

NATIONAL WEEKLY INFLUENZA BULLETIN OF THE RUSSIAN FEDERATION

week 1 of 2023 (02.01.23 - 08.01.23)

Summary.

Influenza and ARI incidence data. Influenza and other ARI activity decrease of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (53.0 per 10 000 of population) was lower than national baseline (70.0) by 24.3%.

Etiology of ILI & ARI. Among 4147 investigation patients in 40 cities 1246 (30.0%) respiratory samples were positive for influenza, including 917 cases of influenza A(H1N1)pdm09 in 32 cities, 4 cases of influenza A(H3N2) in 2 cities, 139 cases of influenza A untyped in 7 cities and 186 cases of influenza B in 25 cities.

No influenza viruses were isolated on MDCK cell culture. Since the beginning of the season, 286 viruses A(H1N1)pdm09, 5 viruses A(H3N2) and 29 viruses B have been isolated.

Antigenic characterization. Since the beginning of the season, 89 influenza A(H1N1)pdm09 have been antigenically characterized by the NICs, including: Moscow (37) and Saint-Petersburg (52), 2 influenza A(H3N2) in Saint-Petersburg and 18 influenza B, including: Moscow (5) and Saint-Petersburg (13). 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. 12 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 9.4% (PCR).

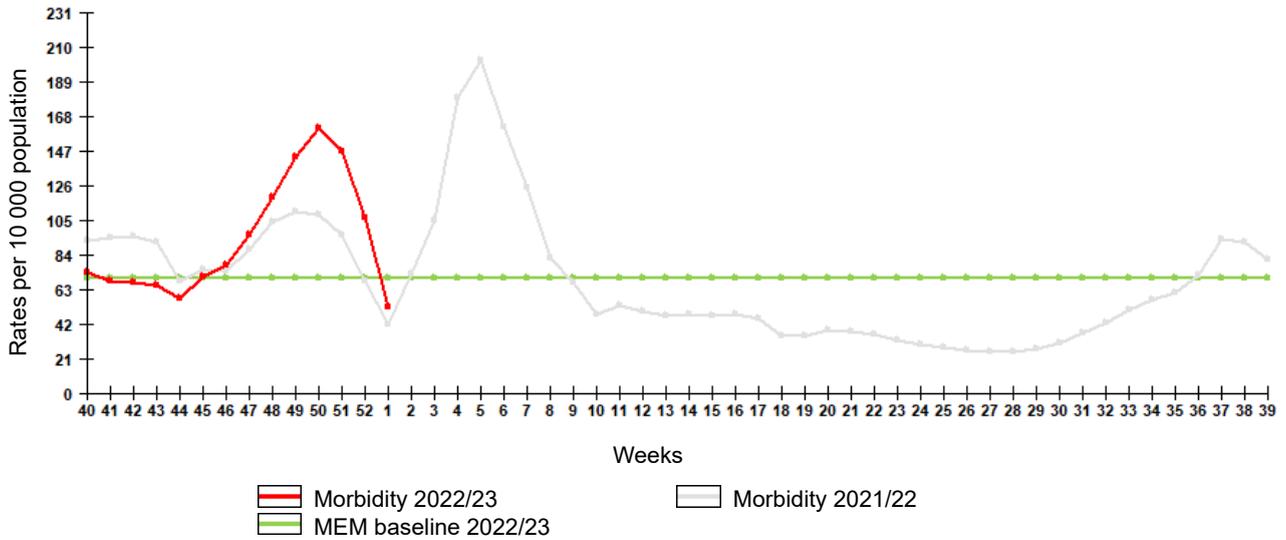
In sentinel surveillance system clinical samples from 21 SARI patients were investigated by rRT-PCR for influenza, among them 2 (9.5%) cases of influenza A(H1N1)pdm09 were detected. Among 10 SARI patients one case of ARVI recognized. Among 10 SARI patients no cases positive for coronavirus SARS-CoV-2 recognized.

Clinical samples from 13 ILI/ARI patients were investigated for influenza by rRT-PCR, among them 2 (15.4%) cases of influenza A(H1N1)pdm09 were detected. Among 8 ILI/ARI samples one case of ARVI recognized. No of 8 ILI/ARI patients were positive for coronavirus SARS-CoV-2.

COVID-19. Totally 21 841 644 cases and 394 262 deaths associated with COVID-19 were registered in Russia including 4 675 cases and 48 deaths in last 24 hours (on 12:00 of 12.01.2023). According to the data obtained by NIC in Saint-Petersburg totally 5 772 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 294 (5.1%) cases.

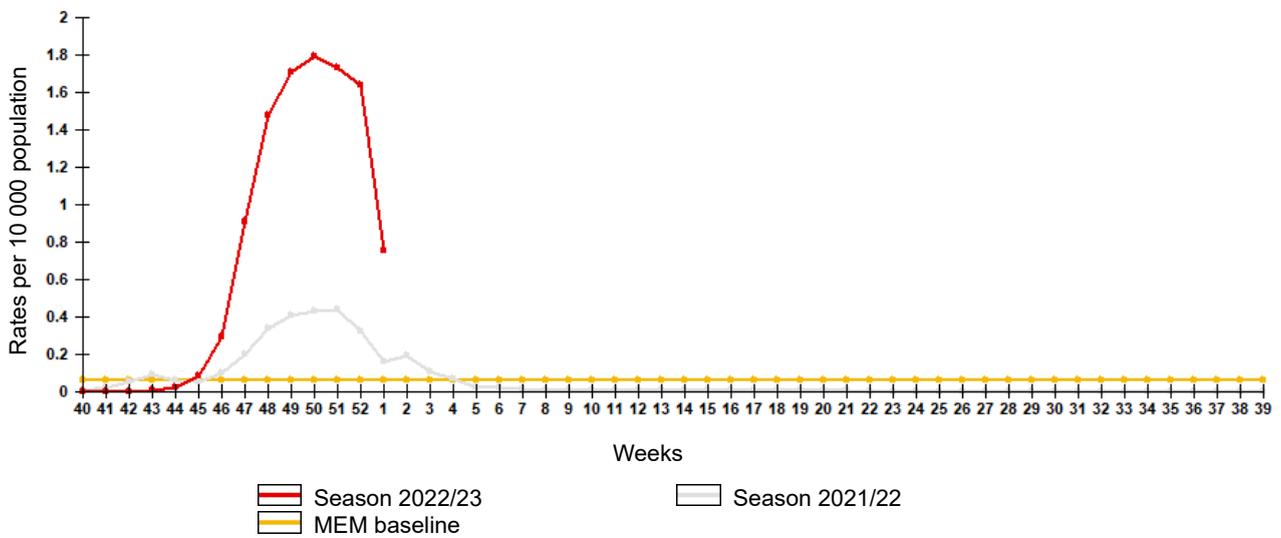
Influenza and ARI morbidity data

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



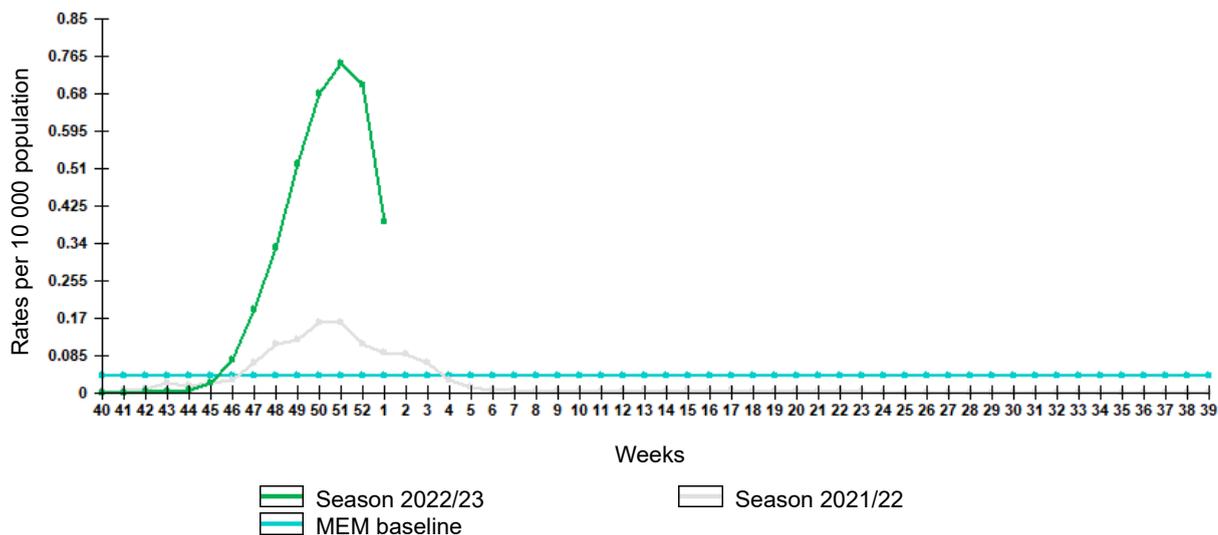
Epidemiological data showed decrease of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (53.0 per 10 000 of population) was lower than national baseline (70.0) by 24.3%.

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



Incidence rate of clinically diagnosed influenza decreased comparing to previous week and amounted to 0.75 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 0.40 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 40 RBLs and two WHO NICs. According to these data as a result of 4147 patients investigation 1246 (30.0%) respiratory samples were positive for influenza, including 917 cases of influenza A(H1N1)pdm09 in 32 cities, 4 cases of influenza A(H3N2) in 2 cities, 139 cases of influenza A untyped in 7 cities and 186 cases of influenza B in 25 cities.

No influenza viruses were isolated on MDCK cell culture. Since the beginning of the season 388 viruses A(H1N1)pdm09, 11 viruses A(H3N2) and 41 viruses B have been isolated.

Antigenic characterization. Since the beginning of the season, 89 influenza A(H1N1)pdm09 have been antigenically characterized by the NICs, including: Moscow (37) and Saint-Petersburg (52), 2 influenza A(H3N2) in Saint-Petersburg and 18 influenza B, including: Moscow (5) and Saint-Petersburg (13). 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. 12 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.

Fig. 4. Geographic distribution of RT-PCR detected influenza viruses in cities under surveillance in Russia, week 1 of 2023

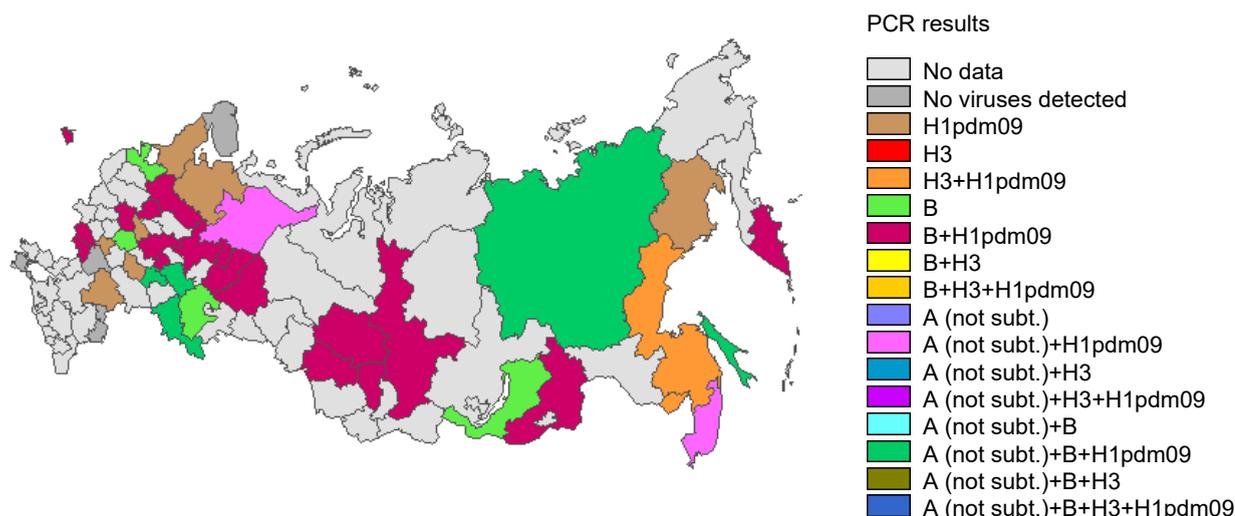


Fig. 5. Monitoring of influenza viruses detection by RT-PCR in Russia, season 2022/23

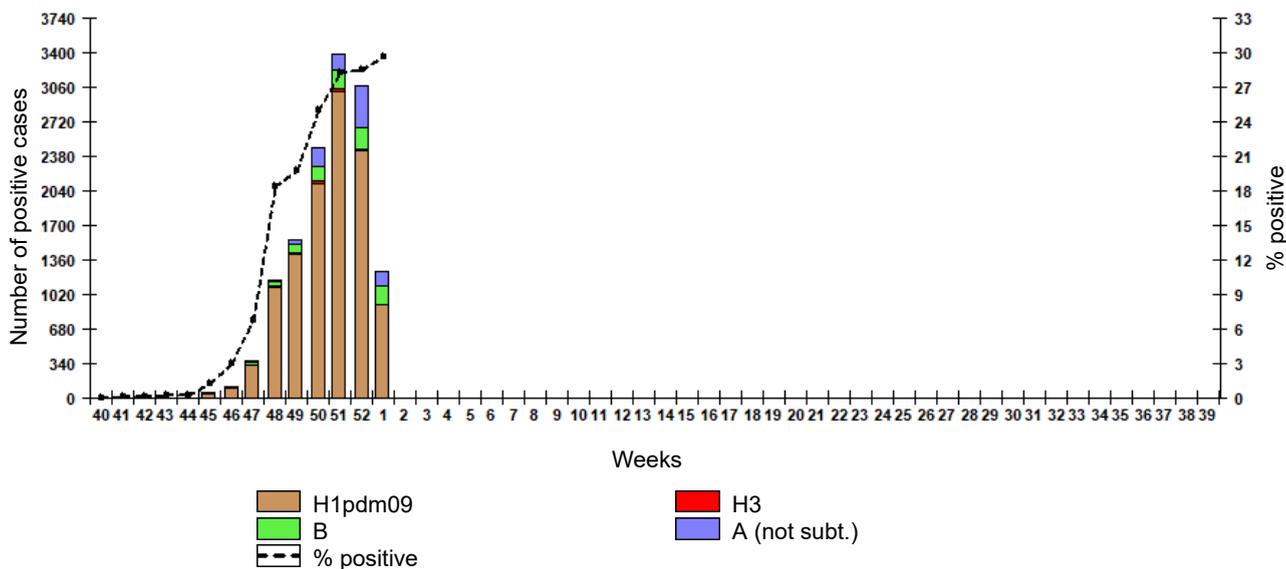
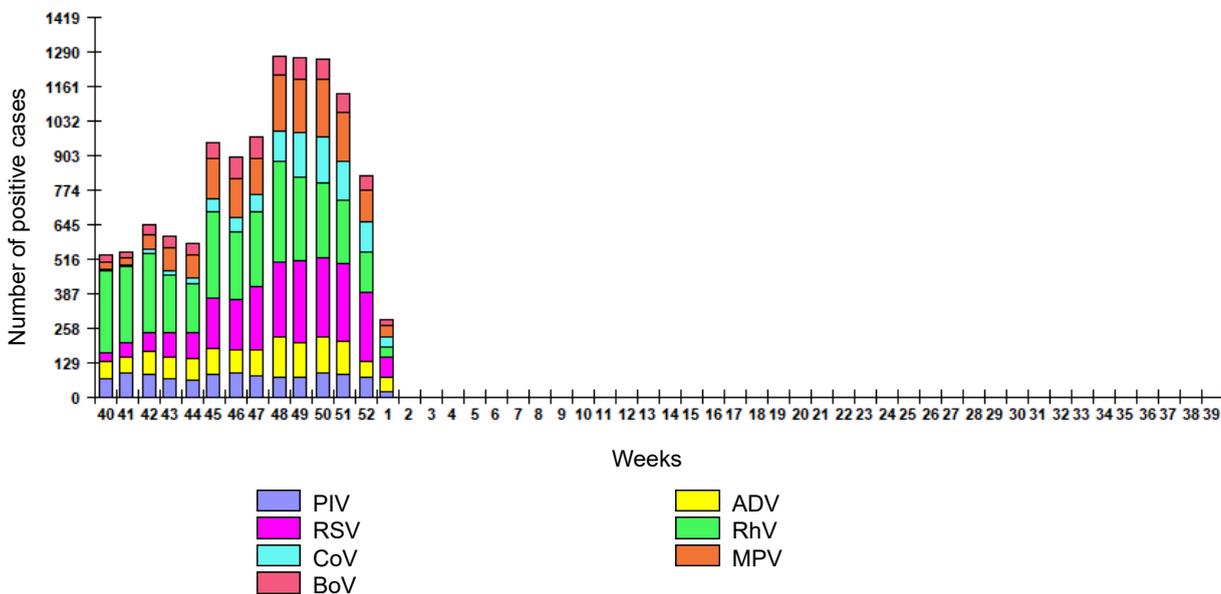


Fig. 6. Monitoring of ARVI detection by RT-PCR in Russia, season 2022/23



ARVI detections. The overall proportion of respiratory samples tested positive for other ARVI (PIV, ADV, RSV, RhV, CoV, MPV, BoV) estimated as **9.4%** of investigated samples by PCR.

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

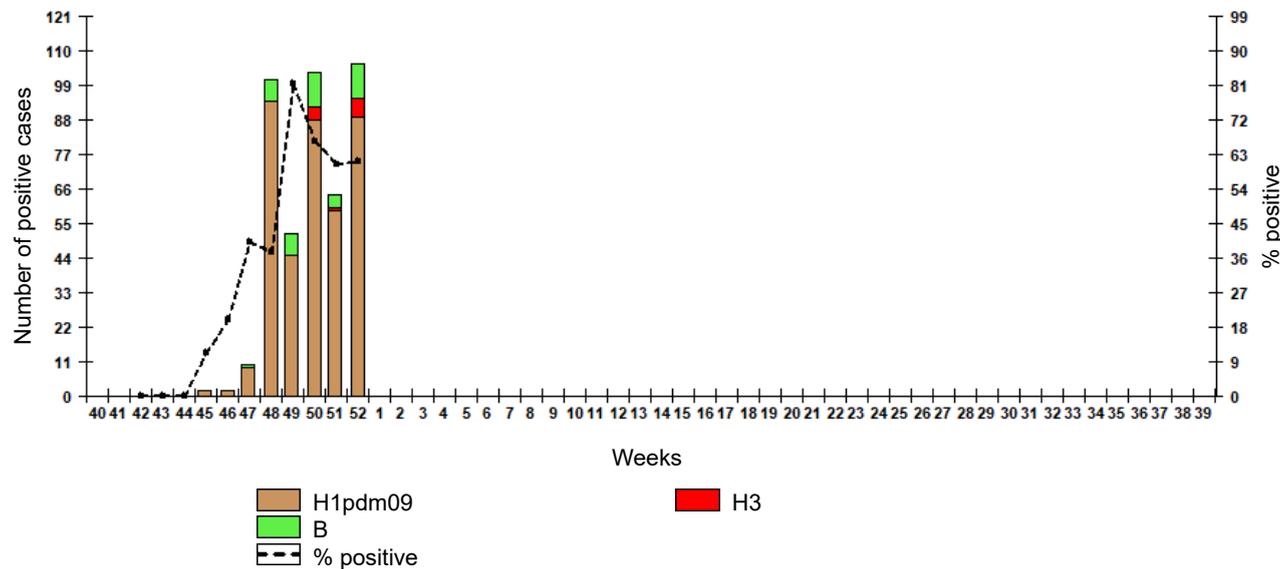


Table 1. Results of influenza and other ARVI detection by RT-PCR in Russia, week 1 of 2023

	Number of specimens / number of positive cases	% positive
<u>Influenza</u>		
Number of specimens tested for influenza	4211	-
Influenza A (not subt.)	139	3,3%
Influenza A(H1)pdm09	918	21,8%
Influenza A(H3)	4	0,09%
Influenza B	187	4,4%
All influenza	1248	29,6%
<u>Other ARVI</u>		
Number of specimens tested for ARVI	3105	-
PIV	23	0,7%
ADV	55	1,8%
RSV	74	2,4%
RhV	36	1,2%
CoV	37	1,2%
MPV	44	1,4%
BoV	20	0,6%
All ARVI	289	9,3%
<u>SARS-CoV-2 (COVID-19)</u>		
Number of specimens tested for SARS-CoV-2	5836	-
SARS-CoV-2	294	5,0%

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



COVID-19. Totally 21 841 644 cases and 394 262 deaths associated with COVID-19 were registered in Russia including 4 675 cases and 48 deaths in last 24 hours (on 12:00 of 12.01.2023). According to the data obtained by NIC in Saint-Petersburg totally 5 772 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 294 (5.1%) cases.

Table 2. Results of influenza viruses isolation in Russia, week 1 of 2023

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

Sentinel influenza surveillance

Clinical samples from 21 SARI patients were investigated by rRT-PCR for influenza, among them 2 (9.5%) cases of influenza A(H1N1)pdm09 were detected. Among 10 SARI patients one case of ARVI recognized. Among 10 SARI patients no cases positive for coronavirus SARS-CoV-2 recognized.

Clinical samples from 13 ILI/ARI patients were investigated for influenza by rRT-PCR, among them 2 (15.4%) cases of influenza A(H1N1)pdm09 were detected. Among 8 ILI/ARI samples one case of ARVI recognized. No of 8 ILI/ARI patients were positive for coronavirus SARS-CoV-2.

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

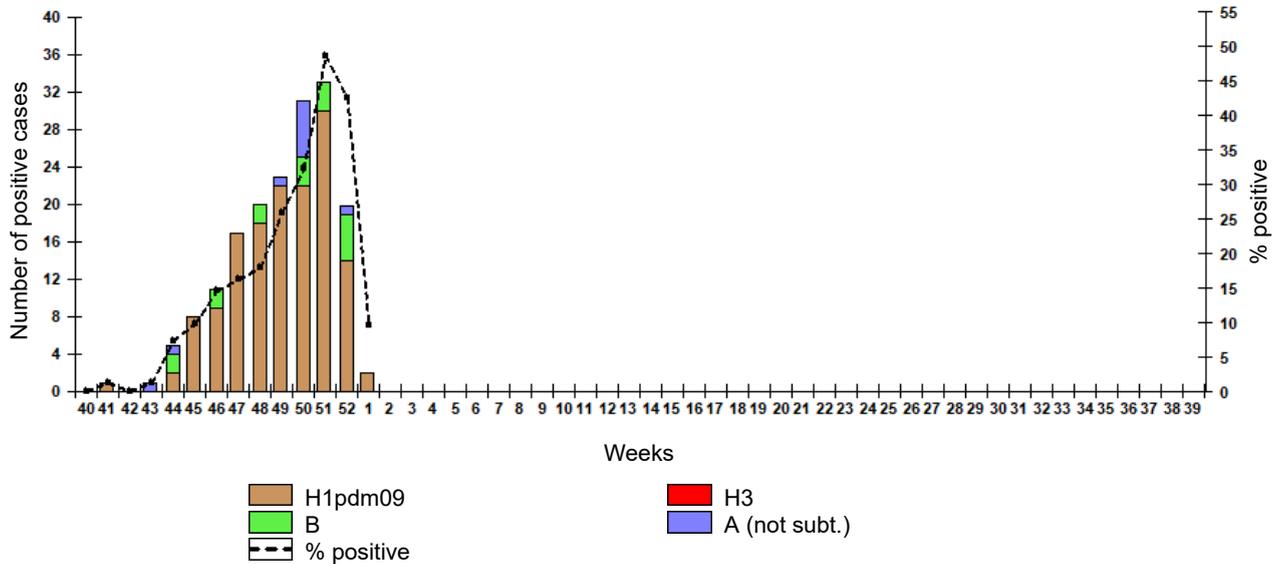


Fig. 10. Monitoring of influenza viruses detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2022/23

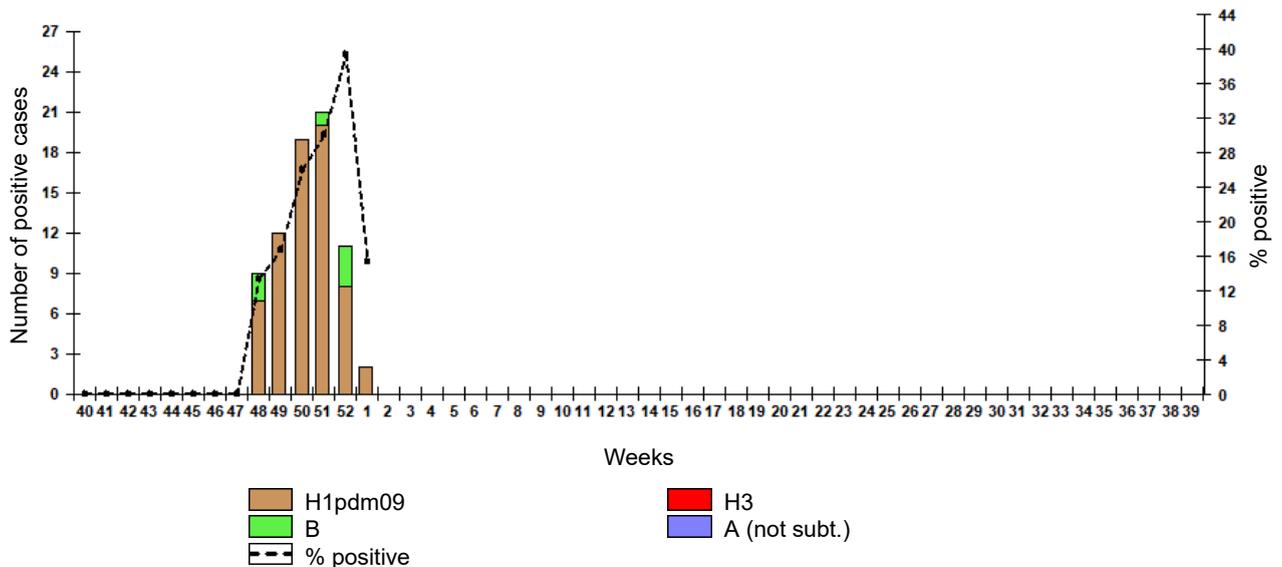


Fig. 11. Monitoring of ARVI detection by RT-PCR among SARI patients in sentinel hospitals, season 2022/23

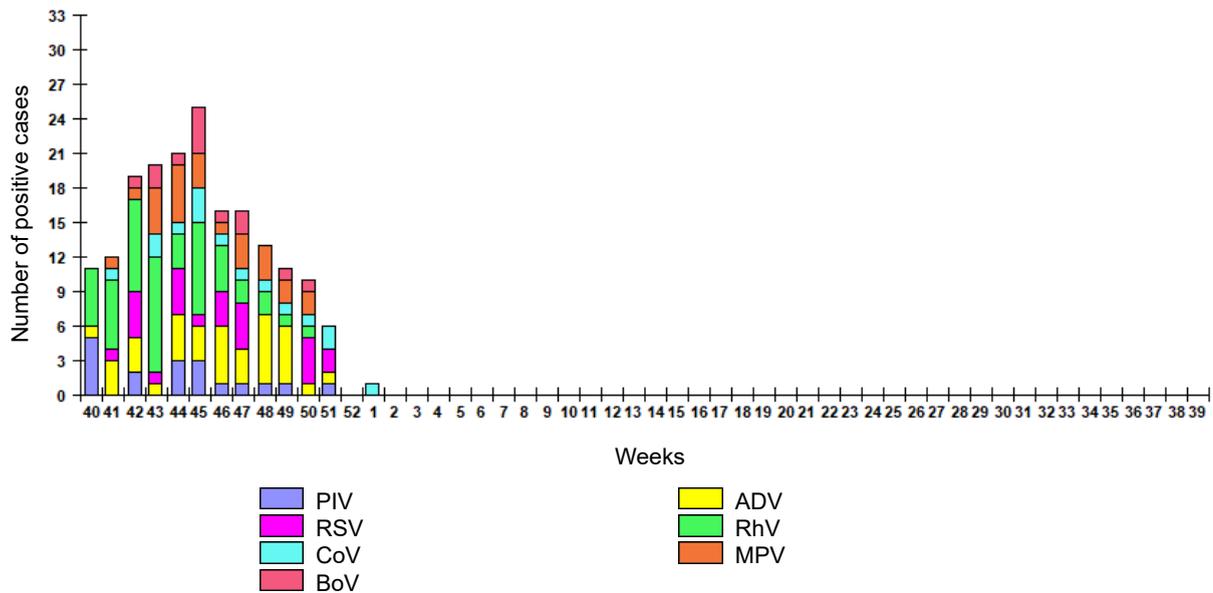


Fig. 12. Monitoring of ARVI detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2022/23

