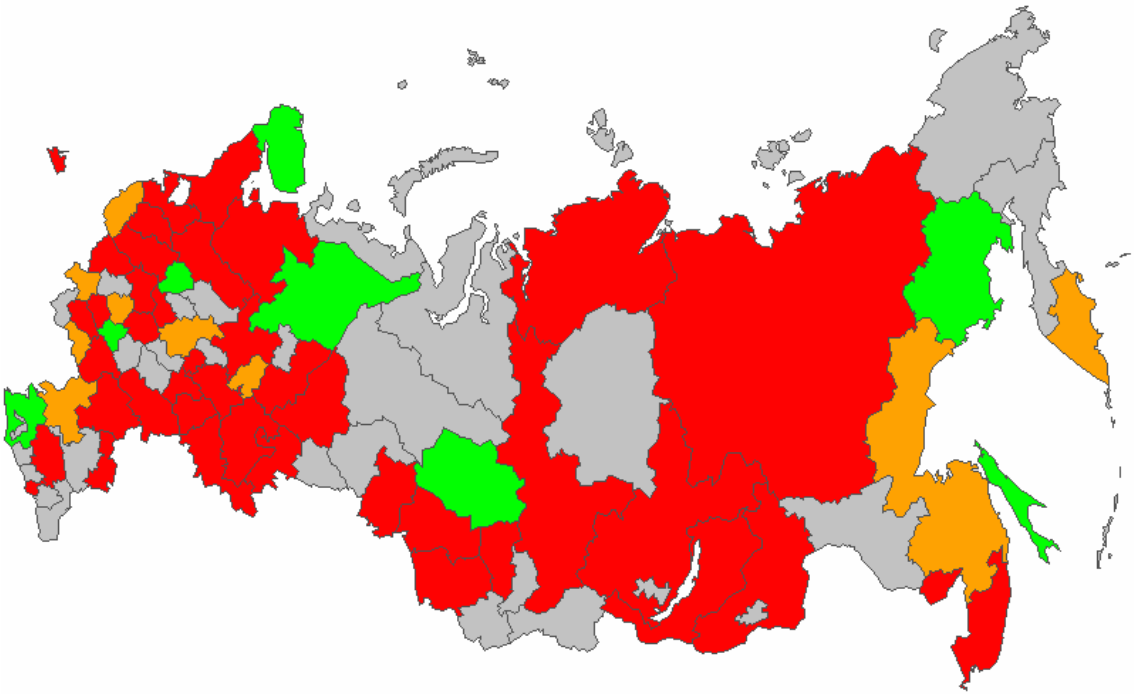
Year: 2011 | Week: 5 | Period: 31.01.2011-06.02.2011

Influenza and ARI morbidity data

Influenza and ARI morbidity data. During the week ending February 06.2011 widespread influenza activity was registered in Russia. Epidemic thresholds of morbidity for overall population specific for each city were exceeded in **51** cities from 59 ones under surveillance. Morbidity level in four of these cities reached up **2.0 - 2.2%**. The nationwide ILI & ARI morbidity level registered this week (**142.7** per 10 000) was higher than the national baseline (62.3) by **129%**.

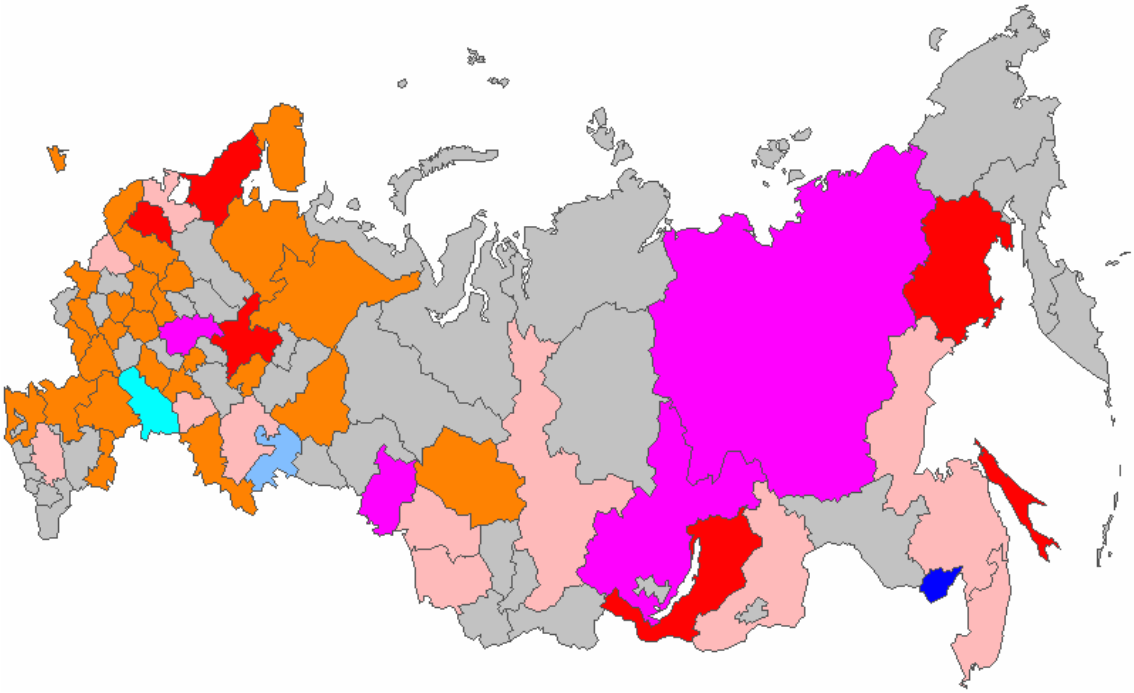


Exceeding of morbidity epidemic thresholds for overall population

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

Cumulative number of diagnosed influenza cases

Cumulative results of influenza diagnosis by different tests were submitted by 53 RBLs. According to these data as a result of analysis of 5599 clinical specimens influenza diagnosis rate was estimated as 0.8% for non-subtyped influenza A virus, as **24.1%** for pandemic influenza A(H1N1)v virus, as **1.4%** for influenza A (H3N2) virus and **7.9%** for influenza B virus (table 4).

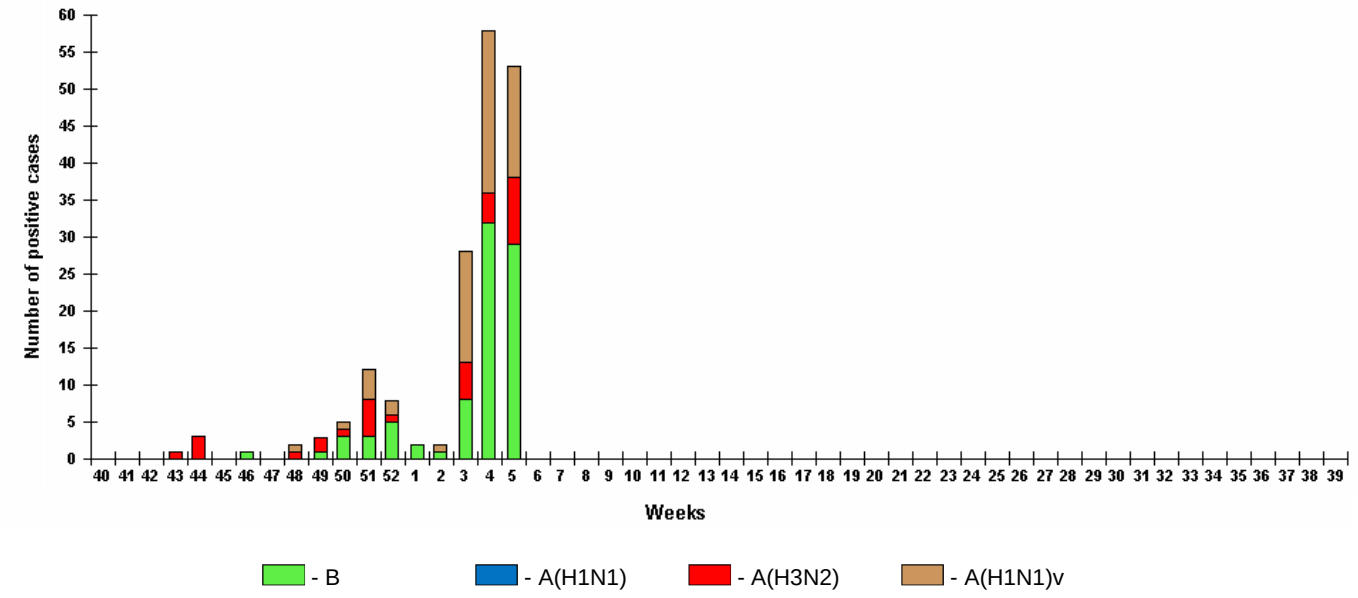


Results of influenza diagnosis

- No data
- No detection
- H1v
- H1v+H1
- H1v+B
- H1v+B+H1
- H1v+H3
- H1v+H3+H1
- H1v+H3+B
- H1v+H3+H1+B
- H1
- B
- B+H1
- H3
- H3+H1
- H3+B
- H3+H1+B

Influenza Virus Isolation

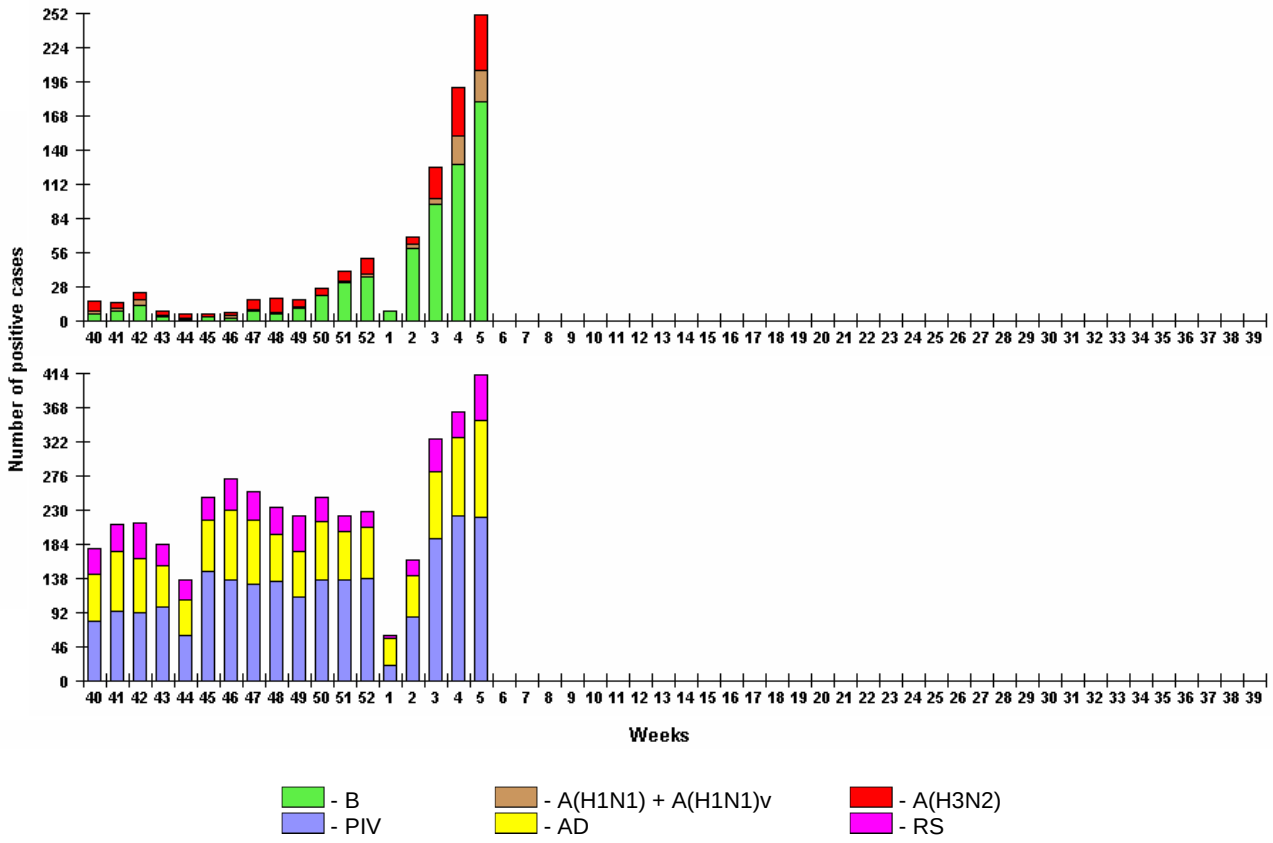
During the reported week (January 31 - February 06.2011) investigations on influenza virus isolation were conducted in 24 Regional Base Laboratories (RBLs) participating in influenza surveillance in collaboration with two WHO NICs (St.-Petersburg, Moscow). As result of 742 clinical samples testing **15 (2.0%)** pandemic A(H1N1)v influenza viruses were isolated in Astrakhan, Ekaterinburg, Kaliningrad, Moscow, St.-Petersburg and Vladivostok, **9 (1.2%)** influenza A(H3N2) viruses were isolated in Vladivostok and Chelabinsk and **29 (3.9%)** influenza B viruses were isolated in Astrakhan, Kaliningrad, Moscow,St.-Petersburg, Orenburg and Vladivostok (table 1).



Influenza Virus Antigen Detection by Immunofluorescence Assay (IFA)

Clinical specimens from 2896 patients with ILI and ARI were investigated by IFA in 47 RBLs for detection of antigens of influenza viruses, parainfluenza, RSV and adenoviruses. A total of **251 (8.7%)** influenza cases were diagnosed including:
- 26 (0.9%) influenza (H1N1+H1N1v) cases in 2 cities,
- 45 (1.6%) influenza A(H3N2) cases in 13 cities,
- 180 (6.2%) influenza B cases in 25 cities.

Mid-value for IFA detection of influenza and other respiratory viruses in the country was estimated as **22.9%**, including non-influenza respiratory viruses as **14.2%** accounting as 7.6%, 4.5% and 2.1% for parainfluenza, adeno- and RS-viruses, correspondingly (table 2).



Influenza Virus RNA Detection by RT-PCR

During this week clinical samples from ILI and ARI patients were investigated by RT-PCR in 53 RBLs. Different number of patients was investigated at detection of influenza, parainfluenza, RSV and adenoviruses. Pandemic influenza A(H1N1)v virus was detected in **36.0%** of 3739 patients, influenza A (H3N2) virus in **2.9%** of 1117 patients, influenza B virus in **9.1%** of 3816 investigated patients. No seasonal influenza A(H1N1) or influenza A(H5N1) cases were detected. Rate of PCR diagnosis of other respiratory infections was estimated as **4.2%** including parainfluenza in 2.0%, adenovirus infection in 1.4%, RSV infection in 0.8% of investigated patients (table 3).

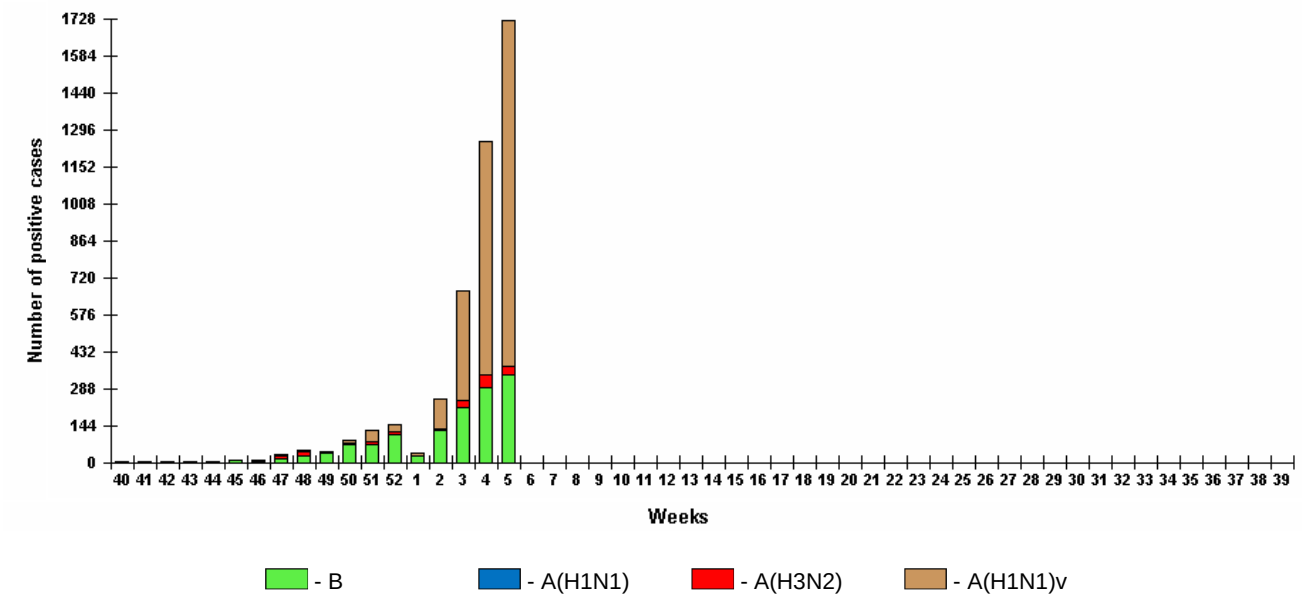


Table N1. Influenza Virus Isolation

Base lab.	Number of investigated patients	Number of viruses isolated					
		H1	H3	B	H1v	Untyped virus	Total
BL of RII	643	0	1	19	12	1	33
(%)		0,0	0,2	3,0	1,9	0,2	5,1
BL of IV	99	0	8	10	3	0	21
(%)		0,0	8,1	10,1	3,0	0,0	21,2
TOTAL	742	0	9	29	15	1	54
(%)		0,0	1,2	3,9	2,0	0,1	7,3

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

Base lab.	Number of investigated patients	Influenza			Parainfluenza			AD	RS	Total
		H1+H1v	H3	B	I	II	III			
BL of RII	2445	26	37	170	17	51	107	112	48	568
(%)		1,1	1,5	7,0	0,7	2,1	4,4	4,6	2,0	23,2
BL of IV	451	0	8	10	2	10	33	19	13	95
(%)		0,0	1,8	2,2	0,4	2,2	7,3	4,2	2,9	21,1
TOTAL	2896	26	45	180	19	61	140	131	61	663
(%)		0,9	1,6	6,2	0,7	2,1	4,8	4,5	2,1	22,9

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	H1v			
BL of RII	3304	25 / 2809	0 / 903	22 / 1029	0 / 556	312 / 2861	941 / 2784	21 / 972	11 / 543	6 / 884
(%)		0,9	0,0	2,1	0,0	10,9	33,8	2,2	2,0	0,7
BL of IV	955	5 / 259	0 / 0	10 / 88	0 / 0	34 / 955	406 / 955	4 / 264	0 / 264	3 / 264
(%)		1,9	-	11,4	-	3,6	42,5	1,5	0,0	1,1
TOTAL	4259	30 / 3068	0 / 903	32 / 1117	0 / 556	346 / 3816	1347 / 3739	25 / 1236	11 / 807	9 / 1148
(%)		1,0	0,0	2,9	0,0	9,1	36,0	2,0	1,4	0,8

Table N4. Cumulative Number of Diagnosed Influenza Cases

Base lab.	Number of investigated patients	Number of diagnosed influenza cases						
		H1	H1+H1v (IFA)	H3	A (not subtyped)	B	H1v	Total
BL of RII	4497	0	26	56	38	394	942	1430
(%)		0,0	0,6	1,2	0,8	8,8	20,9	31,8
BL of IV	1102	0	0	24	5	48	408	485
(%)		0,0	0,0	2,2	0,5	4,4	37,0	44,0
TOTAL	5599	0	26	80	43	442	1350	1915
(%)		0,0	0,5	1,4	0,8	7,9	24,1	34,2

Conclusion

Influenza and ARI morbidity data. During the week ending February 06.2011 widespread influenza activity was registered in Russia. Epidemic thresholds of morbidity for overall population specific for each city were exceeded in 51 cities from 59 ones under surveillance. Morbidity level in four of these cities reached up **2.0 - 2.2%**. The nationwide ILI & ARI morbidity level registered this week (**142.7** per 10 000) was higher than the national baseline (62.3) by **129%**.

Etiology of ILI & ARI morbidity. The overall proportion of respiratory samples tested positive for influenza by virus isolation, IFA and rRT-PCR was estimated as **34.2%**. Pandemic influenza A(H1N1)v and B viruses dominated in etiology of morbidity in Russia. According to sentinel surveillance data investigation of clinical samples from 36 SARI patients in 7 cities showed 14 influenza pandemic A(H1N1)v cases, 1 influenza A(H3N2) case and 5 influenza B cases.

Since week 40.2010, 43 influenza viruses were characterized antigenically: 27 were A(H1N1)v pandemic influenza virus A/California/07/09 like, 10 were influenza virus A(H3N2) A/Perth/16/09 like and 7 were influenza virus B/Brisban/60/08 like (B/Victoria/2/87 lineage).

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