The National Telemedicine System is effective facility for improvement over health services to population in the Russian Federation

Mikhail Ya. Natzenzon
Chairman of Board of the “National Telemedicine Agency” Research-and-Production Union, General Director of the “TANA Telemedicine Services Ltd.”, Deputy Head of the Working Group for Telemedicine of the ITU-D sector of the International Telecommunication Union (ITU), Deputy Head of the Regional Working Group for Telemedicine of the Regional Commonwealth for Communication of the CIS Countries
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, Malaria and others diseases:
  – Halt and begin to reverse the spread of HIV/AIDS
  – Halt and begin to reverse the incidence of malaria and other major diseases

"We will have time to reach the Millennium Development Goals – worldwide and in most, or even all, individual countries – but only if we break with business as usual. We cannot win overnight. Success will require sustained action across the entire decade between now and the deadline. It takes time to train the teachers, nurses and engineers; to build the roads, schools and hospitals; to grow the small and large businesses able to create the jobs and income needed. So we must start now. And we must more than double global development assistance over the next few years. Nothing less will help to achieve the Goals."

*United Nations Secretary-General*
The Fifty-eighth World Health Assembly,

Noting the potential impact that advances in information and communication technologies could have on health-care delivery, public health, research and health-related activities for the benefit of both low- and high-income countries;

Aware that advances in information and communication technologies have raised expectations for health;

Stressing that e-Health is the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research,

URGES Member States:

- to consider drawing up a long-term strategic plan for developing and implementing e-Health services in the various areas of the health sector, including health administration, which would include an appropriate legal framework and infrastructure and encourage public and private partnerships;

- to develop the infrastructure for information and communication technologies for health as deemed appropriate to promote equitable, affordable, and universal access to their benefits, and to continue to work with information and telecommunication agencies and other partners in order to reduce costs and make e-Health successful;

From WHA58.28 e-Health Resolution
leading developer and supplier of telemedicine systems in Russia based on the newest information and telecommunication technologies, proposes to interested organizations the cooperation in creation in the Russian Federation of the National telemedicine system based on use of Mobile Telemedicine Complexes.

Availability of such complexes helps to raise essentially the level of health services to the population especially in the rural area, remote and hard-to-get-to districts.
The National Telemedicine System (NTS) consists of two parts: network of telemedicine consulting-diagnostic centers, established in medical institutions in the Russia and info-communicated with them system of the Mobile Telemedicine Units (MTU) of different purposes. MTU’s are intended for solving the wide spectrum of medical tasks and rendering of medical and social services to population in the rural area, remote and hard-to-access regions. Based on the International standards NTS can be integrated with similar systems of other countries.
The telemedicine system of the Russian Federation is the basis for the subsequent its association with telemedicine system of the CIS and East Europe countries.
Suggested Telemedicine Network represents 4-levels system:

- International Level
- State Level
- Regional Level
- Local Level
Suggested Management Plan of the Russian Telemedicine Agency

- **Ministry of communication and mass media**
- **Ministry of Health and Social Development**
  - Research Centers
  - State sanitary-hygienic Departments
  - Regional & Local Health Departments

**Russian Telemedicine Agency**

**Regional Telemedicine Points**

**Mobile Telemedicine Units**
- Clinical examination, occupational diseases examination, first aid
- Health of Mothers and Children’s
- Wight against HIV/AIDS, tuberculosis etc.
Economical benefits of Telemedicine Technologies

Economical efficiency of using of telemedicine technologies consists in achievement of medical and social results with at charges essentially decreased financial expenditure, than it would be necessary by traditional methods, without use of Telemedicine technologies. In particular, optimization of expenditure is achieved due to expansion of primary medical and sanitary services according to modern standards, kinds and corresponding level of diseases, requirements of population.

Legends:
- Health Care investment without use of telemedicine
- Health Care investment with use of telemedicine
- Earnings from telemedicine services
<table>
<thead>
<tr>
<th>Sphere of Using of Telemedicine Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Telemedicine</strong></td>
</tr>
<tr>
<td>Medical examinations and preventive health care</td>
</tr>
<tr>
<td>Telemedicine in the rural area, remote and hard-to-access Regions</td>
</tr>
<tr>
<td>Telemedicine for militarized structures and assigned risk enterprises</td>
</tr>
<tr>
<td>«Personal» and «Home» Telemedicine</td>
</tr>
<tr>
<td><strong>Emergency Telemedicine</strong></td>
</tr>
<tr>
<td>Remote education</td>
</tr>
<tr>
<td>Rendering of complex social services to the population in the rural area, remote and hard-to-access regions</td>
</tr>
<tr>
<td>Monitoring and Control of epidemic situation in the Russian Federation</td>
</tr>
</tbody>
</table>
MOBILE TELEMEDICINE UNIT

Mobile telemedicine unit (MTU) is the basic component of the telemedicine project. The MTU is the leading telemedicine machine equipped for massive scale screening of large populations and provides primary medical care for individuals in undeveloped countries out of medical hospitals with help of telemedicine support and under control of the national medical centers. The MTU medical capabilities include the screening of large groups, X-rays by low radiation digital equipment, sampling for biochemical express-investigations and to carrying out functional diagnostics. The MTU telecommunication and telemedicine equipment includes satellite communication station VSAT, equipment for telemedicine consultations support, including videoconference communication, workstations for radiologist and biochemist, local network. MTU is meant for long autonomous raids.
General View of Mobile Telemedicine Unit in a working position
Interior of Mobile Telemedicine Unit
Types of electronic images on results of medical examinations, transmitted from MTU to the central medical institutions for inspection
Hall for telemedicine video conferencing with telemedicine terminal
Telemedicine in actual fact - preparation for consultation
Honorary diplomas and certificates awarded for
RPU «National Telemedicine Agency’s» Mobile Telemedicine Units
2005, Mr. Leonid D. Reyman, Minister of Information technologies and communication of the Russian Federation hands over MTU breadboard to Dr. Yoshio Utsumi, Secretary General of the International Telecommunication Union
During the International summit on information society taken place in Geneva in 2003, Dr. Hamadoun Toure, Deputy Secretary General of the International Telecommunication Union at that time, has examined MTU.
Telemedicine system for rendering medical services to the population during emergence situations
Mobile part of Telemedicine system for emergence situations
Small Mobile Telemedicine point of the Telemedicine System for emergence situations
Multipurpose mobile
Post complex «Cyber Twin»

Telemedicine compartment
- Workplace telemedicine operator/medical assistant
- Diesel generator
- Household zone
- Lavatory

Post compartment
- Safe's compartment
- The monetary safe
- Containers for storage post
- Departures container and the post operator
- Zone of clients of the post operator
- Workplace «Cyber Twin»
- Workplace of the post operator
- Show-window for accommodation of the consumer goods
System of monitoring and management of epidemic situation with use of info-communication technologies.

The international level of interaction

Ground network of data transmission

National center of monitoring and management

Regional center of monitoring and management

Mobile diagnostic Unit
Intentional use of the SCAESNet (Satellite Communication AntiEpidemic Screening NETwork) system against a threat of pandemics (including A/H1N1 and its subtypes A (A/H1N1, A/H1N2, A/H3N1, A/H3N2 and A/H2N3) allows to support the following functions:
- on-site situation screening with the help of mobile units, including in remote and hardly accessible regions;
- transmission of information to the single situation center to provide control and management;
- fulfillment of the center directions in localities.

Implementation of system for epidemical monitoring allows:
- To locate in proper time the infected places and to prevent epidemic expansion;
- To provide epidemiological mapping of the area with the purpose of forecasting and mathematical modeling of opportunity of epidemic occurrence;
- To provide the coordination of the supervising and control authorities actions during detection and liquidation of infection niduses within the frame of the actions for prevention of infection drift on the territory.
Mr. Vladimir Putin, the President of Russian Federation, inspect the MTU
(The State Council of the Russian Federation in Kurgan City, October, 2, 2006)
The State Council of the Russian Federation
(Kurgan City, October, 2, 2006)
Mr. Vladimir V. Putin, the President of the Russian Federation, visits Mobile Telemedicine Unit
2006, conversation with Dmitriy A. Medvedev, Vice-Chairman of the Government of the Russian Federation, about the work of MTU
CIS Heads of Governments Summit
Kishinev (Moldova), November, 14, 2008
Presentation of the RPU «National Telemedicine Agency»
telemedicine project
CIS Heads of Governments Summit
Kishinev (Moldova), November, 14, 2008
Presentation of the RPU «National Telemedicine Agency»
telemedicine project
CIS Heads of Governments Summit
Kishinev (Moldova), November, 14, 2008
Presentation of the RPU «National Telemedicine Agency»
telemedicine project
Please contact us:

14, Building 2, Electrodnny proezd, Moscow,
111123, Russian Federation
Tel. +7 495 672-74-81,
Tel./Fax: +7 495 672-74-88
E-mail: mnatenzo@space.ru