SURVEILLANCE AND LABORATORY DIAGNOSTICS OF INFECTIOUS DISEASES IN THE RUSSIAN FEDERATION

FEDERAL SERVICE OF SURVAILLANCE IN THE FIELD OF CONSUMER RIGHT PROTECTION & HUMAN WELFARE, RUSSIA

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Russia priorities of the international cooperation

- G8 decisions on the infectious diseases control (Russia, 2006; Germany, 2007; Japan, 2008)
- Obligations on of the international medicosanitary rules (2005)
- Activity within the framework of the WHO European office
- Program of cooperation in the field of sanitary protection of territories of states-participants of the CIS from import and distribution of especially dangerous infections
- Cooperation with other international organizations
STRATEGY AND TACTICS OF INFECTIOUS DISEASES CONTROL

G8 decisions on infectious diseases control (Russia, 2006)

International Med-Sanitary rules coming into force (2005)
Global strategy of infectious diseases control

1. Application of modern information, forecast-modelling, monitoring, diagnostic, preventive, industry technologies and system of a professional training

2. Creation and maintenance of the technological basis for the prevention, early revealing, operative reaction and liquidation of biological incidents

3. Development of organizational, methodical, tactical, legal questions
Russia tactics on realization of decisions of Summit and IHR (2005)

- Strengthening of material base of Stationary laboratory networks of the State sanitary epidemiological surveillance system

- Mobile specialized antiepidemic brigades modernization
The infectious (parasitic) diseases demanding carrying out of actions on sanitary protection of Russia

<table>
<thead>
<tr>
<th>Nosological form</th>
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<tbody>
<tr>
<td>Smallpox</td>
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<tr>
<td>The poliomyelitis caused by the wild polyovirus</td>
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<tr>
<td>The human flu caused by a new subtype</td>
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<td>Heavy sharp respiratory syndrome</td>
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<tr>
<td>Cholera</td>
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<tr>
<td>Plague</td>
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<td>Yellow fever</td>
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<tr>
<td>Lass fever</td>
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<tr>
<td>Disease, caused by a Marburg virus</td>
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<tr>
<td>Disease, caused by a Ebola virus</td>
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<tr>
<td>Malaria</td>
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<tr>
<td>Western Nile Fever</td>
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<tr>
<td>Crimea-Congo hemorrhagic fever</td>
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<tr>
<td>Dengue fever</td>
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<tr>
<td>Rift Valley Fever</td>
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<tr>
<td>Meningitis</td>
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Laboratory tests of human and environmental materials to identify dangerous infections

There are 69 laboratories to diagnose especially dangerous infectious diseases in Russia. They are based in the of Hygiene and epidemiology centers (Rospotrebnadzor).

<table>
<thead>
<tr>
<th>Year</th>
<th>The number of tests</th>
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<tbody>
<tr>
<td>2005</td>
<td>657 947</td>
</tr>
<tr>
<td>2006</td>
<td>691 376</td>
</tr>
<tr>
<td>2007</td>
<td>750 000</td>
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Organizational, scientific and material strengthening of a national laboratory network

Introduction in practice of the technologies based on the causative agent’s genome and proteome analysis, multiplex, microvolumetric methods

Diagnostic, prophylaxis and treatment methods and means based on nanotechnologies and nanomaterials, introduction in practice of public health services
Laboratory network for indication, specific diagnostics, typing and monitoring of dangerous infectious (parasitic) causative agents

- Regional centers on monitoring of infectious and parasitic diseases' causative agents I-IV groups of pathogenicity (Russian classification)
- Centers of indication and diagnostics in Federal districts of Russia
- Reference-centers on causative agents monitoring in IHR frameworks (2005)
- National centers of diagnostic activity verification
7 Regional centers on monitoring of infectious and parasitic disease causative agents II-IV groups of pathogenicity (Russian classification)

19 Regional centers on monitoring of infectious and parasitic disease causative agents I-II groups of pathogenicity (Russian classification)

FUNCTIONS

- Bacteriological, virologic, serologic, parasitologic, molecular-genetic assays
- Study of etiological factors of infectious and parasitic diseases
FUNCTIONS

- Indication and diagnostics of dangerous infectious diseases (bacterial and virus)
- Study of etiological factor to prevent or to liquidate extreme situations

METHODS

- Express-diagnostic (MFA, bacterioscopy)
- Speed diagnostic (PCR, ELISA, serologic reaction)
- Full bacteriological analysis
17 Reference-centers on causative agents monitoring in IHR frameworks (2005) based on research institutions

**FUNCTIONS**

- Advisory and practical help to health care establishments and services;
- Identification and study of biological, molecular-genetic, biochemical characteristics of causative agents of infectious and parasitic diseases;
- Detection of cultures with atypical properties;
- New agents detection
4 national centers of diagnostic activity verification based on epidemiology and microbiology research institutions

FUNCTIONS

- Verification of results of diagnostics carried out by the Centers of indication and diagnostics
- Identification of dangerous infectious causative agents diseases of unknown etiology with heavy symptoms
- Molecular-epidemiology analysis
- Study of virologic, bacteriological, molecular-biological, serological, immunochemical properties of especially dangerous causative agents
4 National centers as state collections

- Collection Safety Maintenance (I-II groups of pathogenicity)
- Antiterrorist security
- Modern access control and storage equipment
- Increase of reliability and storages terms of microbe cultures
- Maintenance of the basic biological properties of microorganisms
- Strain certification and databases creation
Federal Target Program
«National system of chemical and biological safety of the Russian Federation (2009 - 2013 )»

Government Russian Decision (Ocrober 27, 2008, No. 791)

The Government of the Russian Federation decides:
1. To ratify the applied federal target program "National system of chemical and biological safety of the Russian Federation (2009-2013)".

PURPOSE OF THE PROGRAM
Consecutive decrease of influence of dangerous biological factors on the population, biosphere, technosphere and ecological systems to a comprehensible risk level
PRIORITY DIRECTIONS OF THE PROGRAM

- Current situation analysis, coordination of involved agencies’ interaction
- Strengthening of material base of the organizations which are carrying out the control (supervision) and monitoring
- Analysis of Russian methodical base on the biological safety, scientific substantiation on its perfection
- Risk reduction from biological danger sources for population health for environment
- Development of uniform scientific-methodical approaches, technologies and protection means against influence of dangerous biological factors
- Increase of the level of knowledge of the population, a professional training, creation of risks management tools
Development of GIS-technologies and forecast-modelling systems for estimation of biological danger of especially dangerous infections epidemics

- Electronic maps for carrying out of monitoring
- Databases with geographical binding
- Agents monitoring
- Mathematical model and the program of Russian territories differentiation on epidemic danger degree
- Russia territory typification on nosologic forms of diseases
Russian Federation - the donor of the international help to public health services of the countries with insufficient resources

$32\text{ mln.}$ – Russian contribute to the Global Fund (2006 – 2007);

$20\text{ mln.}$ – Russian contribute to the program on combating malaria in Africa (2006);

$1,8\text{ bln.}$ Russia planned contribute to AIDS and Viral Hepatitis Program (2006 – 2010);

$217\text{ mln.}$ intended previously for financing projects in Russia will be backed to the Global Fund in 2006

According official G8 Summit web-site