Monitoring of ARVI detection by RT-PCR in Russia, season 2022/23



ARVI detections. The overall proportion of respiratory samples tested positive for other ARVI (PIV, ADV, RSV, RhV, CoV, MPV, BoV) estimated as **8.7%** of investigated samples by PCR.

Fig. 7. Monitoring of influenza viruses isolation in Russia, season 2022/23

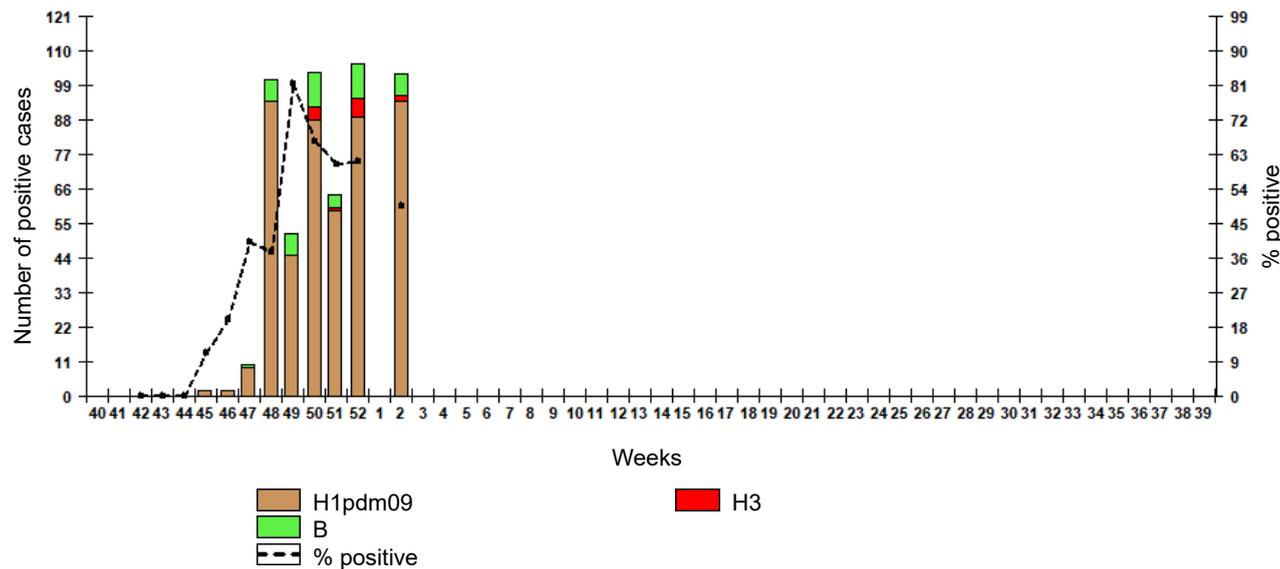
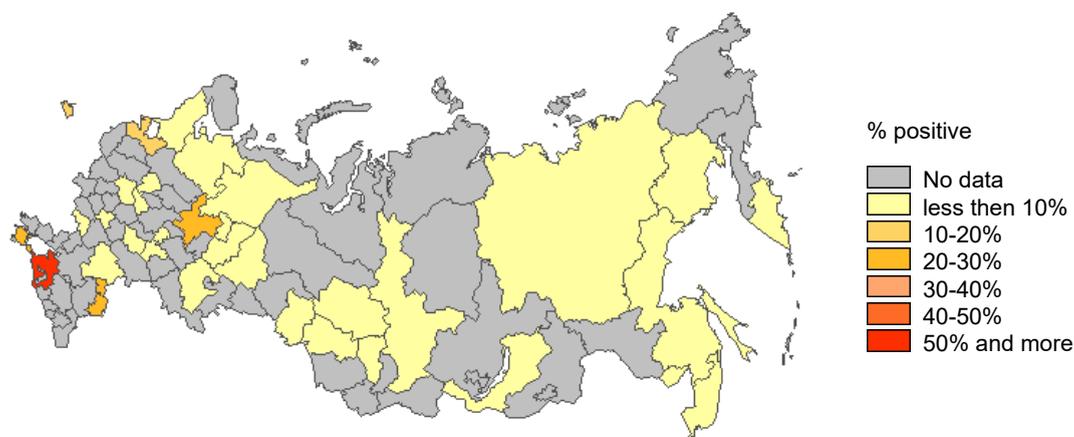


Table 1. Results of influenza and other ARVI detection by RT-PCR in Russia, week 2 of 2023

	Number of specimens / number of positive cases	% positive
<u>Influenza</u>		
Number of specimens tested for influenza	9435	-
Influenza A (not subt.)	462	4,9%
Influenza A(H1)pdm09	1194	12,7%
Influenza A(H3)	4	0,04%
Influenza B	360	3,8%
All influenza	2020	21,4%
<u>Other ARVI</u>		
Number of specimens tested for ARVI	8721	-
PIV	36	0,4%
ADV	102	1,2%
RSV	292	3,3%
RhV	106	1,2%
CoV	86	1,0%
MPV	101	1,2%
BoV	33	0,4%
All ARVI	756	8,7%
<u>SARS-CoV-2 (COVID-19)</u>		
Number of specimens tested for SARS-CoV-2	11844	-
SARS-CoV-2	703	5,9%

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



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Table 2. Results of influenza viruses isolation in Russia, week 2 of 2023

	Number of specimens / number of viruses	% isolated viruses
Number of specimens	208	-
Influenza A(H1)pdm09	94	45,2%
Influenza A(H3)	2	1,0%
Influenza B	7	3,4%
All influenza	103	49,5%

Sentinel influenza surveillance

Clinical samples from 50 SARI patients were investigated by rRT-PCR for influenza, among them 13 (26.0%) cases of influenza, including 7 cases of influenza A(H1N1)pdm09 and 6 cases of influenza B. 31 SARI patients were investigated for ARVI by rRT-PCR, among them 3 (9.7%) cases of ARVI recognized including 1 case of ADV, 1 case of RhV and 1 case of MPV infection. 1 (2.8%) of 36 SARI patients were positive for coronavirus SARS-CoV-2.

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Fig. 9. Monitoring of influenza viruses detection by RT-PCR among SARI patients in sentinel hospitals, season 2022/23

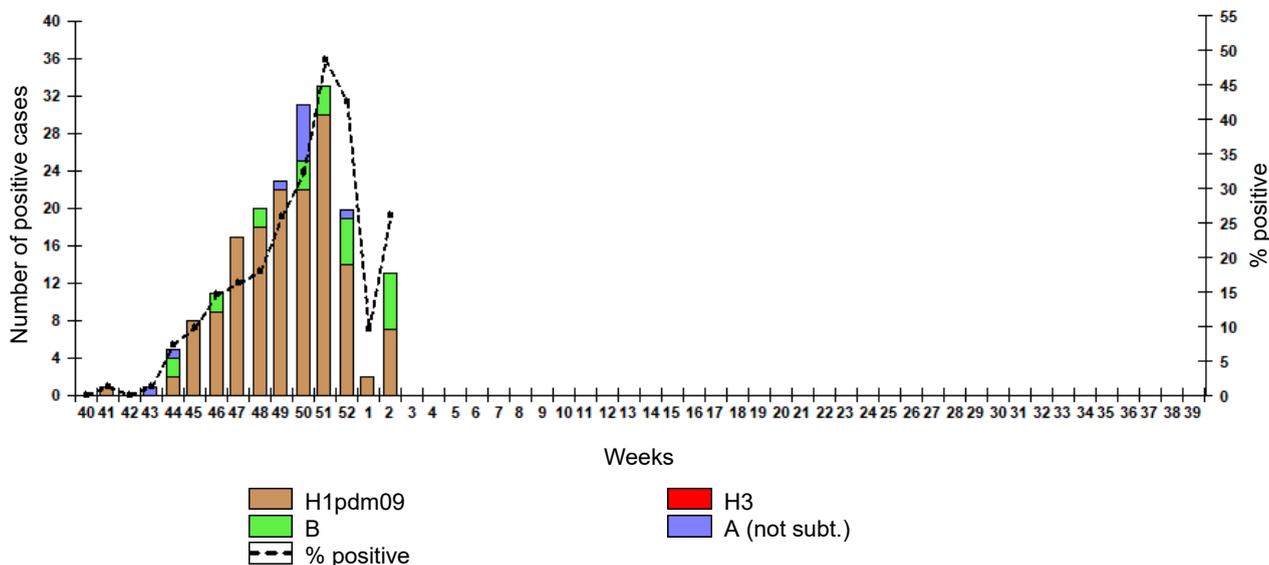


Fig. 10. Monitoring of influenza viruses detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2022/23

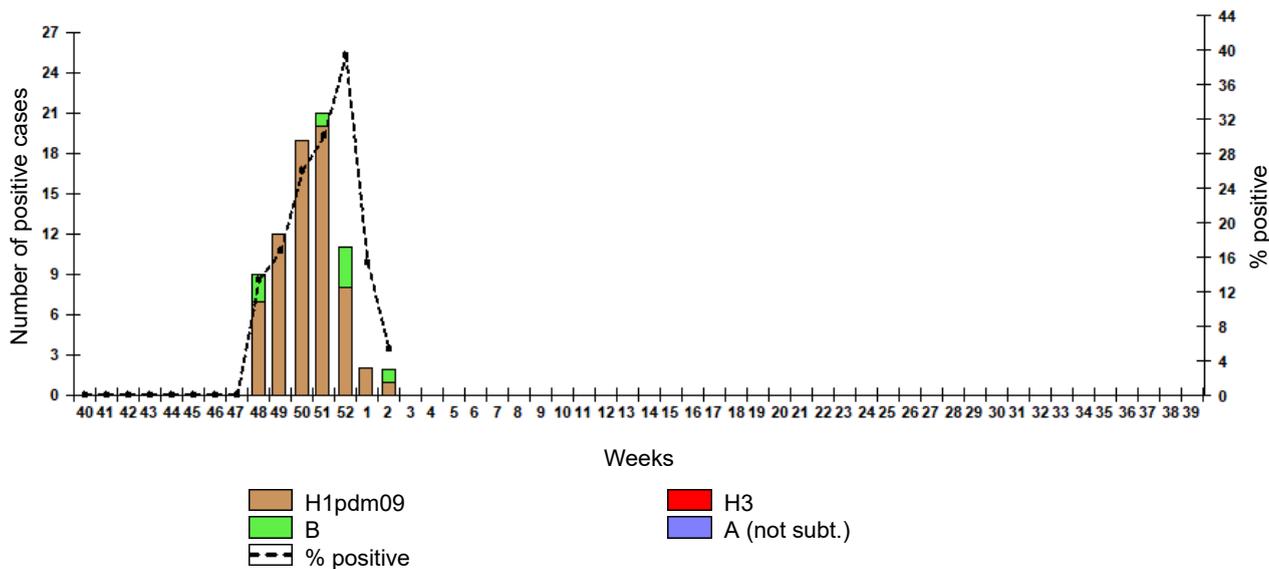


Fig. 11. Monitoring of ARVI detection by RT-PCR among SARI patients in sentinel hospitals, season 2022/23

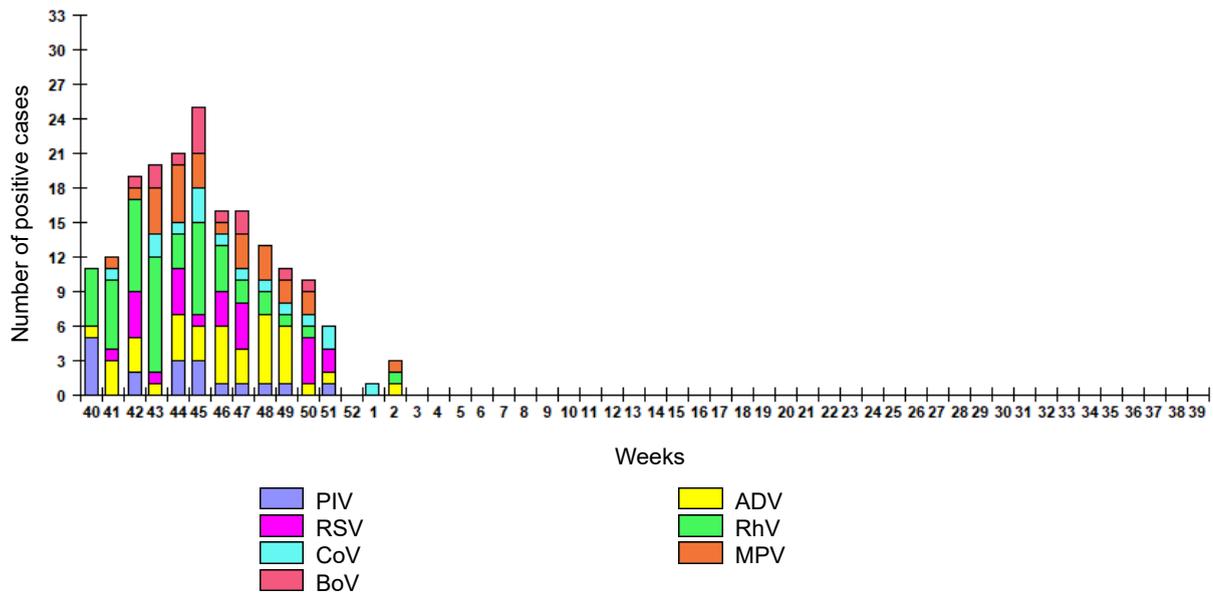


Fig. 12. Monitoring of ARVI detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2022/23

