

## NATIONAL WEEKLY INFLUENZA BULLETIN OF THE RUSSIAN FEDERATION

*week 19 of 2024 (06.05.24 - 12.05.24)*

### Summary.

**Influenza and ARI incidence data.** Influenza and other ARI activity in Russia decreased in comparison with previous week. The nationwide ILI and ARI morbidity level (33.4 per 10 000 of population) was lower than national baseline (70.0) by 52.3%.

**Etiology of ILI & ARI.** Among 6590 patients investigation 87 (1.3%) respiratory samples were positive for influenza, including no cases of influenza A(H1N1)pdm09, 2 cases of influenza A(H3N2) in 1 city, 7 cases of untyped influenza A in 3 cities and 78 cases of influenza B in 17 cities.

15 influenza viruses were isolated on MDCK cell culture, including: 13 cases of influenza A(H3N2) in Kaliningrad (2), Kemerovo (2), Krasnodar (2), Krasnoyarsk (1), Perm (4), Saint-Petersburg (2) and 2 cases of influenza B in Vladivostok (1) and Novosibirsk (1). 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 709 influenza have been antigenically characterized by the NICs, including: 3 influenza A(H1N1)pdm09 viruses in Moscow (2) and Saint-Petersburg (1), 688 influenza A(H3N2) viruses in Moscow (186) and Saint-Petersburg (502) and 18 influenza B viruses in Moscow (8) and Saint-Petersburg (10). 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; 444 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 244 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). 11 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 **16.4%** (PCR).

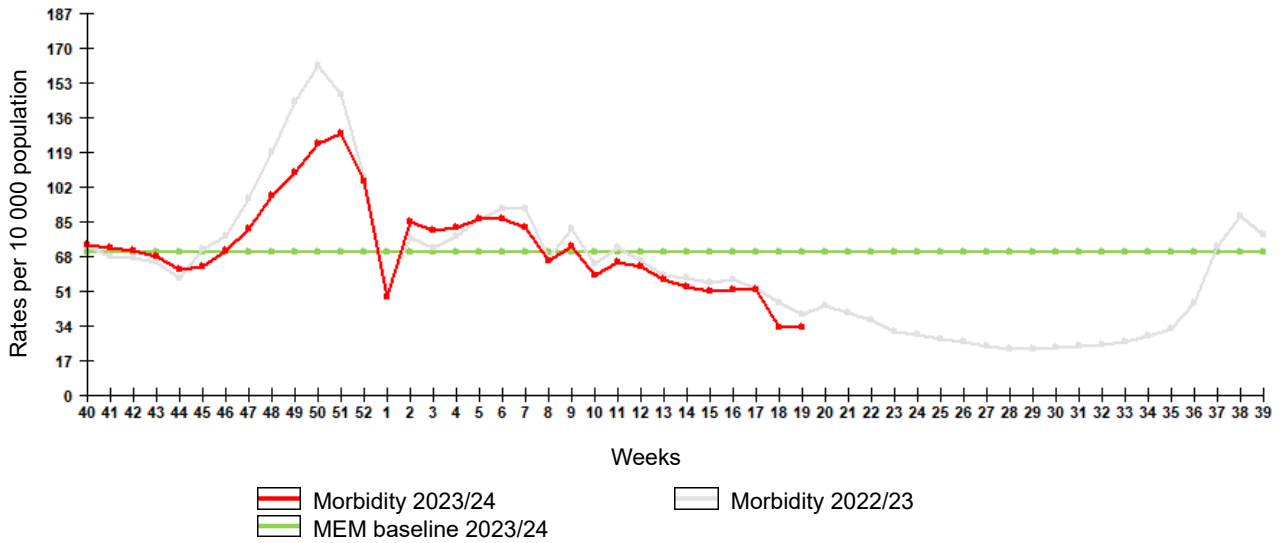
**In sentinel surveillance system** clinical samples from 43 SARI patients were investigated by rRT-PCR for influenza, no positive cases of influenza were detected. Among 43 SARI patients no positive cases for SARS-CoV-2 were detected. Among 41 SARI samples 2 (4.9%) cases positive for ARVI were detected including: 1 case of ADV and 1 case of RhV infection.

Clinical samples from 28 ILI/ARI patients were investigated for influenza by rRT-PCR, no positive cases of influenza were detected. Among 25 ILI/ARI samples 13 (52.0%) cases positive for ARVI were detected including: 1 case of PIV, 1 case of ADV, 9 cases of RhV and 2 cases of CoV infection. Among 28 ILI/ARI patients no positive cases for SARS-CoV-2 were detected.

**COVID-19.** Totally 24 195 342 cases and 403 037 deaths associated with COVID-19 were registered in Russia including 10 857 cases and 49 deaths in week 19. According to the data obtained by NIC in Saint-Petersburg totally 7982 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 391 (5.4%) cases.

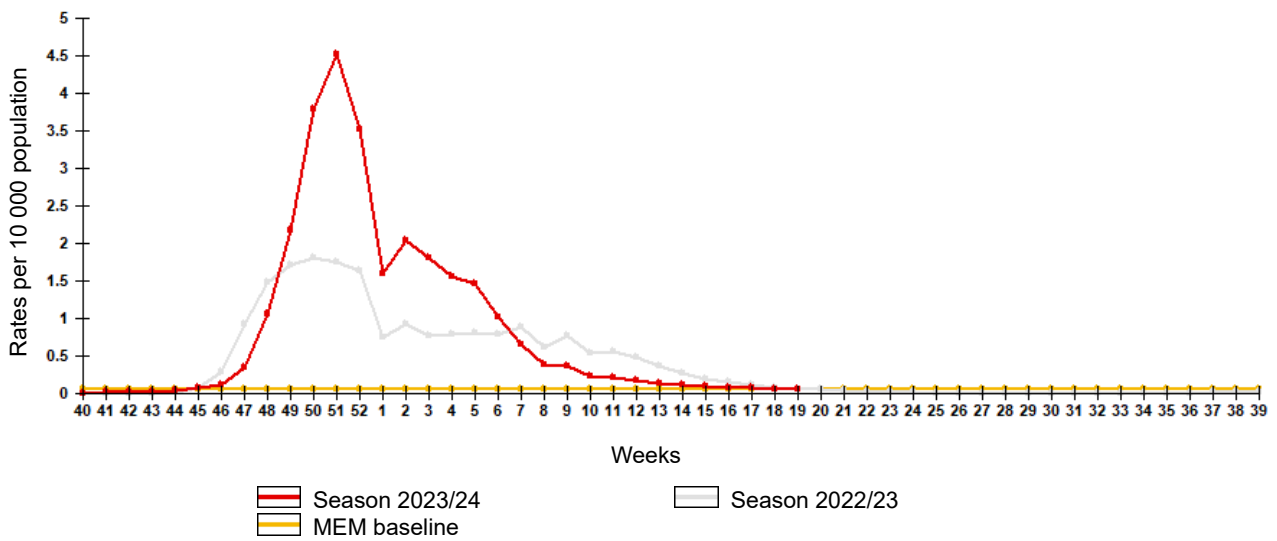
# Influenza and ARI morbidity data

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



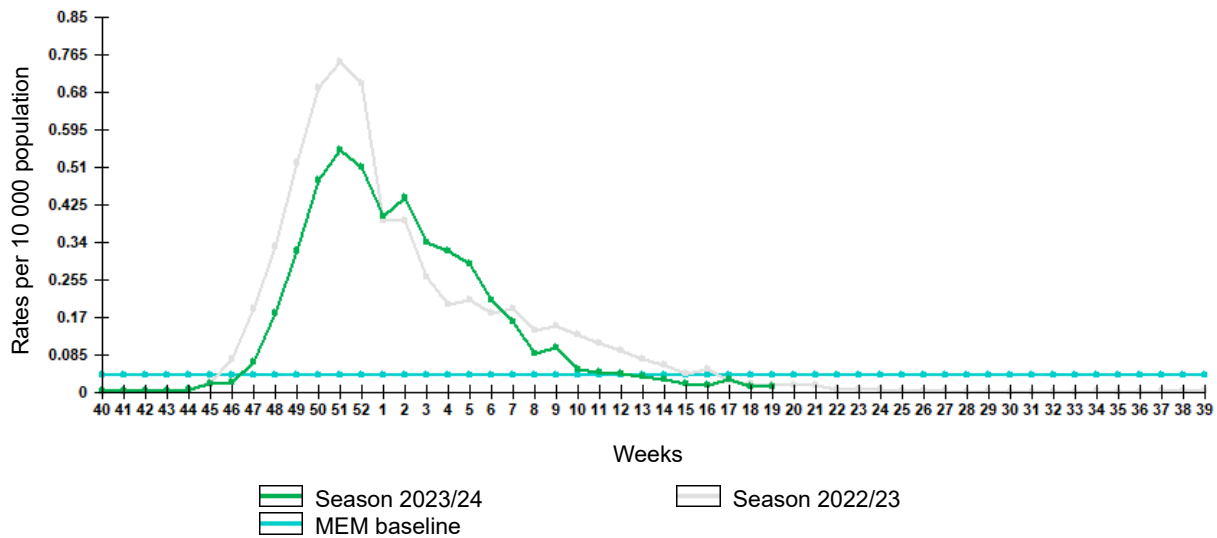
Epidemiological data decreased of influenza and other ARI activity in Russia in comparison with previous week. The nationwide ILI and ARI morbidity level (33.4 per 10 000 of population) was lower than national baseline (70.0) by 52.3%.

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 0.063 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 increased 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 48 RBLs and two WHO NICs. According to these data as a result of 6590 patients investigation 87 (1.3%) respiratory samples were positive for influenza, including no cases of influenza A(H1N1)pdm09, 2 cases of influenza A(H3N2) in 1 city, 7 cases of unsubtype influenza A in 3 cities and 78 cases of influenza B in 17 cities.

15 influenza viruses were isolated on MDCK cell culture, including: 13 cases of influenza A(H3N2) in Kaliningrad (2), Kemerovo (2), Krasnodar (2), Krasnoyarsk (1), Perm (4), Saint-Petersburg (2) and 2 cases of influenza B in Vladivostok (1) and Novosibirsk (1). 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.

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Fig. 4. Geographic distribution of RT-PCR detected influenza viruses in cities under surveillance in Russia, week 19 of 2024

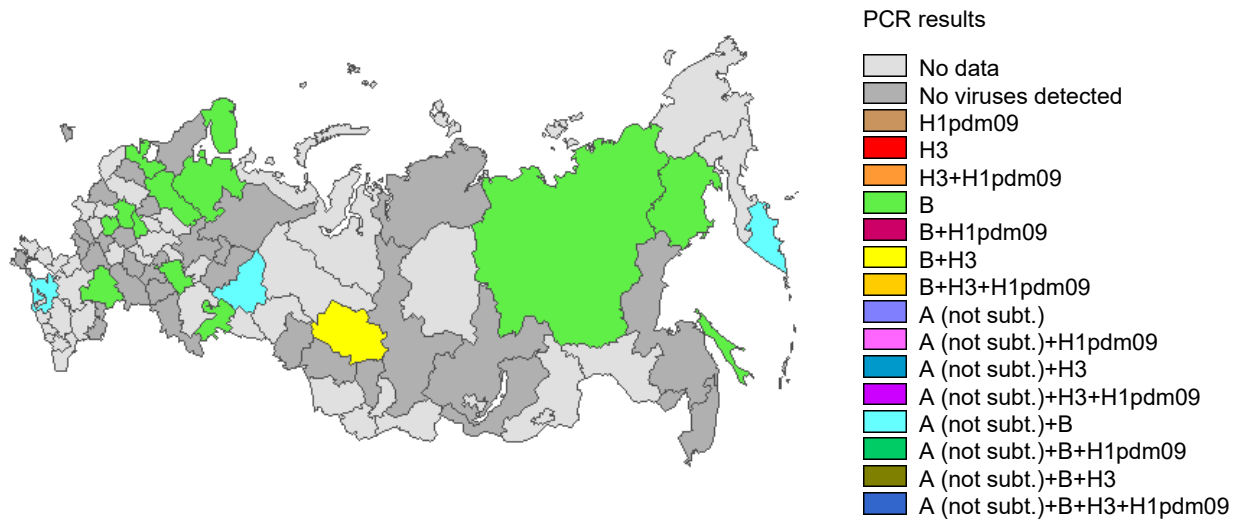


Fig. 5. Monitoring of influenza viruses detection by RT-PCR in Russia, season 2023/24

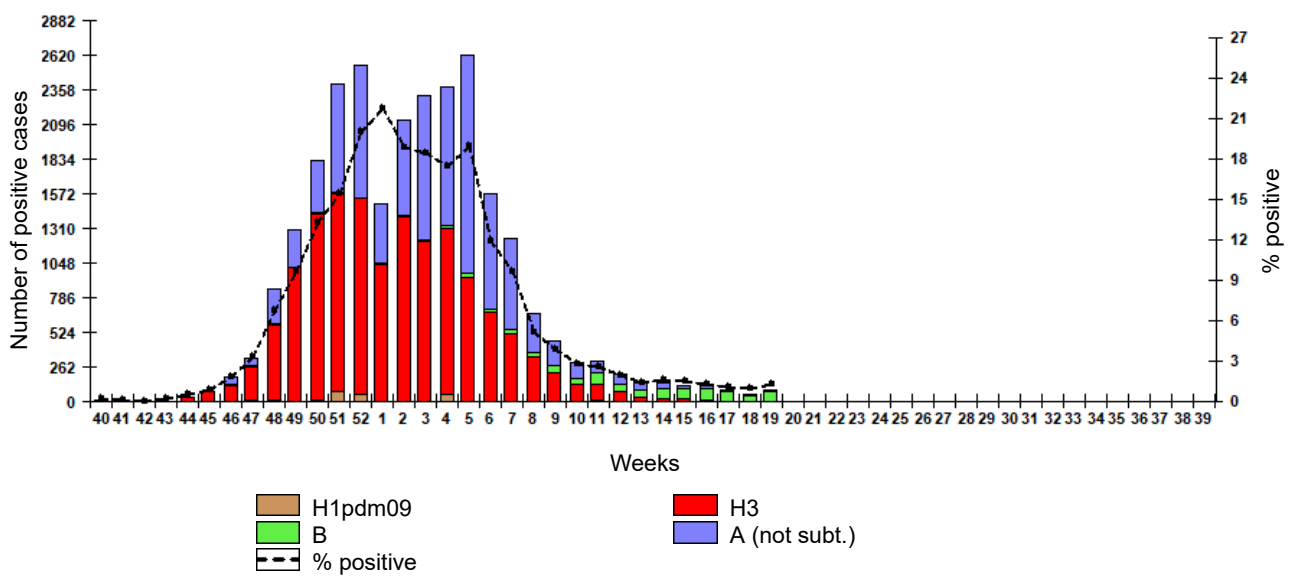
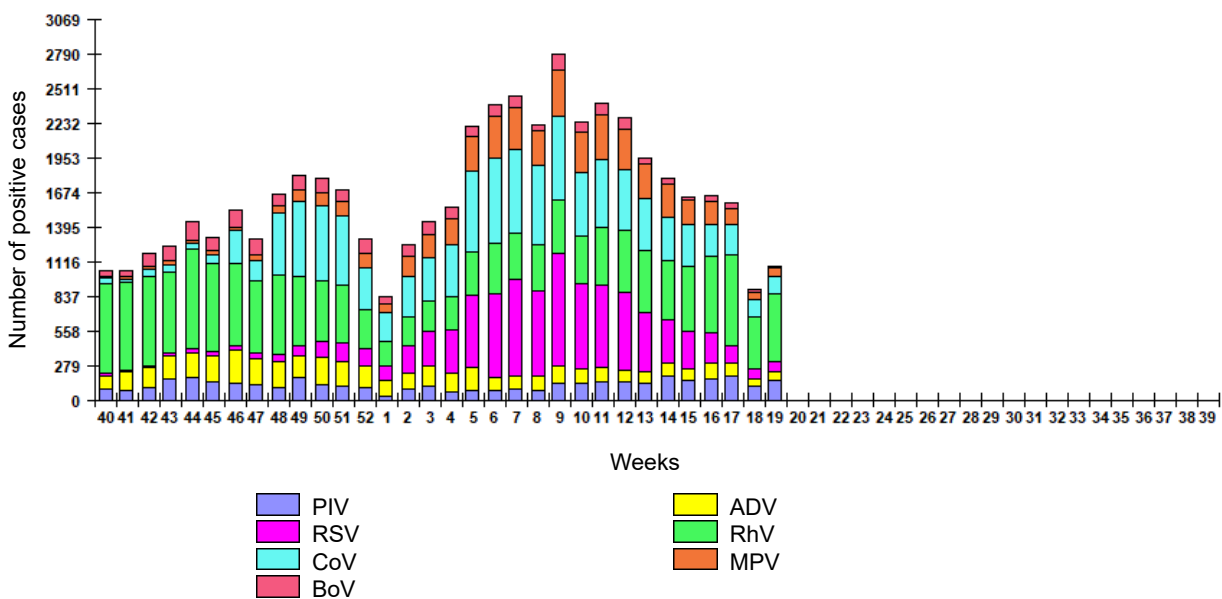


Fig. 6. Monitoring of ARVI detection by RT-PCR in Russia, season 2023/24



**ARVI detections.** The overall proportion of respiratory samples tested positive for other ARVI (PIV, ADV, RSV, RhV, CoV, MPV, BoV) estimated as **16.4%** of investigated samples by PCR.

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

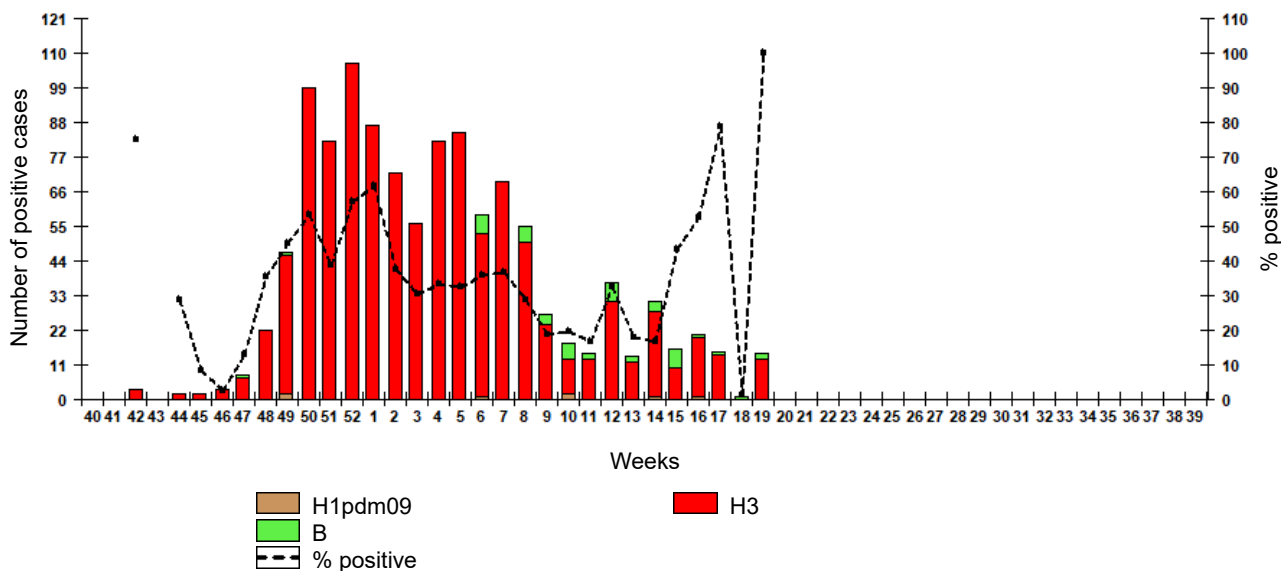
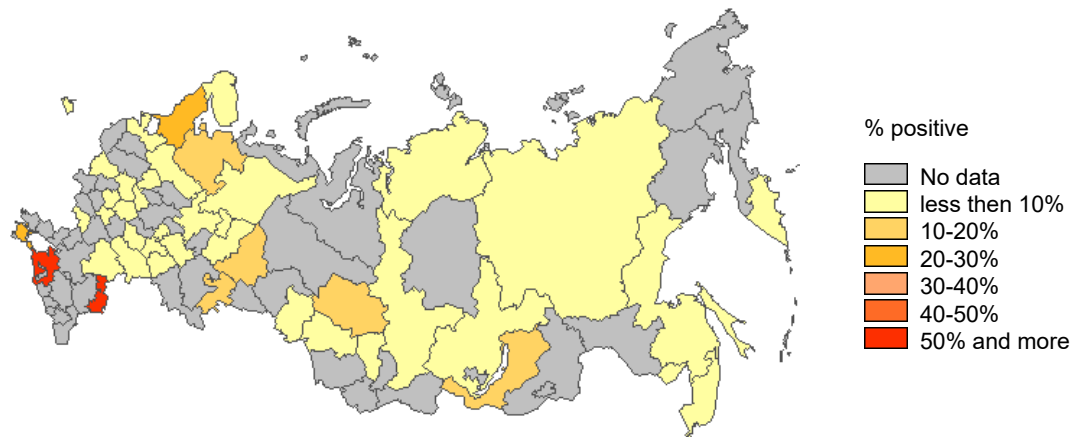


Table 1. Results of influenza and other ARVI detection by RT-PCR in Russia, week 19 of 2024

|   | Number of specimens / number of positive cases | % positive |
|---|--|------------|
| <u>Influenza</u>                          |  |            |
| Number of specimens tested for influenza  | 6590   | -          |
| Influenza A (not subt.)                   | 7  | 0,1%       |
| Influenza A(H1)pdm09                      | 0  | 0,0%       |
| Influenza A(H3)                           | 2  | 0,03%      |
| Influenza B                               | 78   | 1,2%       |
| All influenza                             | 87   | 1,3%       |
| <u>Other ARVI</u>                         |  |            |
| Number of specimens tested for ARVI       | 6520   | -          |
| PIV                                       | 159  | 2,4%       |
| ADV                                       | 65   | 1,0%       |
| RSV                                       | 80   | 1,2%       |
| RhV                                       | 542  | 8,3%       |
| CoV                                       | 142  | 2,2%       |
| MPV                                       | 66   | 1,0%       |
| BoV                                       | 14   | 0,2%       |
| All ARVI                                  | 1068   | 16,4%      |
| <u>SARS-CoV-2 (COVID-19)</u>              |  |            |
| Number of specimens tested for SARS-CoV-2 | 7282   | -          |
| SARS-CoV-2                                | 391  | 5,4%       |

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



**COVID-19.** Totally 24 195 342 cases and 403 037 deaths associated with COVID-19 were registered in Russia including 10 857 cases and 49 deaths in week 19. According to the data obtained by NIC in Saint-Petersburg totally 7982 clinical samples were PCR investigated in last week. Among them coronavirus SARS-CoV-2 detected in 391 (5.4%) cases.

Table 2. Results of influenza viruses isolation in Russia, week 19 of 2024

|                      | Number of specimens / number of viruses | % isolated viruses |
|----------------------|---|--------------------|
| Number of specimens  | 15                                      | -                  |
| Influenza A(H1)pdm09 | 0                                       | 0,0%               |
| Influenza A(H3)      | 13                                      | 86,7%              |
| Influenza B          | 2                                       | 13,3%              |
| All influenza        | 15                                      | 100,0%             |

## Sentinel influenza surveillance

Clinical samples from 43 SARI patients were investigated by rRT-PCR for influenza, no positive cases of influenza were detected. Among 43 SARI patients no positive cases for SARS-CoV-2 were detected. Among 41 SARI samples 2 (4.9%) cases positive for ARVI were detected including: 1 case of ADV and 1 case of RhV infection.

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

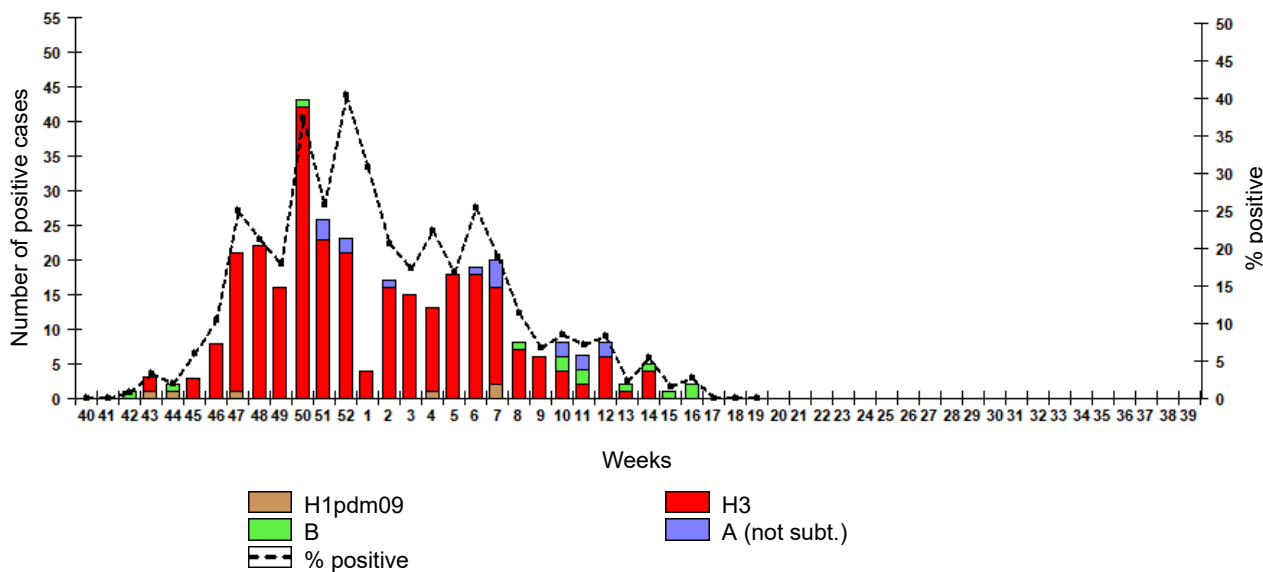


Fig. 10. Monitoring of influenza viruses detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2023/24

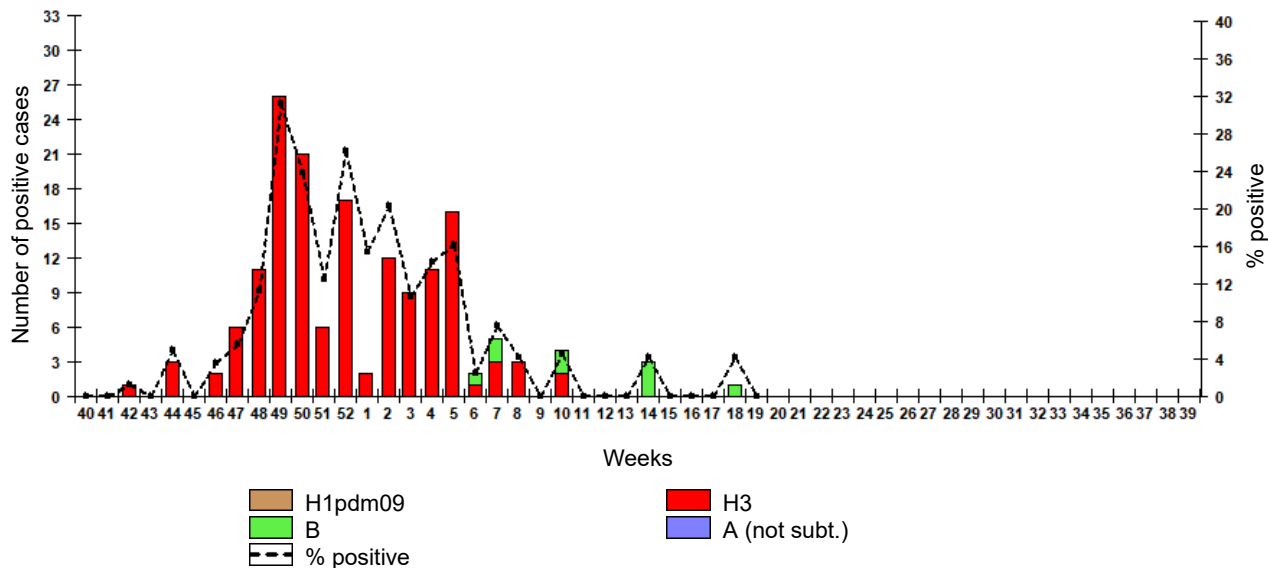


Fig. 11. Monitoring of ARVI detection by RT-PCR among SARI patients in sentinel hospitals, season 2023/24

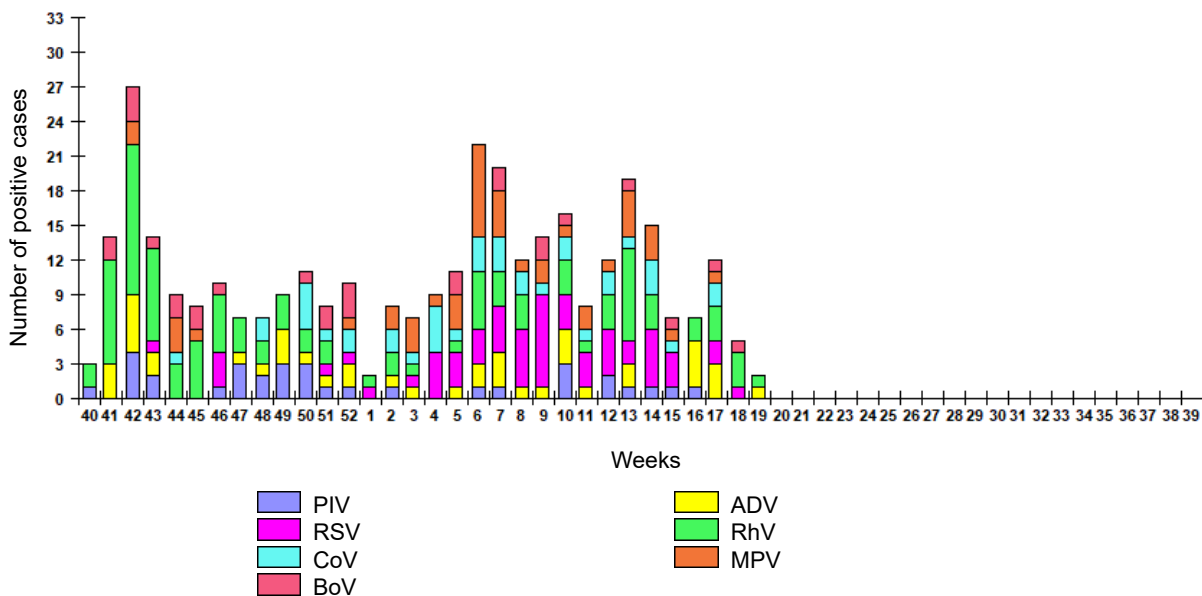


Fig. 12. Monitoring of ARVI detection by RT-PCR among ILI/ARI patients in sentinel polyclinics, season 2023/24

