

# Russian Federation



**Capital:** *Moscow*

**Infant Mortality Rate:** *7.19/1,000 live births*

**Population:** *142,500,482 (July 2013 est.)*



## Overview

CDC and the Russian Federation began their partnership to enhance the level of preparedness and response to annual influenza epidemics and future pandemics in 2011. The Research Institute of Influenza (RII) in St. Petersburg and the D.I. Ivanovsky Research Institute of Virology (IIV) in Moscow are recognized by the World Health Organization (WHO) as a National Influenza Centers (NIC). The NIC at RII continues to provide technical assistance and training to ensure the functionality of the sentinel surveillance system in Russia and Commonwealth of Independent States (CIS) countries. Revisions to the state pandemic plan and regional pandemic plans are currently underway.

## Highlights

- Improved infrastructure of routine surveillance for influenza-like illness (ILI) and acute respiratory infection (ARI) for rapid recognition of influenza epidemics.
- Strengthened capacity of the sentinel surveillance system for determination of virus pathogenicity and groups risk for severe acute respiratory infection (SARI).
- Procured reagents and protocols for identification of potentially pandemic H2, H5, and H7 viruses.
- Prepared a draft of the Rospotrebnadzor Order for sustainability planning in Russia.
- Established an internet connection between the NICs and 59 collaborating regional base laboratories (cRBL) at the local Federal Centers for Hygiene and Epidemiology.

## Surveillance

Influenza activity at RII and IIV is based on collaboration with 59 regional base laboratories (RBL). The RBLs send weekly data to the NICs on acute respiratory infections (ARI) and influenza-like illness (ILI) morbidity, hospitalization and death cases as well as laboratory data on virus isolation, immunofluorescence assay (IFA) and RT-PCR data. Russia has implemented real-time RT-PCR in 55 RBLs for influenza surveillance. The majority of isolates are forwarded to the NICs for antigenic and genetic investigation. In addition, sentinel surveillance for SARI is established in 17 hospitals. Influenza surveillance data were used to determine the impact of influenza and ARI for the 2012–2013 influenza season in St. Petersburg, which was used as a model to develop an index for the country as a whole. Risk factors for SARI and death cases were determined through analysis of data obtained from the traditional and sentinel surveillance systems.

In FY 2013, Russia received emergency supplemental funding to enhance SARI surveillance for H7N9. Funding will be used to introduce a new SARI case definition, based on the WHO EURO definition, at each of the nine regional SARI sites. Utilization of the new definition will increase the number of SARI cases investigated, as the previous definition was based on more narrow criteria. Funding will also be used to establish an additional SARI sentinel site in both Moscow and Stavropol.

## Surveillance Activities

- Conducted supervisory visits jointly with CDC to sentinel sites and cRBLs in St. Petersburg and Vladimir (December 2011).
- Issued MDCK cells for all cRBLs for virus isolation during the 2012–2013 and the 2013–2014 seasons.

- Presented at the “Diagnostics and Prophylaxis of Infectious Diseases” Conference in Novosibirsk.
- Two scientists participated in a WHO/Euro Conference in May 2013.

## Laboratory

The Russian NIC at RII has worked closely with CDC to establish state-of-the-art laboratories. Notable progress in laboratory surveillance capacity has been achieved over the past years, and the success of this partnership has led to significant enhancements benefiting both Russia and the GISRS. The Russian traditional influenza surveillance network now includes 59 laboratories throughout Russia which are working in collaboration with two NICs in St. Petersburg and Moscow. The sentinel influenza surveillance network now includes eight laboratories throughout Russia which work together with 17 hospitals and 12 ambulances and in close collaboration with the St. Petersburg NIC to conduct SARI and ILI/ARI surveillance.

### Laboratory Activities

- Conducted training for laboratory workers from seven CIS countries on rRT-PCR analysis and virus sequencing on the RII base during May–June 2013 with WHO EURO support.
- Increased the percent of virus isolation by introducing rRT-PCR in cRBLs.
- Tested 9,228 specimens during the 2012–2013 season and 1,338 influenza viruses were isolated (NICs at RII and IIV and 37 collaborating RBLs).
- Tested 61,713 specimens and 11,961 of them were positive for influenza during the 2012–2013 season (two NICs at RII and IIV and 55 collaborating RBLs).
- Submitted 96 influenza viruses in a lyophilized condition during the 2012–2013 season to WHO CCs in Atlanta and London.
- Provided consultative support and material backing (stocks of MDCK cells, mediums, plastics and PCR kits) to collaborating laboratories in SARI surveillance.
- Deposited 517 new viruses in the virus collection of RII in 2013.

## Preparedness

Through support from CDC and WHO, Russia has considerably updated and improved its pandemic influenza preparedness plan, which could be used as a model for updating pandemic plans in other countries after adjusting for specific country resources and situations. An analysis of the usefulness of the previous pandemic plan during the pandemic was conducted at RII and the first draft of an updated influenza preparedness pandemic plan was developed at RII.

## Preparedness Activities

Issued a series of Federal and Regional documents by the Federal Service on Customers Rights Protection and Human Well-being Surveillance:

- Guidelines #3.1.2.004–10 criteria for the calculation of the available stock of medicines and reagents, equipment and individual means of defense and disinfections for the period of an influenza pandemic (Moscow, Rospotrebnadzor, 2010).
- Regional Influenza Pandemic Preparedness Plan and the use of prophylactic measures for the period 2012–2015 was approved by governors of the Russian Federation regions.
- Regional plans for countermeasures against an influenza pandemic caused by a highly pathogenic virus were approved by governors of the Russian Federation regions.
- Annual Decree of the Chief Sanitary Inspector G.G. Onischenko “Measures of prophylactics of Influenza and ARI” (6 August 2012 #43) was issued.
- New reagents for the detection of influenza A(H7N9) virus and instructions for their application, for virus identification were prepared by RII in 2013.

## Training

- Attended the Options for the Control of Influenza VIII Conference and provided poster presentations (four scientists from RII and two from IIV) in Cape Town, South Africa.
- Trained two specialists from the NIC at RII on virus isolation, identification and antigenic analysis including antigenic cartography method and susceptibility to antivirals at the WHO CC London.

## Publications

Grudin M.P., Komissarov A.B., Pisareva M.M., Stukova M.A., Buzitskaya J.V., Pyankova A.A., Elpaeva E.A., Zadonskaya A.V., Ivanov Y.V., Kiselev O.I. Genetic Diversity and Molecular Evolution of the Influenza A Viruses in Russia during 2006–2012. *Voprosy virusologii (Problems of Virology)*, 2012, vol.57, #6 p.37–42 (RU).

Lobova T.G., Prokopets A.V., Komissarov A.B., Danilenko D.M., Pyankova A.A., Sukhovetskaya V.F., Gudkova T.M., Grigorieva B.A., Grudin M.P., Eropkin M.Yu. Evolutionary Variability of Influenza B Viruses in Russian Federation in 2005–2012. *Voprosy virusologii (Problems of Virology)*, 2012, vol.57, #6 p.22–26 (RU).

Sominina A.A. Grudin M.P., Eropkin M.Yu. Smorodintseva E.A., Pisareva M.M., Komissarov A.B., Konovalova N.I., Danilenko T.M., Gudkova T.M., Kiselev O.I. Development of influenza surveillance in Russia in the System of the \WHO National Influenza Center. *Voprosy virusologii (Problems of Virology)*, 2012, vol.57, #6 p.17–21 (RU).