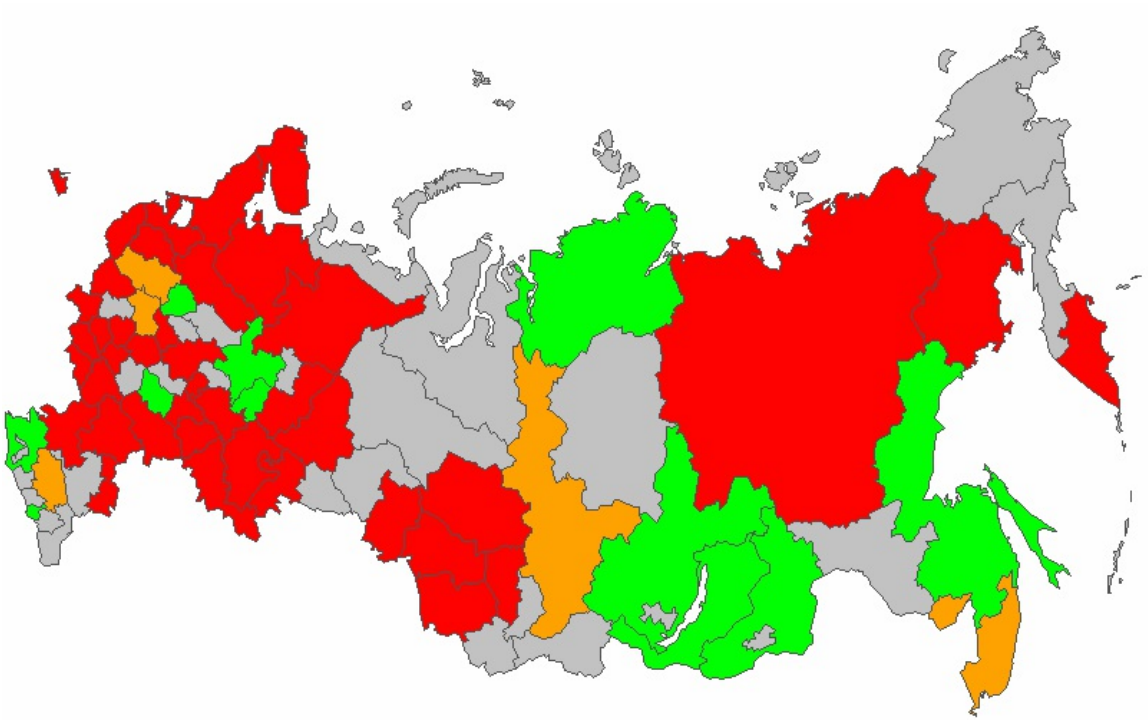
Year: 2016 | Week: 4 | Period: 25.01.2016-31.01.2016

Influenza and ARI morbidity data

Epidemiological data show significant increase of influenza activity in Russia in comparison with previous week. The nationwide ILI & ARI morbidity level (134.3 per 10 000 of population) exceeded the national baseline (69.5 per 10 000) by 93.4%.
ILI and ARI epidemic thresholds were exceeded in 47 of 59 cities collaborating with two WHO NICs in Russia.



Exceeding of morbidity epidemic thresholds for overall population

- No data
- less 20%
- 20 - 49%
- 50% and more

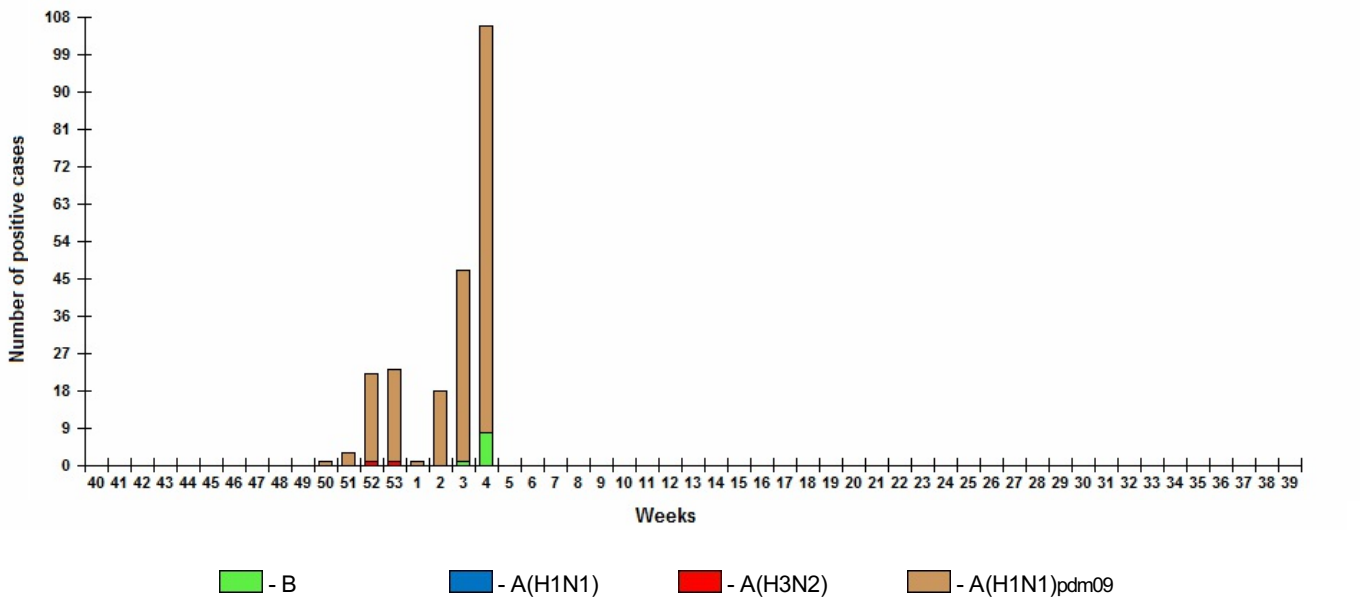
Cumulative number of diagnosed influenza cases

Laboratory diagnosis data. Results of influenza laboratory diagnosis by different tests were submitted by 53 RBLs and two WHO NICs. According to these data as a result of 9882 patients investigation the overall proportion of respiratory samples positive for influenza virus was estimated as 3523 (**35.7%**) including 3248 (92.2%) influenza A(H1N1)pdm09 cases, 118 (3.3%) influenza A(H3N2) cases, 130 (3.7%) influenza A cases and 27 (0.8%) influenza B cases.

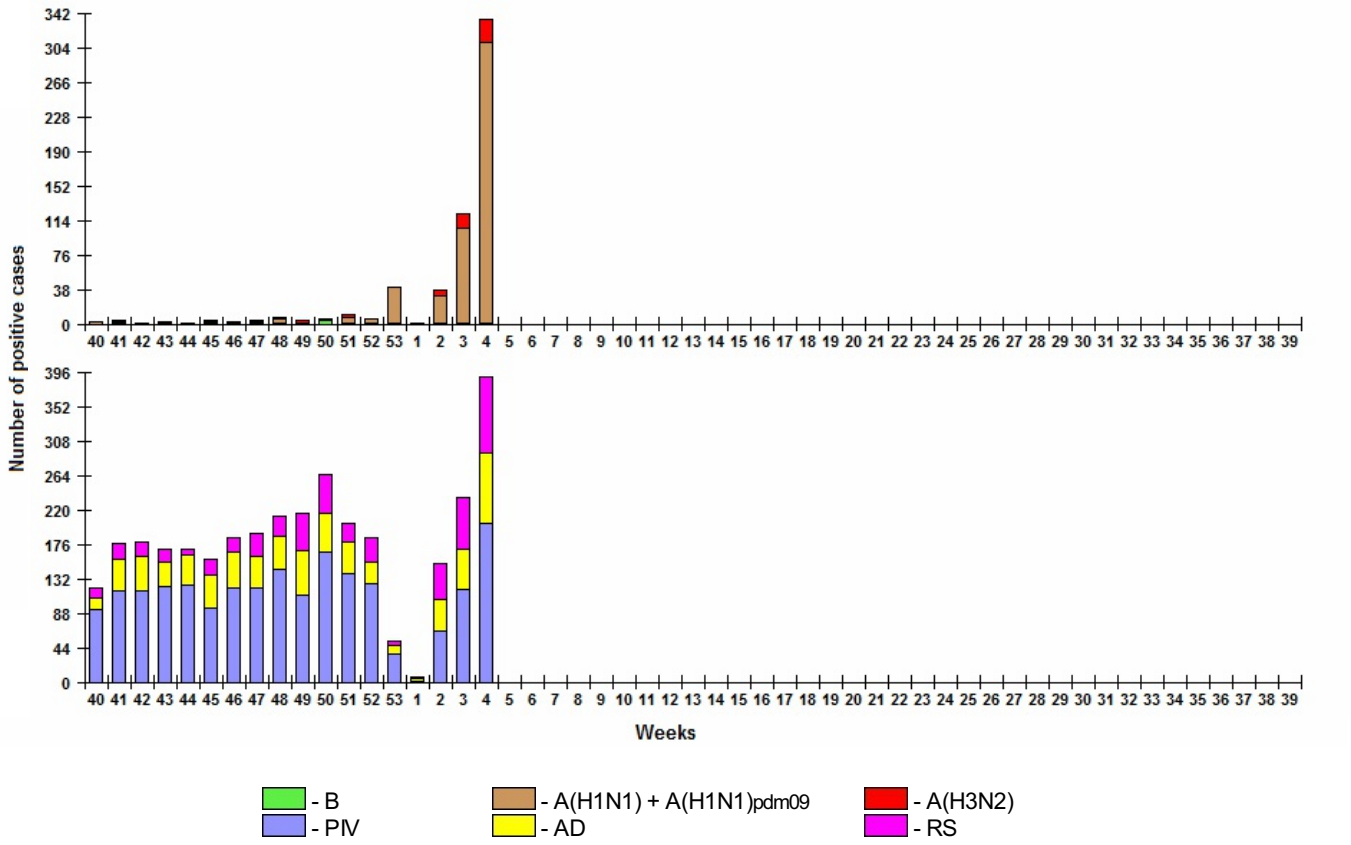
Results of influenza diagnosis

- No data
- No detection
- H1pdm09
- H1pdm09+H1
- H1pdm09+B
- H1pdm09+B+H1
- H1pdm09+H3
- H1pdm09+H3+H1
- H1pdm09+H3+B
- H1pdm09+H3+H1+B
- H1
- B
- B+H1
- H3
- H3+H1
- H3+B
- H3+H1+B

Influenza Virus Isolation



Influenza Virus Antigen Detection by Immunofluorescence Assay (IFA)



Influenza Virus RNA Detection by RT-PCR

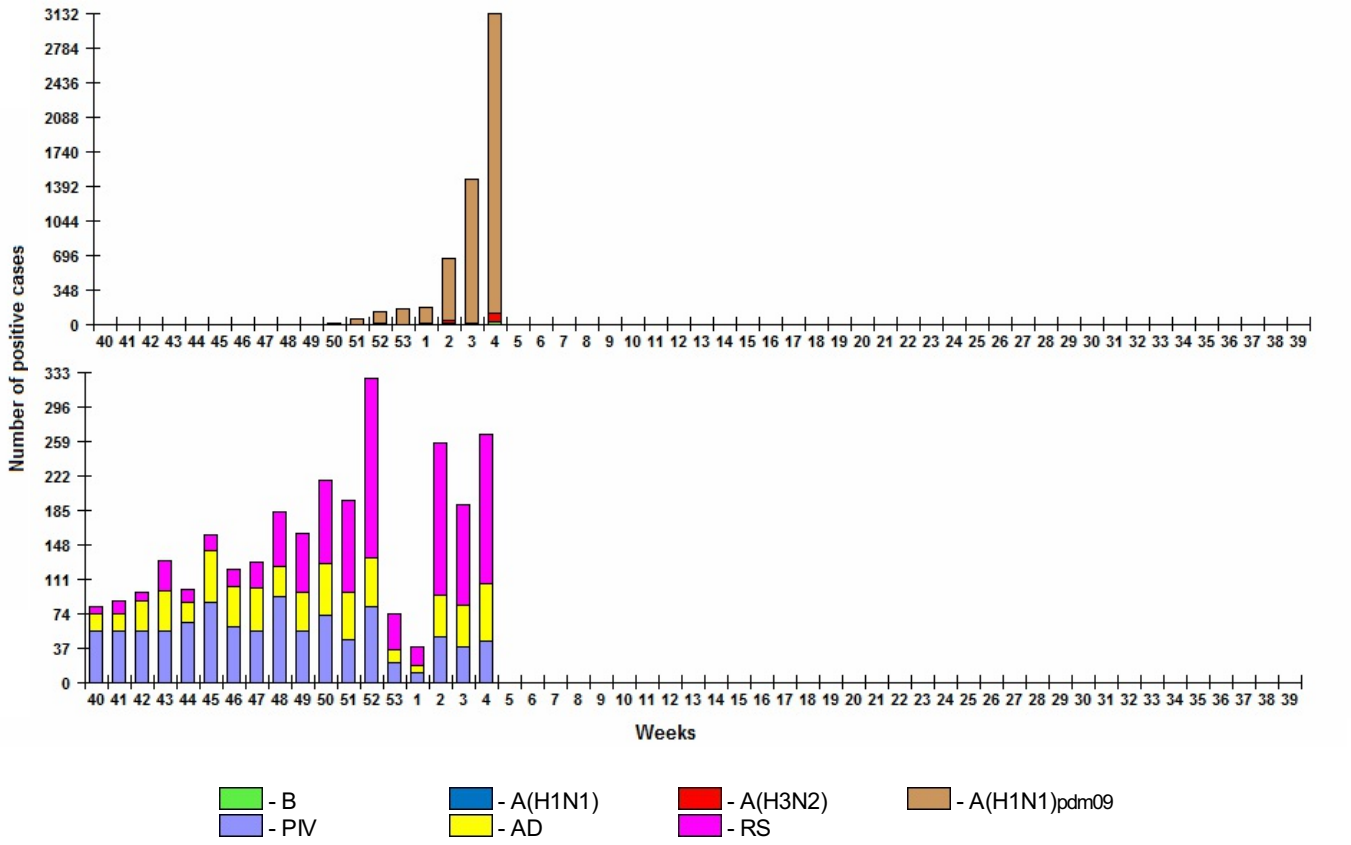


Table N1. Influenza Virus Isolation

Base lab.	Number of investigated patients	Number of viruses isolated					
		H1	H3	B	H1pdm09	Untyped virus	Total
BL of RII	274	0	0	6	62	0	68
(%)		0,0	0,0	2,2	22,6	0,0	24,8
BL of IV	155	0	0	2	36	0	38
(%)		0,0	0,0	1,3	23,2	0,0	24,5
TOTAL	429	0	0	8	98	0	106
(%)		0,0	0,0	1,9	22,8	0,0	24,7

Table N2. Influenza Virus Antigen Detection by Immunofluorescence assay (IFA)

Base lab.	Number of investigated patients	Influenza			Parainfluenza			AD	RS	Total
		H1+H1pdm09	H3	B	I	II	III			
BL of RII	1949	276	26	1	42	57	76	75	95	648
(%)		14,2	1,3	0,05	2,2	2,9	3,9	3,8	4,9	33,2
BL of IV	281	33	0	0	2	0	27	14	3	79
(%)		11,7	0,0	0,0	0,7	0,0	9,6	5,0	1,1	28,1
TOTAL	2230	309	26	1	44	57	103	89	98	727
(%)		13,9	1,2	0,04	2,0	2,6	4,6	4,0	4,4	32,6

Table N3. Influenza Virus RNA detection by RT-PCR

Base lab.	Number of investigated patients	Influenza						PIV	AD	RS
		A (not subtyped)	H1	H3	H5	B	H1pdm09			
BL of RII	6953	148 / 6856	0 / 3191	77 / 5343	0 / 2166	16 / 6953	2533 / 6827	43 / 4062	59 / 4127	143 / 4127
(%)		2,2	0,0	1,4	0,0	0,2	37,1	1,1	1,4	3,5
BL of IV	1291	5 / 1245	0 / 204	15 / 635	0 / 204	7 / 1245	483 / 1291	1 / 429	3 / 429	17 / 429
(%)		0,4	0,0	2,4	0,0	0,6	37,4	0,2	0,7	4,0
TOTAL	8244	153 / 8101	0 / 3395	92 / 5978	0 / 2370	23 / 8198	3016 / 8118	44 / 4491	62 / 4556	160 / 4556
(%)		1,9	0,0	1,5	0,0	0,3	37,2	1,0	1,4	3,5

Table N4. Cumulative Number of Diagnosed Influenza Cases

Base lab.	Number of investigated patients	Number of diagnosed influenza cases						
		H1	H1+H1pdm09 (IFA)	H3	A (not subtyped)	B	H1pdm09	Total
BL of RII	8501	0	276	100	125	23	2756	3004
(%)		0,0	3,2	1,2	1,5	0,3	32,4	35,3
BL of IV	1381	0	33	18	5	4	492	519
(%)		0,0	2,4	1,3	0,4	0,3	35,6	37,6
TOTAL	9882	0	309	118	130	27	3248	3523
(%)		0,0	3,1	1,2	1,3	0,3	32,9	35,7

Conclusion

Influenza and ARI morbidity data. Influenza activity increased significantly on the week 05.2016. The nationwide ILI & ARI morbidity level (134.4 per 10 000 of population) exceeded the national baseline by 93.4%.

Etiology of ILI & ARI morbidity. As a result of investigation of 9882 patients in 53 cities of Russia the overall proportion of respiratory samples positive for influenza in traditional surveillance system was estimated as **35.7%.** Influenza A(H1N1)pdm09 dominated (92.2% of influenza cases). Influenza A(H3N2) and B cases registered sporadically.

In ***sentinel surveillance system*** clinical samples from 95 SARI and 83 ILI/ARI patients were investigated by rRT-PCR. 43 (**45.3%**) influenza cases including 42 influenza A(H1N1)pdm09 and 1 influenza B cases were detected among SARI patients and 37 (**44.6%**) influenza cases including 35 influenza A(H1N1)pdm09 and 2 influenza A(H3N2) cases were detected among ILI/ARI patients.

Antigenic characterization.

Totally 108 influenza A(H1N1)pdm09, 2 influenza A(H3N2) and 5 influenza B viruses were characterizated antigenically in two NICs of Russia since the beginning of the season. According to St.Petersburg NIC data 6 influenza A(H1N1)pdm09 strains were related closely to influenza A/California/07/09 virus. Most of 102 influenza A(H1N1)pdm09 viruses investigated in Moscow NIC were similar to vaccine A/California/07/09 virus however 10 of them had decreased up to 1/16 titer in interaction with antiserum to this virus. Two A(H3N2) strains were similar to influenza A/Hong-Kong/5738/2014 virus, with antiserum to influenza A/Switzerland/9715293/2013 they reacted up to 1/4 - 1/8 of homological titer in HI. All investigated 5 influenza B viruses belonged to Victorian limeage and were similar to influenza B/Brisbane/60/2008 reference strain reacting with antiserum to this virus up to 1/4 - 1/8 of homological titer in HI.

Genetic characterization. 55 investigated influenza A(H1N1)pdm09 virus strains were A/South Africa/3626/2013-like. All viruses bear clade 6B specific mutations in HA (S84N, S162+N and I216T) and formed new genetic group according to phylogenetic analysis. Two A(H1N1)pdm09 sequences obtained directly from autopsy sample showed the presence of additional mutation D222G in HA1.

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