

Central Research Institute of Epidemiology of Rospotrebnadzor

SCIENCE IN THE SERVICE OF YOUR HEALTH







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Head of the Federal Service for Surveillance on Consumer Rights Protection and Human Well-being

Anna POPOVA

ear colleagues and veterans of science!

Let me congratulate you on the 60th anniversary of the founding of the Central Research Institute of Epidemiology of Rospotrebnadzor, a date of great significance.

Over the years, the Institute has grown into one of the most significant scientific institutions in Russia in the field of forming a national system of epidemiological surveillance and ensuring the biosafety of the country's population. Its history has many bright pages related to the development and implementation of new methods of diagnosis, prevention and treatment of infectious diseases, including those that were previously unknown, into the practice of state sanitary and epidemiological surveillance. During the COVID-19 pandemic, the Institute's researchers developed Russia's first platform for aggregating the results of genome transcripts of infectious and parasitic disease pathogens, VGARus.



The outstanding scientists of the Institute (Valentin Ivanovich Pokrovsky, Nina Alekseevna Semina, Galina Vasilievna Yushchenko, Beniyamin Lazarevich Cherkassky) serve as a shining example for the modern generation of specialists who have devoted their lives to medical science. Their scientific research and ideas have become an invaluable contribution to the development of Russian and global healthcare. I would especially like to express my gratitude to Viktor Vasilievich Maleev, a doctor and scientist who has been working at the Institute of Epidemiology for more than half a century, whose revolutionary theories and applied methods of combating cholera and other dangerous infectious diseases have saved thousands of human lives.

The Central Research Institute of Epidemiology of Rospotrebnadzor is not only one of the leading research centers, but also a large research and production complex that develops innovative molecular biological diagnostic methods. The Institute's technologies and diagnostic systems are widely known and used not only in Russia, but also far beyond its borders.

The Institute's staff have more than once taken part in eliminating epidemics and outbreaks of dangerous infections in our country, the CIS countries, Asia and Africa, providing comprehensive scientific, practical and methodological assistance. The Institute focuses a lot on training young people, preparing a new generation of talented and motivated specialists in the field of epidemiology and infectious diseases.

With all my heart, I wish the Institute's staff new accomplishments in their work, inexhaustible energy while carrying out scientific research and outstanding discoveries!





Director of the Central Research Institute of Epidemiology of Rospotrebnadzor, Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor, Honored Doctor of the Russian Federation, laureate of the Russian State Prize in the field of science and technology

Vasily AKIMKIN

ear colleagues and friends!

This year, the Central Research Institute of Epidemiology of Rospotrebnadzor celebrates its 60th anniversary. During this time, our Institute has gone through a glorious path from an institution that forms the scientific basis of antiepidemic support for the country's population to the largest research and production complex that develops innovative molecular biological methods for diagnosing pathogens of infectious diseases and implements large-scale projects in the field of modern epidemiology and ensuring the biosafety of the Russian Federation.

The Institute has achieved a lot and all of this was possible due to the coordinated, responsible and conscientious work of a large number of employees. It was the people, their work, ideas and inspiration that laid the foundation for the significant scientific and practical achievements of the Central Research Institute of Epidemiology of Rospotrebnadzor.

Today, famous scientists and teachers are being replaced by a new generation of researchers who are bright, talented, purposeful, and ready to work with dignity. This means that the Institute will still exist and develop for the benefit of people, science and our great country



Federal Budget Institute of Science **Central Research Institute of Epidemiology** of the Federal Service for Surveillance on Consumer Rights Protection and Human Well-being

is a large dynamically developing research and production complex that solves problems in the field of epidemiological surveillance, diagnosis, prevention and treatment of a wide range of infectious and noninfectious human pathologies.

The Institute was founded in 1963. Over the past years, the Institute has become a center of scientific thought in the field of epidemiology and infectious diseases. Within the walls of the Institute, prominent scientists have worked and continue to work, who have developed the scientific foundations for organizing anti-epidemic protection of the country's population, modern approaches to the diagnosis and treatment of infectious diseases.

The scientific school of the Central Research Institute of Epidemiology of Rospotrebnadzor, which includes several generations of scientists and researchers, is one of the leading schools in the Russian Federation. The Institute carries out fruitful international cooperation, providing comprehensive scientific and practical assistance to foreign countries in dealing with particularly dangerous, naturally occurring and socially significant infections, and actively participates in organizing counteraction to the spread of antibiotic resistance of microorganisms on a global scale. The Institute works together with UN and WHO agencies in the field of HIV/AIDS prevention in the countries of Eastern Europe, Central Asia and Transcaucasia





MILESTONES

HEADS OF THE CENTRAL RESEARCH INSTITUTE OF EPIDEMIOLOGY



Vasily G. Akimkin Academician of the Russian Academy of Sciences







Совет Министров Союза ССР постановляет:

Принять предложение Мнинстерства здравоохранения СССР об оргавизации в 1963 году в г. Москве Центрального научно-исследовательского института эпидемиологии Министарства здравоохранения СССР на базе Центральной противочумной наблюдательной станции и соответствующих отделов Московской научно-исследовательского института вахщин и сывороток им. И. И. Мечникова этого Министерства.

Организацию указавного института осуществить в пределах штатной числевности и бюджетных ассигнований, утверждевных Министерству здравоохраневия СССР на 1963 год.

> Зам. Председателя Совета Министров Союза ССР А. КОСЫГИН.

> > Управляющий Делами Совета Министров СССР Г. СТЕПАНОВ.

• Historical reference

By decree of the USSR Council of Ministers, the **Central Research Institute of Epidemiology of the USSR Ministry of Health** was created at the Central Anti-Plague Observation Station and the relevant departments of the Moscow Research Institute of Vaccines and Serums

The Institute was under the jurisdiction of:

- USSR Ministry of Health (1963–1991);
- Russian Ministry of Health (1991–2005);
 - Federal Service for Surveillance on Consumer Rights Protection and Human Well-being (2005-Present)

The Institute had an Astrakhan branch. Main activities:

study of epidemiological geography and statistics of infectious diseases in the USSR, epidemiological forecasting, development and implementation of drugs and methods for combating infectious diseases and their prevention, improving the work of sanitary and epidemiological institutions

June 12, 1963



Isolation of a pure culture of *Y.pseudotuberculosis*, carried out by G. V. Yushchenko, Soviet and Russian epidemiologist and infectious disease scientist, Doctor of Medical Sciences, professor, Honored Scientist of the Russian Federation, laureate of the USSR State Prize in the field of science and technology

A clinical department of infectious pathology for adults (was created at the Institute ((

> Meningococcal infection epidemic. V. I. Pokrovsky and the Institute's staff **developed methods of meningococcal infection antibacterial therapy** which managed to save thousands of lives. For the first time in the USSR, an intensive care unit was organized in an infectious diseases hospital

1969-1973

1964

1967

Cholera epidemic in the USSR. V. I. Pokrovsky and V. V. Maleev developed a new classification of cholera and methods of its treatment based on assessing the degree of body dehydration, the basics of rehydration therapy,

which made it possible to reduce mortality to isolated cases

Plague epidemic in Vietnam, Mongolia, Pakistan, India and the USSR. The Institute's scientists provided scientific and methodological assistance to these countries

1970-1994

1970

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1971-1999

1971

V. I. Pokrovsky, Academician of the Russian Academy of Sciences, was appointed Director of the Institute. Thanks to brilliant scientific and organizational skills, high professionalism, dedication and hard work, the Central Research Institute of Epidemiology, headed by V. I. Pokrovsky for 47 years, has gained the status of a leading scientific institution in Russia and the world in the field of epidemiology and infectious pathology

In order to study the spread of intestinal infections in the Volga region, including cholera, the Astrakhan branch was included into the structure of the Institute

> During the epidemic of gastroenteritis, which was later called an outbreak of rotavirus infection, the Institute's research fellows worked in the areas of its outbreak – Kazakhstan, Moldova, Siberia

> > 1972-1974

Creation of a clinical department of infectious pathology for children (in 2008, the adult and pediatric departments were combined into the clinical department of infectious pathology)

An outbreak of brucellosis in Moscow caused by an accident at the Scientific Control Veterinary Institute. All major scientific and clinical studies took place at the clinical department of the Institute and the Department of Infectious Diseases of the N. A. Semashko Medical Dental Institute. The Institute's staff conducted a comprehensive epidemiological survey of the outbreak











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1996

1997

1999

B. L. Cherkassky formulated the general principles of zoonotic disease prevention and control, which are set out in the sanitary and veterinary rules listed in the following document – "Prevention and control of infectious diseases common to humans and animals. General provisions"

For the development of methods for treating cholera and other acute intestinal infections, the Institute's staff were awarded the Russian Federation State Prize in the field of science and technology

For extensive work on the etiological diagnosis, clinical picture and etiotropic therapy of previously unknown infectious

diseases (*Mycoplasma pneumoniae* infection, legionellosis, pneumocystis, rotavirus infection), the Institute's staff were awarded the Russian State Prize in the field of science and technology

> For the development of the **Imunofan** peptide drug and its practical application in pathogenetic therapy, the Institute's staff were awarded the Russian State Prize in the field of science and technology

For the introduction of new domestic drugs for HIV infection treatment, ____

the Institute's staff were awarded the Russian State Prize in the field of science and technology

> Opening of a research and production laboratory for the production of reagent kits for the diagnosis of infectious diseases and a scientific advisory clinical diagnostic center in the Institute

2000



For the development of technology, organization of industrial production and introduction into medical practice of finished dosage forms of the new domestic drug **Cycloferon**, the Institute's staff were awarded the Russian State Prize in the field of science and technology

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2009

For a set of interdisciplinary textbooks "Infectious diseases and epidemiology"

(3 textbooks) for students of medical and higher nursing education of medical universities and students of medical

schools, the Institute's staff were awarded the Russian State Prize in the field of education

The National Scientific Society of Infectious

Diseases (V. I. Pokrovsky National Association of Infectious Disease Specialists) was created at the Institute

2008

2003

Ebola epidemic in West Africa (Guinea, Liberia, Sierra Leone). Scientists of the Institute provided scientific and methodological

assistance, organized the work of a laboratory and a hospital, of which V. V. Maleev took a direct part in the opening



2014-2015



2016

2017

Outbreak of anthrax in the Yamalo-Nenets Autonomous Region. An epidemiological survey of the outbreak was carried out: 36 cases of the disease were registered as a result of contact with sick animals

For ensuring the biological safety of air in various spheres of human activity based on the use of innovative domestic disinfection technology with the help of the constant electric fields exposure (**"Potok"**) method, the Institute's staff were awarded the Russian State Prize in the field of science and technology

2018

V. G. Akimkin, Academician of the Russian Academy of Sciences, was appointed director

of the Central Research Institute of Epidemiology of Rospotrebnadzor.

The new appointment allowed the Institute to maintain its status as one of the most authoritative scientific institutions in Russia and abroad Epidemic outbreak of meningococcal infection in Novosibirsk. The Institute's scientists deciphered the etiology of the epidemic, took measures in the areas of infection, carried out routine preventive immunization in the risk group, which made it possible to stop the outbreak



MILESTONES







Software and a database were developed for semi-automatic analysis of the results of fragmented sequencing of the SARS-CoV-2 genome: GEM:CoV-2



Reagent kits for determining the pathogen of COVID-19

based on the loop isothermal amplification method have been developed and put into production

A classification of clinical forms of the new coronavirus infection (COVID-19) has been developed, and a number of clinical features of the disease course have been described for the first time



2021

New primer panels have been created, including 20 pairs of primers for amplification of the S-protein gene and 98 pairs for amplification of the full genome of SARS-CoV-2









VALENTIN POKROVSKY



V. I. Pokrovsky (1929-2020) — Academician of the Russian Academy of Sciences and Russian Academy of Education, an outstanding infectious disease clinician and epidemiologist, a talented scientist with a worldwide reputation, a gifted teacher V. I. Pokrovsky developed methods clinical and laboratory diagnostics and treatment of patients with typhoid-paratyphoid diseases, original methods etiotropic therapy for a number of infectious diseases, including meningococcal infection, new pathogenetic methods in the treatment of cholera and others intestinal infections. V. I. Pokrovsky, based on the knowledge of cholera epidemiology, was the first to abolish the wearing of anti-plague suits for medical staff in hospitals, which allowed doctors and nurses to provide patients with full medical care (intravenous and intra-arterial administration of solutions).

V. I. Pokrovsky made a significant contribution to the study and development of methods for diagnosing and treating diseases unknown or previously undetected in our country: mycoplasmosis, rotavirus infection, legionellosis, pneumocystosis. He was one of the first to assess the danger of the spread of HIV infection and focused his efforts on studying the fundamental and applied aspects of this problem, which made it possible to develop and introduce into Russian healthcare practice a scientifically based system for the prevention and diagnosis of HIV infection. Under the leadership of V. I. Pokrovsky, a concept for the prevention of nosocomial infections was created and approved, which is a policy document for medical practitioners and researchers





V. I. Pokrovsky took part in eliminating epidemic outbreaks of meningococcal infection, cholera, plague, legionellosis, etc. in Russia and foreign countries. With his direct leadership and personal participation, fundamental scientific research was carried out in the field of natural focal infections in the Republic of Guinea and the Socialist Republic of Vietnam.

In 2016–2018, scientists developed and introduced into industrial production more than 40 unique drugs for the diagnosis of various infections, including especially dangerous ones; for the first time in world practice, drugs for the treatment of HIV infection and chronic hepatitis B were developed and prepared for clinical trials.

V. I. Pokrovsky is the founder of a large domestic school for infectious disease scientists. Under his leadership, more than 200 doctoral and master's theses were prepared, more than 600 scientific papers were published, including 18 monographs. His students are in charge of large scientific centers and departments of infectious diseases and epidemiology in Russia and the CIS countries. His experience is reflected in a number of textbooks and manuals on epidemiology and infectious diseases for doctors, students of medical universities and colleges. Under his leadership, a number of scientific programs were developed and the structure of the Russian Academy of Medical Sciences was reorganized. For 20 years, V. I. Pokrovsky was the chief infectious disease specialist of the USSR Ministry of Health



THE SCIENTIFIC MERIT OF V. I. POKROVSKY WAS RECOGNIZED WITH STATE AND GOVERNMENT PRIZES, THE ORDER OF LENIN, THE ORDER "FOR MERIT TO THE FATHERLAND" AND OTHER AWARDS





INSTITUTE EMPLOYEES, who contributed to the development of science

The Institute building was built according to a standard school design







1934-2007

Benyamin CHERKASSKY

Academician of the Russian Academy of Medical Sciences, Doctor of Medical Sciences, Professor

Head of the Zoonotic Infection Laboratory, Member of the WHO Joint Expert Committee on Zoonotic diseases, Director of the WHO Collaborating Center for Zoonotic diseases

Developer of the fundamental socio-ecological concept of the epidemic process, the doctrine of the prerequisites and harbingers of complications of the epidemiological situation, the concept of epizootological and epidemiological surveillance of zoonotic infections and other theories.

The scientific interests of B. L. Cherkassky extended both in the field of general epidemiology and in issues of specific epidemiology: anthrax, rabies, salmonellosis, escherichiosis, campylobacteriosis, measles. Author of more than 300 scientific publications, 26 monographs, 16 books and collections published under his editorship. His books: "Global Epidemiology", "Risk in Epidemiology", "An Epidemiologist's Journey through Time and Space" are used as references for many specialists



1940-2019

Vasily YURKIV

Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor

Head of the Infectious Disease Molecular Pathogenesis Laboratory

V. A. Yurkiv was a leading specialist in the field of clinical biochemistry of infectious diseases. He studied the relationship between various intracellular mediators and hormones and their role in the development of the most important syndromes in cholera and other acute intestinal infections such as diarrhea and intoxication. He also studied the features of the functioning of adenylate-guanylate cyclase systems directly in human enterocytes and biopsy samples of patients, which has important clinical,

pathogenetic and prognostic significance in acute intestinal infections. He developed highly effective, environmentally friendly anti-parasitic drugs based on natural avermectins. V. A. Yurkiv published more than 230 scientific articles, a monograph, received 2 copyright certificates for inventions, 12 patents, 2 doctoral and 11 candidate dissertations were completed under his leadership. Laureate of the Russian State prizes in the field of science and technology







1930-2022

Boris BOGOMOLOV

Corresponding Member of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor

Head of the Infectious Diseases Department, A. V. Lunacharsky Astrakhan State Medical Institute

The scientific interests of B. P. Bogomolov involved the clinical symptoms of infectious diseases and intestinal biocenosis in patients with dysentery. B. P. Bogomolov proposed differentiated treatment of patients with chronic colitis using biological products and proved the high effectiveness of lactic acid colibacterin. The tests for immunochemical control of the course of viral hepatitis that he developed were reflected in his doctoral dissertation.

B. P. Bogomolov took part in anti-epidemic measures to combat the cholera epidemic in Astrakhan, heading the medical headquarters service. Together with a group of researchers, he participated in the description of the West Nile fever symptoms. He is the author of more than 400 published scientific papers, including a textbook on infectious diseases for medical students, 7 books and monographs. Awarded the Order of the Red Banner of Labor, a commemorative medal for the 100th anniversary of the Birth of V. I. Lenin, and a prize from the Government of the Russian Federation



1931-2009

Nina SEMINA

Corresponding Member of the Russian Academy of Medical Sciences, Doctor of Medical Sciences, Professor, Honored Scientist of the Russian Federation

Deputy Director for Research

N ina Alekseevna Semina was a talented scientist, the founder of the school of hospital epidemiologists, and under her leadership, the principles of epidemiological surveillance of nosocomial infections were developed. For the first time in the country, she introduced a monitoring system for drug resistance of microorganisms and substantiated a rational set of preventive and anti-epidemiological measures to combat nosocomial infections. N. A. Semina actively participated in the organization and implementation

of anti-epidemic measures in hotbeds of infectious diseases, and repeatedly traveled as a WHO consultant to other countries to provide assistance in dealing with infectious diseases. Author of more than 360 scientific papers, 8 manuals and 3 inventions



MILESTONES



1921-2007

Nina VOROTYNTSEVA

Doctor of Medical Sciences, Professor, Honored Scientist of the Russian Federation

Founder of the Clinical Department of Infectious Pathology of Children, Chief Children's Infectious Diseases Specialist of the USSR

The main field of scientific and medical interests of Nina Viktorovna consisted of the study of current issues of infectious diseases in children. For the first time, she experimentally and clinically studied and tested the drugs chloramphenicol and syntomycin, which played an important role in reducing child mortality. N. V. Vorotyntseva made a great contribution to the study of newer infections such as yersiniosis, campylobacteriosis, rotavirus,

mycoplasma infections. She comprehensively studied the process of interferon formation in children, and also proved the significance of disorders of water and mineral metabolism in children with viral and mycoplasma infections. The results of scientific research by N. V. Vorotyntseva are reflected in more than 250 published scientific papers, including 10 monographs. Laureate of the Russian Federation State Prize









1924

Anna DEMINA

Doctor of Medical Sciences, Professor, Honored Scientist of the Russian Federation

Head of the Laboratory of Epidemiology of Pertussis and Parapertussis and Laboratory of Epidemiology of Meningococcal Infection

Prof. A. A. Demina is a leading specialist in the field of epidemiology of pertussis and meningococcal infections. Since 1974, she has been the permanent director of the All-Union and then the Russian Center for Meningococcal Infection and Purulent Bacterial Meningitis, developing and introducing a system of epidemiological surveillance of these infections into healthcare practice. Under her leadership, the most important criteria for

epidemiological surveillance of meningococcal infection were formulated, accelerated methods for indicating the main pathogens of purulent bacterial meningitis were developed, and measures to combat and prevent them were proposed. Research conducted on the initiative and under the leadership of Prof. A. A. Demina attracted the attention of the medical community to a serious problem – infection caused by Haemophilus influenzae. She is the author of more than 200 scientific articles and a large number of methodological documents. A. A. Demina provided great assistance in developing practical healthcare and training of scientific personnel in the regions of the Russian Federation, CIS countries, Vietnam, Cuba, Mongolia







1922-2008

Anna ZMYZGOVA

Doctor of Medical Sciences, Professor, Honored Scientist of the Russian Federation

Head of the Menigococcal Infection and Viral Hepatitis Department

Anna Vasilievna's area of expertise was the study of current problems of Ainfectious pathology, especially the pathogenesis, clinical picture, diagnosis and treatment of viral hepatitis. A. V. Zmyzgova developed and introduced into practice the latest treatment methods which are hyperbaric oxygenation, interferon drugs, laser therapy. The company was the first in the country to use medical ozone in the treatment of liver pathologies. Anna Vasilievna is the author of more than 400 scientific articles, co-author of 5 monographs and a manual on infectious

diseases. She was awarded 3 medals and the Excellence in Healthcare badge. Laureate of the Government of the Russian Federation Prize



1927-2011

Elena KOVALEVA

Doctor of Medical Sciences, Professor, Honored Scientist of the Russian Federation

Leading scientist of the Hospital Infections and Epidemiological Analysis Laboratory

eading epidemiologist in the field of nosocomial infections.

She carried out the country's first studies on toxoplasmosis and developed measures to prevent and combat its outbreaks. Prof. E. P. Kovaleva strongly focused on the development of theoretical issues of general and specific epidemiology. She was among the first to begin studying the problem of nosocomial infections at a time when their existence was not officially

recognized in the USSR. Elena Petrovna also worked in the El-Tor cholera outbreaks on the territory of Karakalpakstan. Under the leadership and participation of E. P. Kovaleva, a detailed study of the epidemiology and prevention of pneumocystis, cryptosporoidosis, dysentery, typhoid fever and other infectious diseases was carried out. Author and co-author of more than 380 published scientific papers, was awarded the Order of the Red Banner of Labor and the medal "For Labor Valor"







1927-2017

Galina YUSHCHENKO

Doctor of Medical Sciences, Professor, Full Member of the Russian Academy of Medical and Technical Sciences, Russian Academy of Natural Sciences, Honored Scientist of the Russian Federation

Head of the Sapronotic Infections Laboratory

Prof. G. V. Yushchenko is a pioneer in the study of pseudotuberculosis and yersiniosis. Based on scientific research in the field of epidemiology of natural focal infections and zooanthroponoses, she was the first in the country to identify the pathogens agents of these infections.

Galina Vasilievna began working at the Institute from the day it opened. She was the first scientific secretary of the Institute, secretary of the dissertation

council, head of the organizational and methodological department, and head of the laboratory of sapronoses. She participated in the elimination of the cholera epidemic in the Karakalpak Autonomous Soviet Socialist Republic in 1975. She repeatedly traveled to provide anti-epidemic assistance to natural foci of plague, smallpox, cholera in Mongolia, China, East Pakistan (Bangladesh). She is a laureate of the USSR State Prize, an excellent student in healthcare, and has been awarded with gratitude from the governments of foreign countries. The results of scientific research are reflected in more than 450 scientific publications, monographs, 17 manuals, 8 copyright certificates









Vladimir BOLOTOVSKY

Doctor of Medical Sciences, Professor

Head of the Specific Infection Prevention Department

V. M. Bolotovsky made an invaluable contribution to the formation and development of vaccination as a preventive and anti-epidemic measure, developed the theoretical foundations of epidemiological surveillance of infections controlled by means of specific prevention, including creating a methodology for serological monitoring in the epidemiological surveillance system, the concept of a regional approach to the creation of a calendar preventive vaccinations, corrective vaccinations. Under his leadership, the All-Union Center for Serological Monitoring of Vaccine-Preventable

Infections was created at the Institute and the work of the "Measles, Mumps" Problem Commission was organized. Professor V. M. Bolotovsky carried out original scientific research on improving live viral vaccines against measles, mumps and rubella, for the first time in practice the possibility of eliminating these three infections was shown, methods for obtaining antigenic diagnostics for serological reactions were developed. Professor V. M. Bolotovsky is the author of more than 250 scientific papers published in Russia and abroad, including 3 monographs



1900-1992

Angelina VARFOLOMEEVA

Doctor of Medical Sciences, Professor

Head of the Zoonotic Diseases Epidemiology Department

Since 1934, the activities of Professor A. A. Varfolomeeva have been associated with the study of issues of etiology, epidemiology, clinical picture, specific therapy and prevention of leptospirosis. She was one of the largest specialists in this field. Professor A. A. Varfolomeeva prepared and published over 100 scientific papers and 3 monographs. Angelina Aleksandrovna is the author of 2 patents for the following inventions: leptospirosis vaccine and leptospirosis gamma globulin







1920-2011

Valentina KILESSO

Doctor of Medical Sciences, Professor Head of the Intestinal Infections Department

Prof. V.A. Kilesso was one of the country's leading specialists in the epidemiology of intestinal infections. She has been a WHO expert for more than 10 years. Since 1967, she directed the All-Union Center for Salmonella. Under her leadership, the dynamics of the epidemiological process of typhoid fever, paratyphoid fever, and salmonellosis was studied; patterns of evolution of the epidemiological process of salmonellosis have been identified, diagnostic methods and preventive measures have been improved. V. A. Kilesso trained a large number of students, and is the author of more than 20 scientific publications. She was awarded the title "Honored Doctor"

of the Karakalpak Autonomous Soviet Socialist Republic", a shock worker of communist labor, and was awarded medals "For Valiant Labor in the Great Patriotic War", "In Commemoration of the 800th Anniversary of Moscow", "Excellence in Health Care" and "Drummer of the 9th Five-Year Plan" badges



1928-2005

Vadim MASHILOV

Doctor of Medical Sciences, Professor Head of the Infectious Pathology Department

Prof. V. P. Mashilov worked at the Institute since 1968, was one of the organizers of the department of infectious pathology, which he headed for many years. V. P. Mashilov was a highly qualified, generalist infectious disease specialist with extensive experience in clinical and scientific work. His scientific activity was devoted to research into current problems of infectious pathology and in particular to the study of the clinical picture, diagnosis and treatment of acute intestinal infectious diseases. V. P. Mashilov developed and introduced diagnostic algorithms into healthcare practice:

differential diagnosis of cholera and dysentery. He discovered and studied the pathogen of epidemic gastroenteritis (rotavirus infection). Participated in the investigation and elimination of outbreaks of this disease. He published more than 200 scientific papers. Laureate of the State Prize and the Prize of the Government of the Russian Federation in the field of science and technology, holder of the Order of the Badge of Honor





of Epidemiology of Rospotrebnadzor

1906-2005

Nikolay PLOSKIREV

Doctor of Medical Sciences, Professor

Senior Researcher of the Infection Microbiological Diagnostics Laboratory

nof. N. V. Ploskirev's area of expertise was issues of standardization and quality control of methods for microbiological diagnosis of infectious diseases. He was the author of a number of dry nutrient media for the isolation of pathogenic microorganisms of the intestinal group, in particular Salmonella, as well as the pathogens of brucellosis and tularemia. One of the mediums he developed, the Ploskirev's Agar, was named after him and is still widely used both in our country and abroad. He was awarded the USSR state awards "For the Defense of Moscow", "For Valiant Labor", "For Labor

Valour", the medal "In Commemoration of the 800th Anniversary of Moscow", and the "Excellence in Health Care" badge. N. V. Ploskirev is the author of a manual for doctors called "Dry nutrient media. Guide to microbiological diagnosis of infectious diseases"



Ara REYZIS

Doctor of Medical Sciences, Professor

Leading Researcher of the Clinical Department of Infectious Pathology

he was one of the best pediatricians in the country, an outstanding world-Class specialist in the field of hepatology, who saved many lives and trained an entire generation of pediatricians. Developed and introduced new diagnostic and therapeutic approaches into healthcare practice. The scientific potential realized by A. R. Reizis allowed her to reach the forefront in the field of studying the pathogenesis of viral hepatitis and assessing the prognosis of antiviral therapy. Author of more than 300 published scientific papers, 10 monographs, 14 methodological recommendations, 5 patents for inventions







1939

Yuri SOLODOVNIKOV

Doctor of Medical Sciences, Professor

Head of the of Intestinal Infection Epidemiology Laboratory

Yu. P. Solodovnikov is known as a prominent epidemiologist who develops the theory of epidemiology. He is one of the creators of the theory of correspondence and the theory of epidemic metastases, which establishes the patterns of interterritorial interaction of epidemic processes.

He is also a pioneer in the epidemiological identification of a new nosoform of hepatitis for the USSR with a fecal-oral transmission mechanism. Co-author of the fundamental monograph "Shigellosis". His work was reflected in the Great Medical Encyclopedia, in a number of textbooks and monographs, in numerous

publications, and published about 200 scientific papers.

From 1979 to 1983 worked as a WHO expert on epidemiology in the Democratic Republic of Afghanistan. He was deputy chairman of the All-Union Intestinal Infections Problem Commission, consultant to the 4th Main Directorate of the USSR Ministry of Health, member of the expert council of the USSR Higher Attestation Commission. Participated in the investigation and elimination of intestinal infection outbreaks in the USSR and India



1901-1978

Mark KHAZANOV

Doctor of Medical Sciences, Professor

Head of the General Epidemiology Department

Prof. M. I. Khazanov is known as a prominent epidemiologist, a brilliant organizer who has made a significant contribution to the theory and practice of eliminating infections. During the Great Patriotic War, he headed the antiepidemic service of the RSFSR Ministry of Health, ensuring the epidemic wellbeing of the republic.

Many years of scientific research by M. I. Khazanov and his team became the foundation for a program of organizational and preventive measures that contribute to the successful solution of the problem that involves eliminating the incidence of diphtheria in the country







Nonna SHALYGINA

Doctor of Biological Sciences, Professor

Head of Pathomorphology Laboratory

Prof. N. B. Shalygina worked at the Institute from the first years of its formation. She made a great contribution to the study of the functional morphology of the intestinal mucosa in various infectious diseases. She created a scientific school focused on this area of research. Under her leadership, studies were carried out on populations of immunocompetent cells and their functional and metabolic activity during meningococcal activity, hepatitis, diphtheria, and sepsis. N. B. Shalygina is the author of 143 scientific papers, including chapters of 3 monographs and a "Manual of

Physiology". In 1982, she received an author's certificate "Method for the treatment of chronic postinfectious colitis". She is the co-author of 2 methodological recommendations



Irina SHAKHANINA

Doctor of Medical Sciences, Professor

Head of the Hospital Infections and Epidemiological Analysis Laboratory

The founder of a new approach in modern epidemiology: socio-economic analysis of infectious diseases and means of combating them. Original methods for assessing the economic damage caused by various infectious diseases and the economic effectiveness of vaccine prevention are widely known and in demand. The area of expertise of I. L. Shakhanina also covered various aspects of general epidemiology, epidemiological analysis, surveillance and socio-hygienic monitoring, which were reflected in more than 250 publications and two monographs. Laureate of the Government of the Russian Federation awards in the field of science and technology for 1995 and 1999







Vladimir BURKIN

Doctor of Medical Sciences

Director of the Astrakhan branch of the Institute

V. S. Burkin was an outstanding organizer who created a modern scientific institution that developed original approaches for the study of epidemiology, clinical manifestations and prevention of intestinal infections. V. S. Burkin made a huge contribution to the elimination of the outbreak of cholera in Astrakhan in 1970. During the epidemic, he was the chief physician of the V. A. Bekhterev infectious diseases hospital, which became a treatment center for providing emergency medical care to cholera patients. Dr. V. Burkin made his greatest contribution to the creation of an independent scientific school that arose in

a region where there were practically no scientific medical institutions. With his direct participation, dozens of candidate and three doctoral dissertations were defended, a large number of methodological recommendations, author's certificates, and more than 150 scientific publications were prepared. The work of V. S. Burkin was awarded numerous state awards, the Order of Lenin, gratitude from the leadership of the USSR Ministry of Health and Astrakhan government organizations



1940-1991

Nelya DEVIATKINA

Doctor of Medical Sciences

Head of the Meningococcal Infection Laboratory

She has about 100 published scientific papers, was awarded the anniversary medal "In Commemoration of the 100th Anniversary of the Birth of V. I. Lenin", the "Excellence in Health Care" badge, the medal "Veteran of Labor", and certificates of honor. N. P. Devyatkina worked at the Institute since 1966. She did a lot of work on training scientific personnel, was the head of graduate school, chairman of the approbation commission, member of the dissertation defense council







Olga KANSHINA

Doctor of Medical Sciences

Head of the Children's Clinical Department

She was a leading specialist in the field of infectious pathology in children, a pioneer in the study of inflammatory bowel diseases in children. Being a good organizer, she created and headed the first unit in the USSR within the structure of the children's clinical department of the Institute for in-depth examination and treatment of children suffering from chronic colitis and enterocolitis. Author of 65 published scientific papers on various issues of intestinal diseases of infectious and non-infectious nature and the monograph "Nonspecific Ulcerative Colitis in Children". She was awarded

the "Excellence in Health Care" badge and a bronze medal from the Exhibition of Achievements of National Economy. Has 3 copyright certificates for inventions



Sofya ROZHNOVA

Doctor of Biological Sciences

Leading researcher at the Intestinal Infections Molecular Diagnostics and Epidemiology Laboratory, Head of the reference center on monitoring salmonellosis

She was a leading Russian expert in the field of salmonellosis and food zoonoses. The main area of her expertise was the organization of effective microbiological screening, epidemiological monitoring and prevention of salmonellosis. The rational set of biochemical tests developed and introduced into laboratory practice made it possible to achieve a fundamentally new level of detection of these pathogens. For services in the field of science,

Dr. S. Rozhnova was awarded the honorary "Excellence in Health Care" badge, the "Veteran of Labor" medal, and was repeatedly awarded certificates of honor from the Ministry of Health and Rospotrebnadzor. She has published more than 60 scientific papers, including monographs and articles in specialized Russian and foreign scientific journals, and was part of the team of authors of all regulatory documents regulating the issues of epidemiological surveillance of salmonellosis in the Russian Federation







1929-1988

Georgy STEPANOV

Doctor of Medical Sciences

Head of the Viral Hepatitis Epidemiology and Evaluation of the Effectiveness of Measures Laboratory

At the initial stages of studying viral hepatitis, he made a significant Contribution to the study of the mechanisms of transmission of the hepatitis B virus. He was awarded the "Excellence in Health Care" badge and the "Veteran of Labor" medal



Ninel TITOVA

Doctor of Biological Sciences

Leading specialist of the Specific Infection Prevention laboratory

Dr. N. Titova's area of expertise was topical issues of organizing epidemiological surveillance of measles infection and the development of preventive measures. She provided constant assistance in confirming the diagnosis of measles to Moscow hospitals, health authorities of the Estonian USSR, and the sanitary and epidemiological station of the 4th Directorate of the USSR Ministry of Health. Participated in the formation of orders of the USSR Ministry of Health to improve measles prevention measures. Author of more than 100 scientific publications



1948-2010

Tatyana CHERKASOVA

Doctor of Medical Sciences

Leading researcher at the Molecular Mechanisms of Infections Laboratory

The scientific data obtained by T. D. Cherkasova on the role of hormones and cyclase systems in the pathogenesis of viral hepatitis, acute intestinal infections, toxic-infectious shock during plague and anthrax intoxication not only made a great contribution to the study of the molecular mechanisms of these diseases, but also served as the foundation for the development new methods for treating identified metabolic disorders. The results of scientific work are reflected in more than 100 scientific articles







1944

Ksenia CHEKALINA

Doctor of Medical Sciences

Head of the Laboratory for Coordinating the Activities of the Testing Laboratory Center

An active interest in scientific activities and love for work allowed Ksenia Ivanovna to go from a junior researcher to the head of a laboratory. She created an experimental sample of high-titre anti-mumps immunoglobulin and developed a system for monitoring the effectiveness of specific prevention of infectious diseases and post-vaccination complications in Moscow. In order to provide assistance, she has repeatedly traveled as part of teams to combat cholera and food poisoning to regions of Russia and foreign countries. Author

of more than 150 published papers, including methodological manuals, instructions, 3 copyright certificates. For services in the field of healthcare, she was awarded the medal "In Commemoration of the 850th Anniversary of Moscow" and diplomas of the Russian Ministry of Health



1931-2007

Igor RUBTSOV

Candidate of Medical Sciences

Head of the Allergy and Immunology Laboratory

Scientific infectious disease immunologist who made a significant contribution to the creation and development of infectious immunology. The main area of scientific research of I. V. Rubtsov was applied immunology, infectious antigenemia. Many diagnostic methods, drugs, entire areas of scientific research were proposed by Igor Vasilievich for the first time in medical science. I. V. Rubtsov is the author of more than 300 scientific papers, including monographs and medical dictionaries. He was the author of a number of inventions and innovation proposals. Awarded the title "Honorary Inventor of the USSR"


THE INSTITUTE TODAY

Professor N. Yu. Pshenichnaya while working as part of mission of Rospotrebnadzor in Tajikistan, 2021

The scientific activities of the Institute are an important component of the Federal State Program for ensuring biosafety and sanitary and epidemiological well-being of the population of our country, going by the name of "Sanitary Shield".

PRIORITY AREAS OF SCIENTIFIC RESEARCH

- Epidemiological surveillance of socially significant infections using new diagnostic and comprehensive schemes for identifying pathogens;
- Scientific and methodological substantiation of the system of epidemiological surveillance and prevention of diseases caused by SARS-like coronaviruses;
- Scientific and methodological support and improvement of the epidemiological surveillance system in the Russian Federation for natural focal vector-borne infections of a bacterial nature;
- Study of genetic markers of antibiotic resistance of microorganisms in clinical practice and within the framework of ensuring food safety;
- Epidemiological and socio-economic assessment of the effectiveness of expanding the national calendar of preventive vaccinations;



- Clinical and pathogenetic substantiation and improvement of therapeutic programs for the preservation and restoration of the human microbiome;
- Clinical, epidemiological, immunopathogenetic aspects of the modern course of acute and chronic infections in children and adults;
- Development and creation of experimental prototypes of diagnostic kits based on genetic technologies

SCIENTIFIC POTENTIAL OF THE INSTITUTE





members of the Russian Academy of Sciences candidates and doctors of science 6 State Prize laureates



laureates of awards from the Government of the Russian Federation and Moscow of scientific employees are young scientists

56 %

The work of the Scientific Center for the Prevention and Control of AIDS and the Scientific and Methodological Center for Immunoprophylaxis of Rospotrebnadzor is organized on the basis of the Institute.

One of the priority areas of the Institute's work is the creation of innovative scientific technologies and the development of domestic medical products based on them.

The Institute has made a great contribution to the fight against the new coronavirus infection COVID-19. During the pandemic, 5 diagnostic test systems were quickly developed, including technology that allows detection of coronavirus at minimal concentrations, which made it possible to diagnose COVID-19 at the earliest stages of the disease. A method for differentiating the Omicron and Delta variants of SARS-CoV-2 has been developed and implemented. An NGS panel has been created for sequencing the SARS-CoV-2 genome.

200 thousand reagent kits for the diagnostics of COVID-19 were transferred to the Minister of Health and AIDS Control of the Republic of Burundi, Sylvie Nzeimana.

The Institute has a council for the defense of doctoral and candidate dissertations in the specialties "Epidemiology" and "Infectious Diseases".

The Institute's research fellows head the editorial boards of the journals "Epidemiology and Infectious Diseases. Current issues", "Infectious diseases", "Issues of practical pediatrics"



SCIENTIFIC DEPARTMENTS

I Clinical Department of Infectious Pathology

I Department for AIDS Prevention and Care

RESEARCH GROUPS

Antibiotic Resistance of Foodborne Pathogens

Bioinformatics

Development of New Methods for Natural Focal Diseases Diagnostics

Development of New Methods for Opportunistic and Papillomavirus Infections Diagnostics

Development of New Methods for Zoonotic Diseases Diagnostics

Development of New Molecular Biological Technologies

Genetic Engineering and Biotechnology

Mathematical Methods and Epidemiological Forecasting

Proteomic Analysis





RESEARCH LABORATORIES

Epidemiology of Meningococcal Infection and Purulent Bacterial Meningitis

- Experimental Pharmacology
- Genome Editing
- Genomics Research
- Healthcare-Associated Infections

HIV Infection Diagnostics and Molecular Epidemiology

Immunoprophylaxis

Molecular Diagnostics and Epidemiology of Intestinal Infections

Molecular Diagnostics and Epidemiology of Reproductive Tract Infections

Molecular Diagnostics and Epidemiology of Respiratory Tract Infections

- Molecular Epidemiology of Viral Hepatitis
- Molecular Mechanisms of Antibiotic Resistance

Molecular Methods for Genetic Polymorphisms Research

Molecular Microbiology and Epidemiology of Mycobacterial Infections

- Natural Focal Infections Epidemiology
- Viral Hepatitis



THE INSTITUTE TODAY











INSTITUTE MANAGEMENT



Viktor MALEEV

Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor Advisor to the Director for Research

Area of expertise

• Study of the pathogenesis, clinical picture and treatment infectious diseases

V.V. Maleev created an original clinical and pathogenetic classification of cholera and the main syndromes of other acute intestinal infections, which has received worldwide recognition; criteria for assessing the severity and methods of intensive therapy for the most common infectious diseases have been developed; the clinical features of newly discovered and returning infectious diseases have been established, including especially dangerous ones: cholera, plague, hemorrhagic fevers, rickettsiosis, SARS (atypical pneumonia), legionellosis, etc.

V. V. Maleev discovered patterns of disruption of the blood coagulation system in many infectious diseases and therapy for hemostasis pathologies has been developed, including cholera, meningococcal infection, Lassa fever, plague, typhoid fever, severe acute respiratory syndrome (better known as SARS), bird and swine influenza, and Ebola hemorrhagic fever.

V. V. Maleev is the author of more than 600 scientific papers, including 13 monographs, 13 inventions





Under his leadership, 52 dissertations were completed and defended, including 16 doctoral dissertations.

With the participation of V.V. Maleev, about 50 major epidemics of infectious diseases around the world were eliminated. V.V. Maleev is the chairman of the board of trustees of the National Fund for Assistance to Medical Institutions.

V.V. Maleev is a laureate:

- State Prize for a series of scientific papers on the clinic, diagnosis and therapy of previously unknown infectious diseases
- Russian State Prizes for the development of a set of therapeutic measures for cholera and other acute intestinal infections
- Pirogov Prize

Awarded with state awards:

- Pirogov Order
- Order of Alexander Nevsky
- Order of Friendship
- Order of Honor
- "For the construction of the Baikal-Amur Mainline" and
 "In commemoration of the 850th anniversary of Moscow" medals
- "For mentoring" badge



For more than half a century, Academician V. V. Maleev has been providing assistance to patients with infectious pathologies





Vasily AKIMKIN

Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor

Director of the Institute

Area of expertise

- Organization of epidemiological surveillance of infectious diseases based on molecular genetic methods and digital technologies
- Organization of epidemiological surveillance and system for the prevention of Healthcareassociated infections (HAI)
- Current problems of specific and nonspecific prevention of infectious diseases
- Improving the scientific basis of disinfection and sterilization measures in medical organizations
- Development of scientific principles for the creation of a domestic enzyme base for the creation of reagents for the purpose of identifying pathogens of infectious diseases based on modern methods of nucleic acid amplification
- Study of the resistance of infectious disease agents to antimicrobial drugs and identification of antibiotic resistance genes

V. G. Akimkin is the author of more than 1000 published scientific works (including 13 monographs, 14 manuals for doctors), 35 patents for inventions, 7 international publications on the PCT system, more than 40 methodological recommendations and manuals for doctors. More than 30 candidate and doctoral dissertations were defended under his leadership



V. G. Akimkin is active in social and scientific activities:

- Chairman of the Presidium of the All-Russian Scientific and Practical Society of Epidemiologists, Microbiologists and Parasitologists
- Member of the Bureau of the Preventive Medicine Section of the Department of Medical Sciences of the Russian Academy of Sciences
- Chairman of the Scientific Council on Microbiology, Epidemiology and Infectious Diseases, Section of Preventive Medicine, Department of Medical Sciences, Russian Academy of Sciences
- Chairman of the dissertation council of the Central Research Institute of Epidemiology of Rospotrebnadzor
- Member of the Central Accreditation Commission of the Russian Ministry of Health
- Member of the editorial boards of 17 scientific journals

and non-medical professions", "For the contribution to the development of medicine, medical science and healthcare made by representatives of science - scientists, and/or doctors of any specialties and/or specialists with higher non-medical education"

- V. G. Akimkin was awarded state awards:
- Pirogov Order
- Order of Honor
- Honorary title "Honored Doctor of the Russian Federation"

Awarded departmental awards:

- Rospotrebnadzor
- Ministry of Defense
- Russian Academy of Sciences
- Ministry of Health
- FSB Economic Security Service
- General Prosecutor's Office
- Russian Guard
- State Duma
- Central Election Commission

V. G. Akimkin —

- Laureate of the Russian State Prize in the field of science and technology
- Laureate of the National Award for the best doctors of Russia. Had the following nominations: "For the contribution to the development of medicine made by representatives of fundamental science





Alexander GORELOV

Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor Deputy Director for Research

Area of expertise

 Development of organizational principles for the provision of medical care to patients with infectious pathology based on a comprehensive study of the clinical, immunological, morphological and molecular biological foundations of the pathological process pathogenesis

A. V. Gorelov is a pioneer in the study of a number of new infectious diseases, in particular: campylobacteriosis, bocavirus, metapneumovirus and new coronavirus infections, enteroaggregative escherichiosis, adenoviral (F40/41) acute diarrhea, intestinal viral infections associated with the provision of medical care, lesions liver with toxacarosis, combined course of malaria in children, etc.

A. V. Gorelov is the author of 730 scientific papers (including 11 monographs, 8 manuals, 2 reference books, 7 textbooks for universities), 10 Russian Federation patents for inventions, more than 50 methodological recommendations and manuals for doctors. Under the scientific supervision of A.V. Gorelov, 16 doctoral and 40 candidate dissertations were defended.

A. V. Gorelov is the head of the Infectious Diseases and Epidemiology Department of the Russian University of Medicine of the Russian Ministry of Health, as well as a professor at





the Childhood Diseases Department of the N. F. Filatov Clinical Institute of Child Health of the I. M. Sechenov First Moscow State Medical University of the Russian Ministry of Health (Sechenov University) for more than 20 years.

Academician A. V. Gorelov:

- Chairman of the V. I. Pokrovsky National Association of Infectious Disease Specialists
- member of two dissertation councils
- currently on the editorial boards of 10 leading Russian journals (in one - editor-in-chief, in two - deputy editor-in-chief), named in the list of the Higher Attestation Commission of the Russian Federation and included in international citation databases

A. V. Gorelov was awarded the following state awards:

- Pirogov Order
- the medal "In commemoration of the 850th anniversary of Moscow"
- "Excellence in Health Care"
- "Honored Worker of Rospotrebnadzor"













Antonina PLOSKIREVA

Professor of the Russian Academy of Sciences, Doctor of Medical Sciences Deputy Director for Clinical Work

Area of expertise

 Description of the respiratory form of rotavirus infection; formulation of new clinical classifications of anthrax and COVID-19; introduction of the concept of antibiotic-associated syndrome; development of principles of stepwise diet therapy for acute intestinal infections and a systematic approach to assessing the microbiocenosis of the gastrointestinal tract; creation of an algorithm for predicting the epidemic process of COVID-19

A. A. Ploskireva is the author of more than 200 published scientific papers, including 12 patents, 3 monographs, 5 clinical guidelines, 6 manuals for doctors.

At the Department of Pediatrics with Infectious Diseases in Children of the N. I. Pirogova Medical University of the Russian Ministry of Health, A. A. Ploskireva actively conducts pedagogical work and training of scientific personnel. She has developed and successfully used her own course of lectures on infectious diseases in children.

A. A. Ploskireva is an expert of the Russian Academy of Sciences and serves on the editorial boards of leading Russian journals.

A. A. Ploskireva was awarded the state award of the Russian Federation, the Pirogov Order, and the commemorative "90 years of State Sanitary and Epidemiological Service of Russia" medal





Alexander PODKOLZIN

Doctor of Medical Sciences
Deputy Director for Epidemiology

Head of the Reference Center for monitoring Acute Intestinal Infections

Area of expertise

 Studying of the problems of epidemiology and etiological laboratory diagnosis of infectious diseases with a fecal-oral transmission mechanism and genetic methods for characterizing their pathogens

Under the leadership of A. T. Podkolzin, a concept for optimizing monitoring of the etiological structure of syndromically similar groups of diseases was developed, and algorithms for molecular genetic screening of infectious diarrhea were introduced into practice in the Russian Federation.

A. T. Podkolzin is the author of more than 150 scientific publications, including journals of the Lancet and Nature journals, methodological and regulatory documents.

The scientific work of A. T. Podkolzin is combined with active teaching activities at the Institute.

As part of the implementation of the federal program to combat forgotten tropical infections, he repeatedly visited the Asian CIS countries, Ethiopia and Vietnam.

A. T. Podkolzin is an expert of the Russian Academy of Sciences, the Rospotrebnadzor reference center on monitoring pathogens of acute intestinal infections and the academic council problem commission of Rospotrebnadzor on the prevention of diseases transmitted by water and food, and is a member of the journal editorial board





Natalya PSHENICHNAYA

Doctor of Medical Sciences, Professor Deputy Director for Clinical and Analytical Work

Area of expertise

• Epidemiology, pathogenesis, clinical picture and treatment of the most important infectious diseases

For the first time in Russia, based on work experience in China and Italy, N. Yu. Pshenichnaya characterized predictors of complications of the epidemiological situation, clinical features and management of patients with COVID-19, and analyzed anti-epidemic measures in various countries. She took part in clinical studies on influenza, ARVI, chronic hepatitis C, liver cirrhosis, and communityacquired pneumonia.

N. Yu. Pshenichnaya is the author of more than 500 scientific papers, including 13 patents for inventions, 5 chapters in monographs written in English, 35 articles in peer-reviewed Englishlanguage journals from the Scopus database. She edited a guide for doctors on influenza. She is a WHO expert on COVID-19, severe acute respiratory infections, influenza, and Crimean-Congo hemorrhagic fever.

N. Yu. Pshenichnaya was awarded certificates of honor from the Russian Ministry of Health, the Russian National Guard, the Ministry of Defense of the Russian Federation, the Pirogov Order, and is an honorary professor at the South Kazakhstan Medical Academy



GENOMICS RESEARCH CENTER

The Institute operates a World-Class Genomics Research Center for Biological Safety and Technological Independence.

The center is a consortium of three scientific institutes of Rospotrebnadzor:

State Research Center for Applied Biotechnology and Microbiology State Research Center of Virology and Biotechnology "Vector" Central Research Institute of Epidemiology

The World-Class Genomics Research Center is engaged in the development and implementation of genetic technologies in the field of diagnosis, prevention and treatment of dangerous infectious diseases in order to ensure the biological safety of the population of the Russian Federation.

The activities of the Center for Genomic Research are carried out by the Institute's divisions: laboratory of experimental pharmacology, laboratory of genomic editing, laboratory of molecular mechanisms of antibiotic resistance, scientific group of genetic engineering and biotechnology, group of advanced training, etc.

The main objectives of the Institute within the framework of the World-Class Genomics Research Center

Development and implementation of genetic technologies

to create candidates for new generation gene therapy drugs

Development and	
of genetic	A Star
technologies	

to create prototypes of new generation diagnostic kits Creation of a domestic platform



for the production of components of the CRISPR/Cas system



THE INSTITUTE TODAY

As part of the advanced training program for specialists in the field of molecular diagnostics of infectious diseases, young researchers from the Institute and specialists from medical organizations from various regions of Russia are trained at the World-class Genomics Research Center.

Thanks to the activities of the World-class Genomics Research Center, the Institute has created a scientific and technical foundation for the implementation of a wide range of fundamental and applied research aimed at creating modern therapeutic drugs and ultra-precise diagnostic kits of a new generation using genome editing technologies.

To identify bacterial pathogens that threaten human health, a technology based on the use of the CRISPR/Cas system has been created. The new system was included by Rospatent **in the top five best medical inventions in Russia** based on the results of the first quarter of 2021 (RF patent No. 2743861).

A method for producing a preparation of the CRISPR ribonucleoprotein complex for identifying the John Cunningham virus (JCPyV) genome in ultra-low concentrations took 3rd place in the list of winners in the Rospatent nomination **"100 Best Inventions of Russia"** and was included in the "Promising Inventions" database (RF Patent No. 2747819)



Researchers of the Experimental Pharmacology Laboratory, 2022



Researchers of the Genome Editing Laboratory, 2022



DEPARTMENT FOR AIDS PREVENTION AND CARE



entral Research Institute

of Epidemiology of Rospotrebnadzor SCIENCE IN THE SERVICE OF YOUR HEALTH

Head of the Department

Vadim POKROVSKY

Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor **Distinguished Scientist of the Russian Federation** Head of the Reference Center for monitoring HIV and HIV-Associated Infections The Department for AIDS prevention and care dates back to 1985, when a group of HIV specialists diagnosed the first HIV and AIDS patients in the USSR.

Setting up surveillance

- The Department collects and analyzes data on HIV incidence and HIV testing across Russia through a unique database "Archive of epidemiological data on HIV surveys, identified HIV-positive cases and AIDS patients in the Russian Federation" (ASODOS), and provides information to the Federal Service for Surveillance on Consumer Rights Protection and Human Well-being
- Large-scale scientific research was carried out, all key components of the HIV response system in the Russian Federation were developed and implemented
- Experts of the Department for AIDS prevention and care contributed in large part to the establishment of the current HIV epidemiological surveillance system as well as the HIV response monitoring and evaluation system in Russia



 Fundamental government-approved policies on the HIV/AIDS response measures in the Russian Federation were drafted by the experts of the Department for AIDS prevention and care A Reference Center for Monitoring HIV and HIV-Associated Infections was established at the Department for AIDS prevention and care

Clinical activities

- An original Russian clinical classification of HIV infection was created to be used in HIV treatment
- A system of follow-up care for HIV patients was developed including standards, protocols, and guidelines for the prevention and treatment of HIV infection and comorbidities
- More than 70 clinical studies, mainly international, were conducted on the introduction of new drugs for the treatment of HIV and concomitant infectious diseases
- Serological, immunological and molecular biological methods for laboratory diagnosis of HIV infection have been developed and introduced into the practice of health-care institutions

- The Department pioneered enzyme immunoassay, immunoblotting, flow cytometry, and PCR diagnostics of HIV infection, which were then introduced at all specialized laboratories in Russia
- Along with the research laboratory, the Department incorporates a clinical diagnostic unit with immunological and virological laboratories offering their services to patients. The unit is in charge of the introduction of new diagnostic and treatment methods with the involvement of volunteer patients

Scientific and educational activities

- The Department provided training in HIV treatment and care to more than 5,000 thousand HIV specialists from Russia and neighboring countries
- Joint scientific research in the HIV field is carried out in six foreign countries
- The Department's specialists are engaged as experts in the development of HIV underlying instruments and principal policies published by the World Health Organization (WHO) and the Joint United Nations Programme on HIV/ AIDS (UNAIDS)



MOLECULAR GENETIC MONITORING CENTER

The Central Research Institute of Epidemiology of Rospotrebnadzor is developing its own software products and solutions to support the national project on import substitution in information and communication technologies. These products and solutions will enable operational and retrospective analysis of the epidemiological situation within each region of Russia, as well as the entire country:

- VGARus platform (Virus Genome Aggregator of Russia)
- Programs for validation of viral genome nucleotide sequences
- Tools for analysis of viral genome fragments
- Program for the analysis and processing of nucleotide sequence fragments for the detection of mutations in the genome of SARS-CoV-2

The VGARus virus genome data aggregation platform is a vital component of the ongoing "Sanitary Shield" federal project. The platform's flexibility enables the rapid setup and aggregation of data for epidemiological monitoring of pathogens and other significant infections. Efforts are currently in progress to incorporate modules that can handle viruses such as hepatitis B and C, influenza A and B, varicella, along with other infections.

In 2023, scientists from the Central Research Institute of Epidemiology of Rospotrebnadzor were honored with the main medical award for the best doctors in Russia. They received the award for their development and creation of the VGARus system, which facilitates the centralized analysis of the dynamics and structure of identified SARS-CoV-2 variants in the Russian Federation



Key activities

- The improvement of epidemiological surveillance by monitoring the genetic variability of pathogens causing socially significant infectious diseases (genomic surveillance)
- The sequencing of a large number of samples from patients with various diseases including COVID-19, viral hepatitis B and C, autoimmune hepatitis and HIV infection. Additionally, a control group of samples from healthy research participants will also be included
- The creation of primer panels in a multiplex format that can be used with next generation sequencing (NGS) technologies to identify various infectious agents
- The development of geographically structured phylodynamic models to study the importation and spread of different infectious agents
- Developing panels for detecting HLA gene variations through NGS to explore our susceptibility to infectious diseases
- The investigation of infectious agents that have the potential to be transmitted from animals to humans using genomic and cellular technologies, as well as bioinformatics and computational biology techniques



Scientist of the Molecular Genetic Monitoring Center, 2023



CLINICAL DEPARTMENT OF INFECTIOUS PATHOLOGY



entral Research Institute

of Epidemiology of Rospotrebnadzor SCIENCE IN THE SERVICE OF YOUR HEALTH

Head of the Department Zhanna PONEZHEVA

Doctor of Medical Sciences

The department was created in 1967 and has been conducting scientific research in the main areas for more than half a century:

- Development of new and improvement of existing algorithms for diagnosis, differential diagnosis, therapy of infectious diseases in children and adults, as well as sanitary, antiepidemic and preventive measures
- Determination of features of the clinical course of infectious diseases, including new and recurring infections, search for new genetic and epigenetic markers for diagnosing severe infection
- Study of the immunopathogenesis of acute and chronic infections of the respiratory and gastrointestinal tracts with mono- and combined infections in children and adults, possible complications of infectious diseases and long-term outcomes of COVID-19
- Study of changes in the microbiome of the respiratory and gastrointestinal tracts in various infectious diseases based on modern molecular genetics and bioinformatics research methods. Determining the role of the microbiome in the formation of antibiotic-resistant strains of microorganisms and developing probiotic preparations to prevent the spread of resistant forms of microorganisms



- Study of microbial pharmacokinetics and pharmacodynamics of drugs used for chronic infectious diseases to improve the effectiveness of therapy
- Study of the virome of the gastrointestinal tract and the study of its role in the pathogenesis of infectious diseases, the formation of colonization resistance of the body, a predictor of other diseases (oncological, allergic, autoimmune, etc.)

Within the framework of the "Problem-oriented scientific research in the field of epidemiological surveillance of infectious and parasitic diseases" industry program of Rospotrebnadzor, work is carried out on the following topics:

- "Clinico-epidemiological, immunopathogenetic aspects of the modern course of acute and chronic infections in children and adults, optimization of patient management tactics and disease prevention"
- "Clinical and pathogenetic substantiation and improvement of therapeutic programs for the preservation and restoration of the human microbiome"
- "Scientific and methodological substantiation of the system of epidemiological surveillance and prevention of diseases caused by SARSlike coronaviruses"

Clinical activities

- A classification of clinical forms of the new coronavirus infection (COVID-19) has been developed and a number of clinical features of the course of the disease depending on age have been described for the first time. Criteria for predicting the severity and outcome of COVID-19 have been determined
- An algorithm has been developed for the management of patients with acute respiratory viral infections and contact persons, which made it possible to optimize treatment tactics and preventive measures during the epidemic season, which has proven effective in the context of the COVID-19 pandemic
- Algorithms for diagnosing active forms of infections caused by different variants of herpes viruses have been developed, based on a quantitative study of the DNA of herpes viruses in various areas of the body
- Algorithms for clinical and laboratory diagnosis of the chromosomally integrated status of HHV-6A and HHV-6B have been developed
- A therapeutic algorithm for the management of patients with herpes viral infections has been scientifically substantiated and developed



CLINICAL TRIALS DEPARTMENT



Head of the Department Khadizhat OMAROVA

Candidate of Medical Sciences Senior research officer at the Clinical Department of Infectious Pathology

- Works on scientific project support: from design development to statistical processing and reporting on research results
- Conducting interventional and noninterventional scientific clinical trials of medicinal drugs, vaccines and dietary supplements, as well as clinical follow-up testing and in-human observational programs
- Evidence-based analysis and evaluation of the data resulting from the pursued clinical trials for safety and effectiveness
- Interaction with the local Ethics Committee, which provides independent expertise on ethical issues regarding biomedical human subject research
- Interaction with contractual counterparties on organizational and technical issues





EDUCATION CENTRE



Head of Educational Center

Denis USENKO

Doctor of Medical Sciences Leading researcher at the Clinical Department of Infectious Pathology

- The educational center of the Institute provides training of highly qualified personnel in residency (in the specialties of "Epidemiology", "Infectious diseases" and "Pediatrics") and postgraduate studies, as well as training in advanced training programs for epidemiologists, clinical laboratory diagnostics, infectious disease specialists and other specialties
- Teachers of the educational center have doctoral or candidate degrees in medical sciences and conduct research work in the disciplines taught
- Theoretical training of students is closely related to practical (clinical) training and research activities of the Institute
- Residency graduates have the opportunity to continue their studies in graduate school and find employment in leading clinics in the country. Postgraduate students continue their research activities and, based on their results, prepare scientific qualification work to defend the degree of Candidate of Sciences
- In order to form a personnel reserve, the educational center annually holds a competition for places of targeted training of students and residents



RESEARCH LABORATORIES

VIRAL HEPATITIS



Head of the Laboratory

Stanislav KUZIN

Doctor of Medical Sciences, Professor Head of the Reference Center for monitoring Viral Hepatitis

- Conducting retrospective and operational analysis of epidemiological situation regarding viral hepatitis in the Russian Federation and assessing the efficiency of anti-epidemic measures
- Development of an algorithm for epidemiological analysis using modern mathematical methods
- Creation of an information system that includes data on the genetic passport of the conditionally healthy population of the Russian Federation, taking into account its ethnic diversity
- Identification of molecular mechanisms of interaction of host organism with hepatitis A, B, C, D viruses
- Examination of the causes of epidemiological problems and outbreak of viral hepatitis in the constituent entities of the Russian Federation
- Monitoring of genetic variants of hepatitis
 A, B, C, D and E viruses circulating in the Russian Federation



HEALTHCARE-ASSOCIATED INFECTIONS



Head of the Laboratory

Alexey TUTELYAN

Corresponding Member of the Russian Academy of Sciences, Doctor of Medical Sciences Head of the Reference Center for monitoring Healthcare-Associated Infections

- Development and implementation of research projects and programs in priority scientific areas in the field of biology, defined in the strategy of scientific and technological development of the Russian Federation
- Risk-based epidemiological surveillance of HAIs in various types of hospitals
- Identification and analysis of factors and risk groups for HAIs
- Monitoring the etiological structure and drug resistance to biocides of HAI pathogens
- Improving measures to control and prevent HAIs
- Development of normative and methodological documents in the field of epidemiology and prevention of HAIs
- Effective training of highly qualified scientific personnel
- Organization of the work of the reference center for monitoring HAIs, as well as the problem commission of the academic council of Rospotrebnadzor



IMMUNOPROPHYLAXIS



Head of the Laboratory

Irina MIKHEEVA

Doctor of Medical Sciences, Professor Head of the Scientific and Methodological Immunoprophylaxis Center of Rospotrebnadzor Head of the Reference Center for research Varicella-Zoster Virus

- Preparation of scientifically based proposals to improve the organization of immunoprophylaxis
- Monitoring and evaluating the effectiveness of immunization safety measures
- Analysis of data on cases of post-vaccination complications in the Russian Federation
- Providing advisory, methodological and practical assistance to bodies and institutions of Rospotrebnadzor, the Russian Ministry of Health on improving vaccination prevention
- Organizing and conducting events to improve the qualifications of specialists from bodies and institutions of Rospotrebnadzor, the Russian Ministry of Health in the field of prevention of "controllable" infectious diseases with the issuance of relevant documents
- Organization of the work of the scientific and methodological center for immunoprophylaxis of Rospotrebnadzor at the laboratory



EPIDEMIOLOGY OF MENINGOCOCCAL INFECTION AND PURULENT BACTERIAL MENINGITIS



Head of the Laboratory

Irina KOROLEVA

Doctor of Medical Sciences Head of the Reference Center for monitoring Bacterial Meningitis

- Developing and improving strategies to prevent outbreaks and epidemics of meningococcal infection and purulent bacterial meningitis through information on identifying risk areas and detecting hyperinvasive strains, as well as developing evidence-based recommendations for vaccination strategies that allow for optimal protection at both local and federal levels
- Improving epidemiological surveillance of meningococcal infection and methods of its vaccine prevention
 - Depositing Russian invasive strains of *Neisseria meningitidis* into publicly available international databases, as well as into the collection of the reference center for monitoring bacterial meningitis for the purpose of conducting the national patent procedure and for developing scientific approaches to the design of domestic conjugate and protein vaccines against meningococcal, pneumococcal and *Haemophilus influenzae* infections



MOLECULAR EPIDEMIOLOGY OF VIRAL HEPATITIS



Head of the Laboratory

Karen KYUREGYAN

Professor of the Russian Academy of Sciences, Doctor of Biological Sciences

- Study of the molecular epidemiology of viral hepatitis in order to improve surveillance of these infections based on new fundamental knowledge
- Study of the role of virus genetic factors in the pathogenesis of viral hepatitis
- Development and implementation of a hepatitis E surveillance program in the Russian Federation
- Updating the Russian platform VGARus with sequences of hepatitis A, B, C, D and E viruses
- Implementation of the results obtained and study of viral hepatitis in regions of the world collaborating with the State Sanitary and Epidemiological Supervision of Russia



MOLECULAR METHODS FOR GENETIC POLYMORPHISMS RESEARCH



- Study of genetic characteristics and risks of common multifactorial diseases (primarily infectious, cardiovascular and oncological)
- Pharmacogenetic studies for improving the effectiveness, safety and economic feasibility of drugs
- Development of methods and kits for genetic polymorphisms and mutations detection, gene expression and methylation status research
- Search for new alleles and analysis of their relationships with known risk factors to develop the algorithms for individual and population risk calculations

Head of the Laboratory
Konstantin MIRONOV

Doctor of Medical Sciences



MOLECULAR DIAGNOSTICS AND EPIDEMIOLOGY OF REPRODUCTIVE TRACT INFECTIONS



- Improving the system of epidemiological monitoring of sexually transmitted infections based on molecular biological methods
- Improving the system of epidemiological monitoring of the spread of antimicrobial resistance based on molecular biological methods
- Training of highly qualified scientific personnel
- Participation in professional training programs for specialists of Rospotrebnadzor and medical organizations as part of the educational activities of the Institute
- Ensuring the functioning of a reference center for monitoring sexually transmitted infections

Acting head of the Laboratory

Tatyana SKACHKOVA

Acting head of the Reference Center for monitoring Sexually Transmitted Infections



MOLECULAR DIAGNOSTICS AND EPIDEMIOLOGY OF INTESTINAL INFECTIONS



Head of the Laboratory Konstantin KULESHOV

Central Research Institute of Epidemiology

of Rospotrebnadzor SCIENCE IN THE SERVICE OF YOUR HEALTH

Candidate of Biological Sciences Head of the Reference Center for Salmonellosis monitoring

- Development and support of reagent kits based on the use of molecular genetic research methods for the diagnosis of infectious diseases of the gastrointestinal tract
 - Monitoring the variability of the properties of acute intestinal infection pathogens, timely indication of dynamic changes in their populations, analysis of the epidemiological risks associated with them and timely informing Rospotrebnadzor about their presence
- Analysis of the state of laboratory diagnostics and monitoring of group incidence of acute intestinal infections in Rospotrebnadzor institutions
- Analysis of morbidity monitoring data for the main groups of acute intestinal infections, characterization of the features of the epidemic process on the territory of the Russian Federation



HIV INFECTION DIAGNOSTICS AND MOLECULAR EPIDEMIOLOGY



Head of the Laboratory
Dmitry KIREEV

Candidate of Biological Sciences

- Development and improvement of diagnostic reagent kits designed for detection, quantification and sequencing of HIV-1, HCV, HBV, HDV
- Molecular epidemiology of human immunodeficiency virus in Russia and EECA countries
- Study of HIV-1 drug resistance
- Investigation using bioinformatics analysis of cases of HIV infection potentially associated with the provision of health care
- Curation of the Russian database of HIV resistance to antiretroviral drugs
- Providing support to services for the prevention and diagnosis of infectious diseases in the countries of Eastern Europe and Central Asia
- Development of laboratory techniques to identify genetic markers that influence the rate of progression of HIV infection, as well as the risk of developing adverse events when taking ARV drugs
- Determining how long ago a patient was infected with HIV



MOLECULAR MECHANISMS OF ANTIBIOTIC RESISTANCE



- Comparative analysis of whole genomes of bacterial pathogens of clinical and food origin
- Development of comparative protocols for the genomic epidemiology of bacterial pathogens of clinical and food origin, based on whole-genome sequencing data. These protocols represent the basis of genomic epidemiology, which is becoming one of the main components of the investigation and containment of outbreaks of infectious diseases in clinical and non-clinical settings
- Analysis of antibiotic resistance mechanisms
- Publications in highly rated Russian and foreign journals

Head of the Laboratory
Yulia MIKHAILOVA

Candidate of Biological Sciences


EXPERIMENTAL PHARMACOLOGY



Head of the Laboratory
Alexander TYUMENTSEV

Candidate of Biological Sciences

- Conducting experimental studies using laboratory animals in the field of creating models of human diseases, as well as assessing the biological activity and effectiveness of recombinant drugs
- Creation of mouse models that have a human immune system
- Study of the degree of humanization in mouse models that have a human immune system
- Study of the biodistribution of human cells in mouse models that have a human immune system
- Studying the effectiveness of drugs in mouse models that have the human immune system



GENOME EDITING



Head of the Laboratory
Marina TYUMENTSEVA

Candidate of Biological Sciences

- Conducting experimental studies using pathogenicity group IV microorganisms and eukaryotic cells in the field of creating strains producing recombinant drugs, assessing the biological activity of recombinant drugs, developing preparative quantities of microorganisms and their expression products
- Carrying out genetic engineering work (molecular cloning)
- Creation of microorganisms producing recombinant drugs
- Development of preparative quantities of microorganisms and their expression products for studies of their biochemical properties
- Chromatographic purification of recombinant drugs
- Work on assessing the biological activity of recombinant drugs *in vitro*, including using eukaryotic cells



RESEARCH LABORATORIES

GENOMICS RESEARCH



Head of the Laboratory Kamil KHAFIZOV

Candidate of Biological Sciences

Head of the Reference Center for monitoring the risks of interspecies transmission of pathogenic microorganisms to humans

- Conducting molecular genetic monitoring of viral pathogens causing human infectious diseases
- Providing bioinformatics support for the VGARus portal, depositing genome sequences of pathogens, and implementing their bioinformatics analysis
- Examining the interaction between different pathogens causing infections and humans. This includes assessing the vulnerability of individuals to infectious diseases and predicting the severity of their progression
- The objective is to utilize genomic data in order to comprehend the mechanisms and dynamics of the spread of pathogens with the primary aim to integrate genomic epidemiology into the implementation of epidemiological surveillance and practical healthcare, both on a local and global scale
- Creating and establishing a laboratory facility for conducting molecular genetic research at the Institute. Conducting experiments on sample preparation and high-throughput sequencing to support the objectives of other departments within the Institute



NATURAL FOCAL INFECTIONS EPIDEMIOLOGY



Head of the Laboratory
Tatyana CHEKANOVA

Candidate of Biological Sciences

- Study of a complex of environmental and epidemiological causes leading to outbreaks of vector-borne infections
- Assessment of the loymopotential of existing and potential natural, anthropourgic foci of vector-borne infections and diseases common to humans and animals
- Analysis of the risks of epidemiological problems for a number of nosologies classified as natural focal infections
- Analysis, development and refinement of algorithms and methods for verification of diagnosis and monitoring of natural focal diseases
- Study and monitoring of the incidence of natural focal infections using methods for assessing the immunity of the population, molecular genetic typing of strains
- Study of the pathogenesis of natural focal diseases
- Development of normative and methodological documents on epidemiological surveillance, diagnosis and prevention of infectious natural focal diseases
- Providing advisory assistance to the population on the establishment of sanitary protection zones for anthrax burials



MOLECULAR DIAGNOSTICS AND EPIDEMIOLOGY OF RESPIRATORY TRACT INFECTIONS



Head of the Laboratory

Svetlana YATSYSHINA

Candidate of Biological Sciences Head of the Reference Center for monitoring upper and lower Respiratory Tract Infections

- Implementation of the "Improving molecular biological monitoring of pathogens of respiratory tract infections, developing new methods and technologies for their laboratory diagnosis and prevention" industry research program of Rospotrebnadzor for 2021–2025
- Analysis of the epidemic situation for respiratory tract infections
- Improvement of the system of respiratory tract infection epidemiological surveillance and monitoring of their pathogens
- Creation of new reagent kits based on NAAT used in the etiological laboratory diagnosis of influenza, ARVI and other respiratory tract infections
- Implementation of educational activities as part of the training of residents and advanced training of laboratory diagnostic doctors
- Coordination of the work of the reference center for monitoring upper and lower respiratory tract infections of Rospotrebnadzor



MOLECULAR MICROBIOLOGY AND EPIDEMIOLOGY OF MYCOBACTERIAL INFECTIONS



Acting head of the Laboratory Maria ALVAREZ FIGUEROA

- Participation in the implementation of the "Epidemiological surveillance of the effectiveness of measures aimed at reducing morbidity, morbidity and mortality from HIV infection and related diseases" industry research program of Rospotrebnadzor for 2021–2025
- Development and clinical validation of methods and reagent kits for the diagnosis of mycobacterial infections such as tuberculosis and mycobacteriosis as soon as in clinical medicine and veterinary
- Improvement of existing methods and reagent kits, their adaptation to the new instrumental base used in laboratories of the corresponding profile
- Improvement of tuberculosis epidemiological surveillance based on molecular biological methods
- Participation in postgraduate training programs for specialists from laboratories of various departmental affiliations as part of the educational activities of the Institute



RESEARCH GROUPS

DEVELOPMENT OF NEW METHODS FOR ZOONOTIC DISEASES DIAGNOSTICS



- Improvement of infectious animal diseases and zoonotic infection diagnosis using modern molecular biological methods
- Improvement and application of modern molecular genetic methods in the control system of products obtained using genetically modified plant sources
- Improvement and application of modern molecular genetic methods to identify falsification of the food and animal feed composition

Head of the research group
Tatyana ASTAKHOVA

Candidate of Biological Sciences



DEVELOPMENT OF NEW METHODS FOR OPPORTUNISTIC AND PAPILLOMAVIRUS INFECTIONS DIAGNOSTICS



Head of the research group Elvira DOMONOVA

Candidate of Biological Sciences

- The implementation of the industry research program of Rospotrebnadzor for 2021–2025 "The improvement of epidemiological methods for monitoring of prenatal, opportunistic and papillomavirus infections using new comprehensive diagnostic schemes for the pathogens identification"
- Development, validation, improvement of laboratory methods and reagent kits, optimization of diagnostic algorithms and their implementation in healthcare practice, sanitary and epidemiological surveillance
- Studying the prevalence of inherited chromosomally integrated *Roseolovirus humanbeta6a* and *R.humanbeta6b*, providing consultation for deciphering in cases of their closely related transmission
- Study of the role of *Betapolyomavirus hominis* in the development of infectious complications in patients with immunosuppression
- International cooperation in studying the prevalence of *Human papillomavirus* of various oncogenic risks





MATHEMATICAL METHODS AND EPIDEMIOLOGICAL FORECASTING



Head of the research group Evgeniy VORONIN

Candidate of Medical Sciences

- Implementation and improvement of epidemiological surveillance of infectious diseases and forecasting of the epidemic process using BIG DATA technologies, artificial intelligence and an expanded set of mathematical methods
- Development of "Digital Epidemiology": expansion of data for epidemiological analysis and forecasting through new types of non-medical data
- Development of an approach for epidemiological and economic analysis of infectious morbidity among the population of the Russian Federation for economic assessment
- Building effective cooperation with leading scientific and educational centers, medical organizations of friendly countries in the areas of modern digital technologies
- Creation of an innovative digital technologies
 training center for employees of
 Rospotrebnadzor and medical organizations of
 the Russian Federation



ANTIBIOTIC RESISTANCE OF FOODBORNE PATHOGENS



Central Research Institute of Epidemiology

of Rospotrebnadzor SCIENCE IN THE SERVICE OF YOUR HEALTH

Head of the research group

Nina KULIKOVA

Candidate of Biological Sciences Head of the Reference Center for monitoring the residual amount of antibiotics in food raw materials and food products and antibiotic resistance of bacteria

- Monitoring the antimicrobial resistance (AMR) of foodborne pathogens isolated from food products in the Russian Federation and EECCA countries
- Creation and maintenance of a working collection of antibiotic-resistant pathogenic microorganisms isolated from food products
- International interaction and exchange of information with laboratories of EECCA member countries as part of monitoring the antibiotic resistance of microorganism in food products and food raw materials
- Provision of educational and advisory services for the training of specialists from EECCA countries and coordination of strengthening the material and technical foundation of national laboratories in EECCA countries



DEVELOPMENT OF NEW METHODS FOR NATURAL FOCAL DISEASES DIAGNOSTICS



Acting head of the research group Evgeniy MOROZKIN

Candidate of Chemical Sciences

- Scientific and methodological support for epidemiological surveillance of natural focal, including vector-borne infections based on the development of methodological documents, including modern data on prevention, laboratory diagnostics, genotyping of pathogens, as well as vectors
- Development of new and improvement of existing methods and reagent kits used in the etiological laboratory diagnosis of natural focal infections, and their implementation in healthcare practice and sanitary and epidemiological surveillance
- Cooperation with international centers within the framework of extraterritorial monitoring of infectious threats based on a network of centers abroad of the "Sanitary Shield" federal project



GENETIC ENGINEERING AND BIOTECHNOLOGY



Head of the research group
Anna CHERKASHINA

Candidate of Chemical Sciences

- Development of enzymes for various molecular diagnostic methods
- Obtaining recombinant protein antigens and allergen proteins for serological diagnostics in the format of ELISA or immunochips
- Obtaining control samples for the production of reagent kits based on nucleic acid amplification methods for the diagnosis of infectious diseases in humans and animals
- Conducting molecular genetic experiments using Sanger sequencing. Performing Sanger sequencing experiments for other departments of the Institute. Ensuring the operation of reference centers





DEVELOPMENT OF NEW MOLECULAR BIOLOGICAL TECHNOLOGIES



- Development of reagent kits for rapid diagnosis of infectious diseases within the framework of the "Sanitary Shield" federal project
- Development of new and improvement of existing reagent kits based on various methods of nucleic acid amplification for laboratory diagnosis of various infections, their introduction into healthcare practice and sanitary and epidemiological surveillance, adaptation to new equipment for nucleic acid amplification
- Development of new and improvement of existing reagent kits for the extraction of nucleic acids, adaptation of reagent kits to automatic nucleic acid extraction stations

Head of the research group Vadim PETROV



PROTEOMIC ANALYSIS



- Study of the antigenic repertoire of pathogens of infectious diseases in humans and animals, search for new targets to identify antibodies to known pathogenic agents and confirm the pathogenicity of newly identified pathogens of infectious diseases
 - Development of new and improvement of existing methods and reagent kits used to detect antibodies in diseases of infectious and non-infectious nature and their implementation in healthcare practice and sanitary and epidemiological surveillance

Head of the research group Olga STUKOLOVA



BIOINFORMATICS



 Development and implementation of research projects and programs in priority scientific areas in the field of biology, defined in the Strategy for Scientific and Technological Development of the Russian Federation, in the "Scientific and Technological Development of the Russian Federation" state program

Development of new and improvement of existing software used for both fundamental study of pathogens and for molecular diagnostics, especially software for processing data obtained using novel sequencing methods

Bioinformatics support for others research groups

Acting head of the research group Gennady FEDONIN



DISSERTATION COUNCIL



Scientific secretary of the dissertation council Svetlana NIKOLAEVA

Doctor of Medical Sciences

- The Council is approved by the Higher Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation and accepts for defense dissertations for the academic degree of candidate and doctor of science in the following specialties:
 - 3.1.22. Infectious diseases (medical sciences)
 - 3.2.2. Epidemiology (medical Sciences)

The dissertation council consists of

27 doctors of medical sciences, of which:

- 11 belong to specialty
 3.2.2. Epidemiology
- 16 belong to specialty
 3.1.22. Infectious diseases

Including:

- 4 are full members of the Russian Academy of Sciences
- 1 is a corresponding member of the Russian Academy
- The dissertation council has continued its work for more than 50 years. Annually at least 15 dissertations are defended. Since 2021, the chairman of the dissertation council is the director of the Institute, Academician of the Russian Academy of Sciences, Doctor of Medical Sciences, Professor V. G. Akimkin



CONGRESSES AND CONFERENCES

The top priority objective of organizing the Institute's events is to increase the level of knowledge and professional skills of doctors on current issues of epidemiology, diagnosis and treatment of infectious diseases. The scientific program of events is developed by leading scientists and clinicians of the Central Research Institute of Epidemiology of Rospotrebnadzor and submitted to the Commission for the Evaluation of Training Activities and Materials for CME.

Annual All-Russian V. I. Pokrovsky Congress on Infectious Diseases

Infectious diseases in modern world: evolution, current and future threats

Congress with international participation Molecular diagnostics and biosafety

Congress with international participation Control and prevention of healthcareassociated infections (HAI) All-Russian scientific-practical conference with international participation Modern immunoprophylaxis: challenges, opportunities, prospects

Scientific and practical conference Epidemiological surveillance of HIV infection

Annual Conference on Infectious Diseases Pokrovsky Readings





COUNCIL OF YOUNG SCIENTISTS

The council consists of young scientists and specialists of the Institute, whose age does not exceed 35 years for specialists and workers engaged in scientific activities, and 39 years for PhD degrees, with the aim of:

- promoting the professional growth of scientific youth of the Central Research Institute of Epidemiology of Rospotrebnadzor, developing youth scientific initiatives and securing young scientific and professional personnel at the Institute;
- exchange of experience and knowledge between young researchers and specialists of the Institute;
- ensuring effective interaction between councils of young scientists, councils of young specialists, joint councils of young scientists and specialists of Rospotrebnadzor bodies and organizations;
- providing assistance to young scientists and specialists of the Institute in carrying out scientific research, promoting the latest achievements of science





PUBLISHING ACTIVITY

The editorial and publishing department was created in 2019. Its objectives include publishing mass media, as well as scientific papers, information, reference and advisory materials containing the results of scientific activities of the Central Research Institute of Epidemiology of Rospotrebnadzor.

The editors actively cooperate with leading domestic and foreign scientists, authors and reviewers of scientific publications. Manuscripts undergo double-blind peer review. During 2022-2023, more than 200 reviewers were involved in the expert assessment.



Journal of Microbiology, Epidemiology and Immunobiology

Published since 1924, the journal provides the latest results of scientific research in the field of microbiology, virology, epidemiology, vaccinology, immunobiology, prevention and control for infectious diseases. An interdisciplinary approach allows for a broad vision of the problems of fundamental and applied epidemiology, and an integrated approach to the creation of biomedical technologies. The journal is included in the international bibliographic database SCOPUS and is included by the Higher Attestation Commission in the peer-reviewed scientific publications list



Problems of Virology Journal

Published since 1956, it introduces readers to the latest achievements of Russian and global virology. The journal publishes articles devoted to the study of viruses and viral diseases of humans, animals and plants. Issues of medical and veterinary virology, molecular ecology and biology of viruses, molecular epidemiology, immunology, infectious diseases, genetic, cellular and protein engineering, and biotechnology are covered. The journal is included in the SCOPUS and MEDLINE international bibliographic databases, and is included by the Higher Attestation Commission in the peer-reviewed scientific publications list



PROBLEM COMMISSIONS OF THE ROSPOTREBNADZOR ACADEMIC COUNCIL

Created with the aim of improving the activities of the Academic Council of Rospotrebnadzor, aimed at solving pressing problems of scientific and methodological provision of sanitary and epidemiological well-being of the population in the following areas:

- Prevention of healthcare-associated infections
- Prevention of food and water borne infections
- Viral hepatitis
- HIV infection and co-morbidities

ROSPOTREBNADZOR REFERENCE CENTERS

In order to improve the system of epidemiological surveillance and laboratory diagnosis of infectious and parasitic diseases, 11 reference centers for monitoring socially significant infections have been created at the Institute which include:

- HIV and HIV-associated infections
- viral hepatitis
- acute intestinal infections
- salmonellosis
- infections of the upper and lower respiratory tract
- bacterial meningitis
- sexually transmitted infections
- healthcare-associated infections
- Varicella-zoster virus
- monitoring of residual amounts of antibiotics in food raw materials and food products and antibiotic resistance of bacteria
- monitoring the risks of interspecies transmission of pathogenic organisms to humans



PRODUCTION OF REAGENT KITS FOR IN VITRO DIAGNOSTICS

The Central Research Institute of Epidemiology of Rospotrebnadzor is a large developing research and production complex that solves problems in the field of epidemiological surveillance, diagnosis, prevention and treatment of a wide range of infectious and non-infectious human pathologies.



Product range - more than 400 items reagent kits for *in vitro* diagnostics

Since the beginning of the COVID-19 pandemic, the production volume of the Institute has increased 6 times and amounted to almost 2 million reagent kits for the diagnosis of various infectious diseases, which amounts to about 215 million diagnostics with the kit.

Most PCR studies to detect SARS-CoV-2 RNA performed in Russia were carried out using reagent kits developed and produced by the Institute.

In 2023, the range of manufactured products includes more than 400 items.

AmpliSens[®] reagent kits for *in vitro* diagnostics are characterized by high quality, not being inferior to foreign manufacturers, and at the same time, remaining economically beneficial for consumers





INTERNATIONAL ACTIVITY

Scientific and practical assistance to foreign countries



in the field of epidemiology, diagnosis, treatment and prevention of COVID-19

Within the framework of the "Sanitary Shield" federal project,



the Russian-Burundian Center for Research and Prevention of Infectious Diseases was created

Scientific cooperation with the Republic of Guinea and the Socialist Republic of Vietnam



in the combat against particularly dangerous and natural focal diseases

Cooperation

in the field of prevention of healthcareassociated infections

with leading institutions in Eastern Europe and Central Asia

International cooperation with UN and WHO agencies



The Institute has been designated as



the United Nations Food and Agriculture Organization (FAO) reference center

for antimicrobial resistance

Cooperation with the World Bank to develop



the **"KNOWLEDGE PLATFORM"** in the area of "Combating the spread of antibiotic resistance of microorganisms in food products and food raw materials"

Training of specialists from the Association of Southeast Asian Nations (ASEAN) countries



in the use of modern molecular genetic technologies

Implementation of the Rospotrebnadzor program



to provide assistance to the countries of Eastern Europe, Transcaucasia and Central Asia in the field of prevention, control and surveillance of HIV/AIDS





MEDICAL CLINICS





In 2001, a Scientific Advisory Clinical Diagnostic Center was created at the Institute. Research staff provide

consultations to children and adults, combining research work and providing medical care to the population.

Over more than 20 years of experience, the Center has established itself as a multidisciplinary medical institution with highly qualified personnel and technical potential for the diagnosis and treatment of infectious, endocrine, gynecological, urological, gastroenterological and other diseases.

Since 2021, the Center has become the **CMD Central** Medical Clinic

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The Infectious Diseases Clinic, an expert medical center for the diagnosis and treatment of infectious

diseases, began its work in 2022. Its staff includes doctors of the most demanded specialties, including infectious disease specialists of the highest category, with experience in monitoring and treating patients with infectious pathologies. Treatment is carried out under conditions of anonymity. Patients have access to more than 1,500 studies in the Central Research Institute of Epidemiology of Rospotrebnadzor, one of the country's reputable scientific institutions



LABORATORY RESEARCH

The laboratory diagnostic complex of the Central Research Institute of Epidemiology of Rospotrebnadzor is one of the recognized leaders in the market of laboratory services and molecular technologies in Russia, one of the first to begin performing research based on modern molecular genetic methods, such as real-time PCR, NASBA, sequencing, pyrosequencing, hybridization methods. All divisions of the laboratory are united by a single information system. The laboratories are equipped with modern equipment from leading global and domestic manufacturers





FUTURE OF THE INSTITUTE

PREDICTED DEVELOPMENT STRATEGY FOR 2023-2030:

- Continuous implementation of epidemiological surveillance of infectious diseases in the Russian Federation and the world
- Improving the national system of molecular genetic monitoring of known infectious pathogens, as well as creating algorithms for searching for previously unknown epidemiologically significant pathogens of infectious diseases based on innovative sequencing methods
- Dynamic study of the symptoms of the epidemic process of infectious diseases
- Development of new methods for the analysis of genetic polymorphisms and mutations for epidemiological monitoring and use in personalized medicine, as well as their implementation in practical healthcare
- Creation and implementation of advanced technologies for epidemiological analysis, modeling and forecasting of the epidemic process to increase the efficiency of making effective management decisions

- As part of import substitution: development and implementation of new domestic platform solutions using modern methods of biotechnology and genetic engineering to create unique medical products with gene diagnostic and gene therapy profiles
- Providing leading positions in the expert community of specialists in epidemiology, diagnosis, therapy and prevention of infectious diseases in children and adults
- Development of scientific approaches to improve the immunoprophylaxis system in the Russian Federation
- Training of specialists in the field epidemiology, infectious diseases, clinical and laboratory diagnostics, molecular genetic technologies for the Russian Federation and friendly countries
- Implementation of research programs at the international level in the field of studying the epidemiology and diagnosis of natural focal and socially significant infections, as well as antibiotic resistance of microorganisms



Central Research Institute of Epidemiology

+7 (495) 974-96-46 crie.ru amplisens.ru prepcr.crie.ru cmd-online.ru

3A Novogireevskaya St., Moscow, 111123 Russia INN (taxpayer identification number) 7720024671

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