



THE CENTER FOR DIAGNOSTICS
& TELEMEDICINE





TECHNOLOGIES OF THE FUTURE AVAILABLE IN THE PRESENT



ЦЕНТРЕ
ОБЪЕКТА



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The Center for Diagnostics and Telemedicine of the Moscow Department of Health has been operating in Moscow since 1996. During this time, it has undergone many changes; the COVID-19 pandemic has accelerated the development of technologies in medicine, including artificial intelligence.

Under the auspices of the social development complex of the Moscow Government and under the leadership of the Moscow Department of Health, we are conducting systematic scientific and practical work in radiology, including the introduction of artificial intelligence technologies in healthcare in accordance with the provisions of the National Strategy for the Development of artificial intelligence in the Russian Federation. The Center for Diagnostics and Telemedicine serves as a hub for supporting Russian developers and neural network implementation in Russia. Moscow is ready to share experiences and is open to cooperation with other regions of our country, as well as with foreign partners.

In Moscow healthcare system, computer vision technologies have been in use since 2020. Beginning in 2023, a special rate has been introduced within the compulsory medical insurance for analysis conducted by artificial intelligence of medical images. The specialists of the Center make a great contribution to the development of the radiology service of the capital, as well as to the formation of the domestic market for artificial intelligence services: from the creation and development of artificial intelligence services to designing as them medical product.

We create diagnostics of the future by making it our present.

ABOUT THE CENTER

Center for Diagnostics and Telemedicine, affiliated with the Moscow City Health Department, is a scientific and practical organization. The center focuses on the development and management of radiology departments, the digital transformation of healthcare, the integration of Artificial Intelligence technologies in medicine, scientific research, and the education of medical professionals. Dedicated to advancing healthcare, the Center for Diagnostics and Telemedicine actively participates in specialized events at both the national and international levels. We collaborate with esteemed scientific, educational, public, and IT organizations, fostering valuable partnerships and driving progress in our field.

FIVE AREAS OF ACTIVITY

Science: We conduct research and development work and produce unique medical phantoms. In addition, our center publishes a peer-reviewed scientific medical journal, "Digital Diagnostics," in three languages, which is included in Scopus and the list of the Higher Attestation Commission of the Russian Federation.

Modern Technologies: The Center plays a leading role in developing and implementing innovative technologies in medicine. We are the base for the Moscow experiment on computer vision in radiology.

Medicine: Our expertise extends to the description of imaging tests and the conduction of peer reviews. Notably, we are the base of the Moscow Reference Center, the first teleradiological center in Russia, which operates within the public health system.

Testing laboratory: Our team possesses extensive skills, that enable us to undertake technical control of equipment, evaluate the safety of devices and radiologists' workplaces, and calculate effective doses of radiation exposure for patients.

Education: The Center provides postgraduate study and additional professional education, with the added benefit of offering CME points.

HISTORY OF THE CENTER

1996

- Establishment of the Scientific and Practical Center for Medical Radiology

2000

- Establishment of the Specialized Attestation Committee
- Implementation of Teleradiology

2018

- Launch of the online reporting system on radiation doses of patients during imaging procedures
- Release series of a methodological guideline "Best Practices in Radiology"

2017

- Development of quality control and upgrading system
- Establishment of the Center for Distance Education
- Development of new cancer detection model

2019

- Start of standardization of diagnostic imaging and artificial intelligence technologies

2020

- Foundation of the Moscow Reference Center
- A systematic approach has been organized to ensure mass Covid-19 Diagnostics
- Start the Experiment on the introduction of artificial intelligence technologies
- Establishment of the medical journal Digital Diagnostics

★ *Moscow Award in medicine*

★ *Russian public award "Standardizer of the Year - 2022"*

★ *Moscow Government Prize for Young Scientists*

2005

- Development of a Comprehensive Radiation Safety System in Moscow
- Support for domestic manufacturers of imaging equipment

2010

- Development of pioneering methods for monitoring imaging equipment
- Support for the development of interventional radiology and ultrasound

2016

- Introduction of the PET/CT program under CMI
- Initiating the Radiography training programs

2015

- Introduction of the Unified Radiological Information Service

2022



- The experiment on the use of computer vision in radiology was successfully scaled up across the regions of the Russian Federation.
- National Standards governing the utilization of Artificial Intelligence technologies came into effect
- Obtaining a license for a postgraduate program in radiology

2023

- Introduction of a pioneering service, integrated into compulsory medical insurance, of the analysis of breast cancer screening using Artificial Intelligence systems



Scientific research
cooperation



IN THE CENTER: 5 Professors | 76 Ph.D

SCIENCE

The Center is a scientific organization dedicated to advancing and implementing cutting-edge solutions in diagnostic imaging. Its primary research areas encompass the scientific validation of digital healthcare transformation, the development of methodologies and standards for artificial intelligence technology utilization, quality improvement in radiology, and screening methods. We are actively involved in scientific advancements in telemedicine technologies, radiation safety, radiomics and radiogenomics, as well as the development of test models. The outcomes of these endeavors include scientific papers, guidelines, calibration phantoms, training programs for healthcare workers, reference datasets, computer programs, National standards, and draft regulations.

- Development of products based on artificial intelligence and reference datasets;
- Publication of research findings in esteemed journals ranked within the first and second quartiles (Q1-Q2);
- The launch of a peer-reviewed scientific medical journal, DIGITAL DIAGNOSTICS, which has been included in Scopus and the list of the Higher Attestation Commission of the Russian Federation since 2023;
- Design and manufacturing of phantoms, vital for training purposes;
- Conducting comprehensive technical and clinical trials of medical devices for regulatory approval, including within the framework of the Eurasian Economic Union;
- Active participation in major Russian and international scientific events.

AREAS OF COLLABORATION

1. Research and development projects.
2. Conducting clinical and technical testing.
3. Production of phantoms used for training medical professionals and testing diagnostic equipment.

CENTER STAFF PUBLISHED*:

459 scientific articles

134 guidelines

133 results of intellectual activity

17 monographs, textbooks, books

*01.01.2013 – 01.07.2023



Join the Moscow Experiment!



The HUB Telemed platform allows radiologists to work with artificial intelligence services



INTRODUCTION OF MODERN TECHNOLOGIES

In 2020, a pioneering scientific experiment was initiated in Moscow to integrate computer vision technology into diagnostic imaging. This initiative has revolutionized medical practices by automating routine processes, providing doctors with more time to analyze patient conditions comprehensively. The integration of artificial intelligence now enables the detection of hidden pathological changes that patients may be unaware of. The ongoing efforts include selecting best artificial algorithms for radiologists, training medical staff, and expanding the scope of "smart" technologies. Crucially, this work is based on real-world data, with doctors continuously providing feedback on algorithm performance.

- Other regions of Russia joined the experiment;
- Since 2023, AI-assisted image processing has been integrated into the Compulsory Health Insurance (CHI) system;
- The Center's advancements in AI technology have been incorporated into national standards for medicine as well as certification as medical devices. The Subcommittee 01 TC 164, "Artificial Intelligence in Healthcare," operates under the auspices of the organization.

AREAS OF COLLABORATION

1. Connecting medical organizations to the experiment through the HUB Telemed platform for processing images by AI.
2. Demonstrating the full cycle Implementation of AI in Medical Practice: The Center serves as a model for the integration of AI into medical practice, including development of reference data sets, testing of AI services, approbation, trial operations, and continuous monitoring and control of technological and diagnostic parameters, and setting up feedback from users.
3. Scientific partnership.

LATEST RESULTS OF THE MOSCOW EXPERIMENT

>10 million images
processed by artificial intelligence

Complex AI services is capable to detect
up to 10 types of pathological changes on one image

10 National Standards on the use
of AI came into force

>20 modalities
>50 AI services



Medical services



MEDICINE

One of the primary responsibilities of the Center for Diagnostics and Telemedicine is to enhance the quality of radiology. The Moscow Reference Center operates as a teleradiology facility within the public healthcare system, where 350 radiologists remotely read and interpret images transferred from Moscow's hospitals. Moreover, specialists provide a "second opinion" in difficult cases and offer consultations to doctors. The Department of Medical Expertise and Quality Assessment conducts an independent assessment of doctors' performance to ensure high standards.

AREAS OF COLLABORATION

- 1. Radiology Reports:** The Center provides medical facilities and physicians with expert interpretation for a range of imaging tests, including CT, X-Ray, MRI and mammography.
- 2. Peer Review in Radiology:** Efforts are being exerted to improve work efficiency and safety by establishing policies for quality management in Radiology departments. Our team provides competent assessments of research performance and interpretation according to established standards.
- 3. Expertise:** We specialize in resolving professional disputes by providing highly qualified reports based on collective expert opinions.
- 4. Consultations:** We offer remote assistance in protocoling, particularly in difficult or controversial diagnostic cases that require consultation with highly specialized specialists. Our team collaborates with leading experts in various subspecializations to provide a valuable "second opinion".

150,000 peer reviews
since 2018

>26,000 peer reviews
in 2022

>560,000 second opinions
since 2020

>11,000 consultation requests
in difficult-to-diagnose conditions
annually

>100,000 reports
weekly



Testing laboratory
services



Submit a report
on radiation doses
of patients during
medical imaging tests

TESTING LABORATORY

The Testing laboratory of the Center deals with the equipment of radiology departments. Medical Imaging equipment testing are provided by the Testing laboratory in accordance with the Federal Law of the Russian Federation dated December 28, 2013 No. 412-FZ "On Accreditation in the national accreditation system" and the requirements of GOST ISO/IEC 17025-2019 "General requirements for competence of testing and calibration laboratories." Test laboratory accreditation certificate No. RA.RU.22 ЭР08 dated 20.10.2015.

Here specialists carry out technical inspection of equipment, assess the safety of devices and radiologists workstation, and calculate the effective doses of patients. Laboratory staff collect Reports on radiation doses of patients during medical imaging tests from all radiology departments in Moscow.

AREAS OF COLLABORATION:

1. Radiation control.
2. Personal Dosimetry.
3. Calculation of Radiation Dose in patients.
4. Control of operational parameters of medical equipment.
5. Checking lead equivalent personal protection equipment.
6. Technical and dosimetry audit.
7. Certification of radiology rooms.
8. Approval of the design and layout of Diagnostic X-ray imaging Facilities.
9. Consultations and collection of reports on radiation doses of patients during medical imaging tests.

ANNUALLY:

>1,200 approved projects
of diagnostic X-ray imaging facilities

~49,000 individual dosimetry
control records

~2,000 technical certifications

>6,300 verified
ionizing radiation protection
equipment

>1,500 online-reports
on radiation doses
of patients



Postgraduate
study



Additional
professional
education

EDUCATION

The Center offers high-quality educational programs in various formats for both doctors and radiographers.

In 2023, we launched a postgraduate study program in Radiology. Admission to this program requires successful completion of entrance Radiology test and English language exam.

CONTINUING PROFESSIONAL EDUCATION IS DESIGNED TO ACCOMMODATE BUSY SCHEDULES including the following options:

- online and offline courses;
- master classes conducted at clinical sites;
- free webinars;
- collections of web lectures;
- teaching attestation for doctors and attestation of nursing staff of Radiology departments.

CME points provider.

AREAS OF COLLABORATION:

paid training courses for individuals and legal entities, as well as budgetary provisions for employees of organizations under the Moscow Health Department.

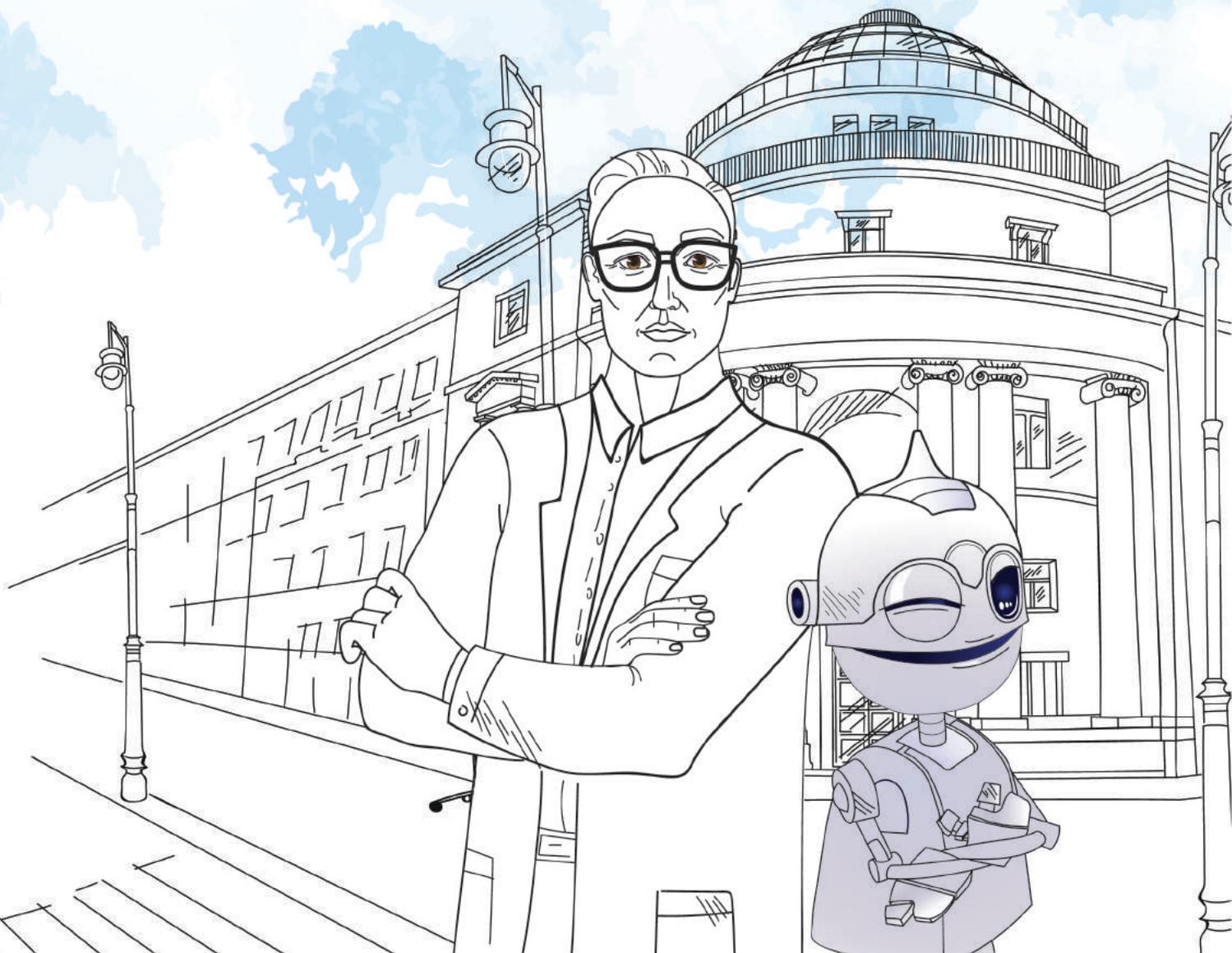
>200 courses annually

>200 lecturers
from Russia and the CIS

>55 study programs
>15 clinical specialties

>80 free webinars
annually

AREA OF SCIENTIFIC ACHIEVEMENTS





Telegram
channel
of the Center



Telegram
channel
of Yuri Vasilev,
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VKontakte



Odnoklassniki





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