INTEGRATED DATA OF INFLUENZA MORBIDITY AND DIAGNOSIS

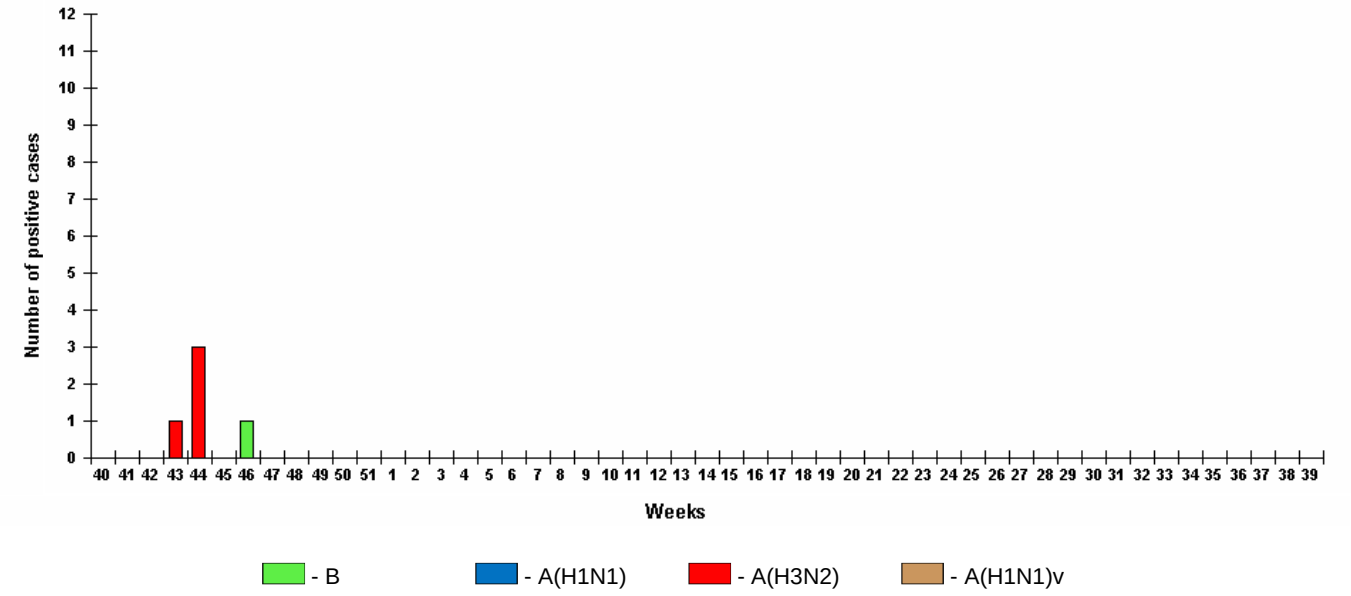
Year: 2010 | Week: 47 | Period: 22.11.2010-28.11.2010

Exceeding of morbidity epidemic thresholds for overall population

Results of influenza diagnosis

Influenza Virus Isolation

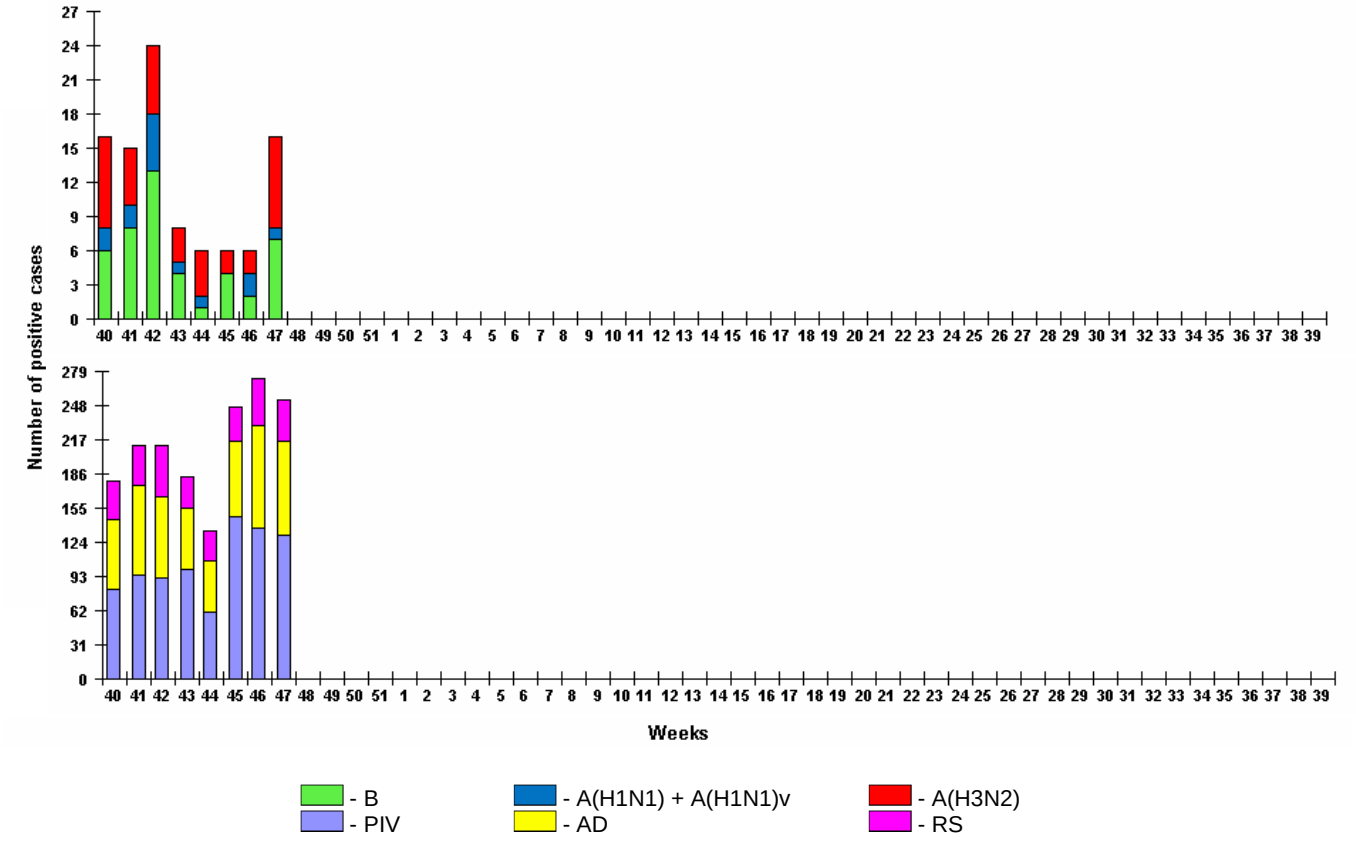
During the reported week (November 22 - 28.2010) investigations on influenza virus isolation were conducted by 13 Regional Base Laboratories (RBLs) participating in influenza surveillance in collaboration with two WHO NICs (St.-Petersburg, Moscow). Totally 222 clinical samples were investigated. No influenza virus was isolated (table 1).



Influenza Virus Antigen Detection by Immunofluorescence Assay (IFA)

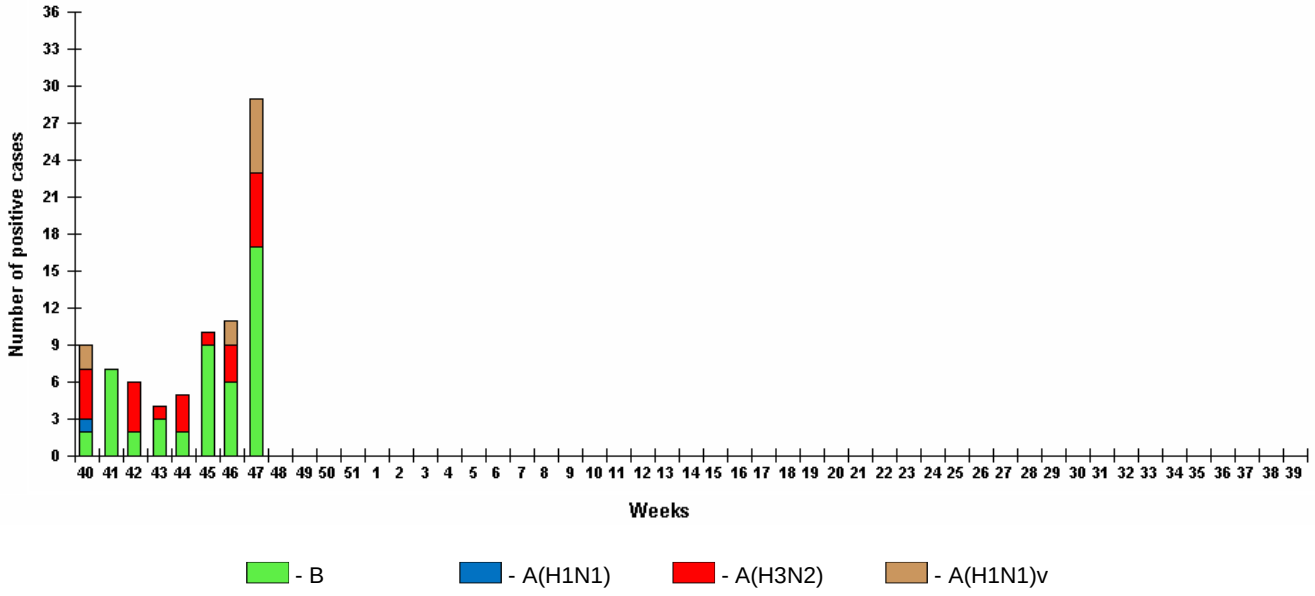
Clinical specimens from 981 patients with influenza and ARVI were investigated by IFA in 41 RBLs for detection of antigens of influenza viruses, parainfluenza, RSV and adenoviruses. A total of **16 (1.6%)** influenza cases were diagnosed including:
- 1 (0.1%) influenza (H1N1+H1N1v) cases in 1 city,
- 8 (0.8%) influenza A(H3N2) cases in 4 cities,
- 7 (0.7%) influenza B cases in 1 city.

Mid-value for IFA detection of influenza and other non-influenza respiratory viruses in the country was estimated as **27.4%**, including non-influenza respiratory viruses as **25.9%** accounting as 13.4%, 8.7% and 3.8% for parainfluenza, adeno- and RS-viruses, correspondingly (table 2).



Influenza Virus RNA Detection by RT-PCR

During this week clinical samples from ARVI patients were investigated by RT-PCR in 42 RBLs. Different number of patients was investigated at detection of influenza, parainfluenza, RSV and adenoviruses. Non-subtyped influenza A virus was recognized in **0.2%** as result of investigation of 1004 patients, pandemic influenza A(H1N1)v virus in **1.0%** of 630 patients, influenza A(H3N2) virus in **2.4%** of 255 patients, influenza B virus in **1.7%** of 1025 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 **11.5%** including parainfluenza in 2.1%, adenovirus infection in 8.6% and RSV infection in 0.8% of investigated patients (table 3).



Cumulative number of diagnosed influenza cases

Cumulative results of influenza diagnosis were submitted by 45 RBLs. According to these data as a result of analysis of 1370 clinical specimens influenza diagnosis rate was estimated as 0.1% for non-subtyped influenza A, as 0.4% for pandemic influenza A(H1N1)v, as 0.8% for influenza A(H3N2), and 1.0% for influenza B (table 4).

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	153	0	0	0	0	0	0
(%)		0,0	0,0	0,0	0,0	0,0	0,0
BL of IV	69	0	0	0	0	0	0
(%)		0,0	0,0	0,0	0,0	0,0	0,0
TOTAL	222	0	0	0	0	0	0
(%)		0,0	0,0	0,0	0,0	0,0	0,0

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	858	1	7	0	25	39	45	80	33	230
(%)		0,1	0,8	0,0	2,9	4,5	5,2	9,3	3,8	26,8
BL of IV	123	0	1	7	1	3	18	5	4	39
(%)		0,0	0,8	5,7	0,8	2,4	14,6	4,1	3,3	31,7
TOTAL	981	1	8	7	26	42	63	85	37	269
(%)		0,1	0,8	0,7	2,7	4,3	6,4	8,7	3,8	27,4

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	890	2 / 831	0 / 198	5 / 216	0 / 81	10 / 852	6 / 630	4 / 249	29 / 272	2 / 272
(%)		0,2	0,0	2,3	0,0	1,2	1,0	1,6	10,7	0,7
BL of IV	173	0 / 173	0 / 0	1 / 39	0 / 0	7 / 173	0 / 0	3 / 90	2 / 90	1 / 90
(%)		0,0	-	2,6	-	4,0	-	3,3	2,2	1,1
TOTAL	1063	2 / 1004	0 / 198	6 / 255	0 / 81	17 / 1025	6 / 630	7 / 339	31 / 362	3 / 362
(%)		0,2	0,0	2,4	0,0	1,7	1,0	2,1	8,6	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	1138	0	0	9	2	7	6	24
(%)		0,0	0,0	0,8	0,2	0,6	0,5	2,1
BL of IV	232	0	0	2	0	7	0	9
(%)		0,0	0,0	0,9	0,0	3,0	0,0	3,9
TOTAL	1370	0	0	11	2	14	6	33
(%)		0,0	0,0	0,8	0,1	1,0	0,4	2,4

Conclusion

During the week ending November 28.2010 the overall proportion of respiratory samples tested by virus isolation, IFA and rRT-PCR positive for influenza was estimated as **2.4%**. Epidemic threshold for separate cities was exceeded in 1 of 59 collaborating RBL (Ekaterinburg), morbidity level in this city was not hight (0.6%). Nationwide ILI and ARVI morbidity level (59.1 per 10 000) was lower than the national baseline (62.3 per 10 000). Acute respiratory morbidity was caused mainly by parainfluenza and adenoviruses according to both rRT-PCR and IFA results.

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