FSI NATIONAL RESEARCH CENTER FOR
PREVENTIVE MEDICINE
OF THE MINISTRY OF HEALTHCARE OF THE
RUSSIAN FEDERATION

Moscow 2013
FSI NRCPM
Minzdrav of Russia
25 years
Silver Jubilee Edition
Moscow 2013
Welcome to the NRCPM!

Dear colleagues and friends!

25 years have passed since our center—a leading scientific research institution in the field of preventive medicine—was founded.

The recent history of the center began in 1988 when the Institute of Preventive Cardiology as a part of the All-Union Cardiology Scientific Center of the USSR Academy of Medical Sciences was reorganized into an independent Federal State Institution.

Over the past years, the NRCPM has played a significant role in the development of preventive medicine in the Russian Federation as well as abroad; and it has established close contacts with the leading international organizations working in the field of prevention of non-communicable diseases, such as the World Health Organization, the European Network for the Promotion of Health-Enhancing Physical Activity, the International Union Against Tuberculosis and Lung Disease, and other major research centers in Europe, the USA, and the CIS.

Research departments of the NRCPM have always been on the cutting edge of scientific research, playing an important role in organizing and conducting large-scale international studies and projects. The results of this work have formed the basis for modern approaches to the prevention of chronic non-communicable diseases and such are being introduced into the healthcare system in Russia and other countries.

Today, the National Research Center for Preventive Medicine solves vital tasks of preserving and enhancing the health of Russian population and reducing morbidity as well as mortality due to major chronic non-communicable diseases. Our staff conducts epidemiological monitoring of the major risk factors of cardiovascular diseases, establishes and introduces new methods and organizational forms of primary and secondary prevention of chronic non-communicable diseases, and is involved in developing and implementing action strategies to create a common preventive environment in Russia.

Federal Coordinating and Methodological Health Center was created at the NRCPM base under a Federal Target Program. This center has been designed to develop new technics for revealing risk factors and create modern prevention technologies against chronic non-communicable diseases, as well as monitor the effectiveness of health centers for adults at the medical institutions of the Russian Federation.
Thousands of doctors have been trained in our center for these 25 years. NRCPM is one of the leading institutions that train preventive medicine specialists.

We publish specialized medical journals that are included in the list of Higher Attestation Commission (VAK), namely Preventive Medicine, Cardiovascular Therapy and Prevention, and Rational Pharmacotherapy in Cardiology.

An academician of the RAMS, 19 professors, 43 doctors of sciences, and 136 candidates of sciences currently work at our center. 16 employees have honorary titles of Honored Scientist and Honored Medical Doctor of the Russian Federation, as well as Honored Health Worker. More than 20 employees of our center have been awarded with honorary degrees by the Minzdrav of Russia, whereas three are laureates of the State Prize of the Russian Federation for their outstanding contributions to the field of science and technology.

We have an advanced clinical base with the most modern equipment. The center provides specialized care including high-tech medical care for patients needing endovascular methods of treatment as well as treatment of cardiac arrhythmia and conduction disorders.

About 4,500 patients are treated in the hospital each year with more than 1,800 surgeries being performed. The capacity of outpatient departments enables the center to provide care to more than 250,000 patients annually.

This information booklet will tell you about the past and the present of the National Research Center for Preventive Medicine, helping you acquaint with our staff along with the tasks it performs.
We believe that now is the real time for implementation of the statement made by the Great Russian physician Nikolai Ivanovich Pirogov foretelling, “The future belongs to preventive medicine!”

Professor Sergey Anatolyevich Boytsov,
Doctor of Medical Sciences
Director of the Center,
Head Specialist on Preventive Medicine
History of the Center for Preventive Medicine

According to the order given by Y.I. Chazov, then the Minister of Healthcare of the USSR, the All-Union Research Center for Preventive Medicine of the Ministry of Healthcare of the USSR was established in 1988 at the Institute of Preventive Cardiology, which in turn was part of the All-Union Cardiology Scientific Center of the USSR AMS. However, the history of epidemiology and prevention of non-communicable diseases began much earlier.

First epidemiological studies on ischemic heart disease were initiated by A.L. Myasnikov, Academician of the USSR AMS, in the middle of the last century. Laboratory of Epidemiology of Cardiovascular Diseases was founded at the Institute of Cardiology in 1967. Severe growth in the mortality and disability of the population of the USSR due to ischemic heart disease (IHD) initiated a study on prevalence of the disease and its various forms (I.S. Glazunov, V.I. Metelitsa, A.N. Weichert, and N.A. Mazur).

Standard methods of examination were developed. They included physical, electrocardiographic, and biochemical examinations, as well as statistical analysis. The results of this activity served as a basis for creating the Department of Epidemiology and Preventive Cardiology in 1975 as part of the All-Union Cardiology Scientific Center of the USSR AMS. That department was later transformed into the Institute of Preventive Cardiology in 1982; and it became an independent scientific research institution in 1988, namely All-Union Research Center for Preventive Medicine of the Minzdrav of the USSR (All-Russian since 1991, and National since 1993). Professor R.G. Oganov became the first director of the Institute of Preventive Cardiology, later the Center for Preventive Medicine, led it for nearly 25 years.

The center became a leading institution in the Soviet Union and then in Russia studying the problems of epidemiology of cardiovascular and other non-communicable diseases, developing policies, strategies, and evidence-based programs for their prevention, as well as performing staff training. Most of the works were of the USSR priority, whereas some were performed under the international projects with the WHO, COMECON (The Council for Mutual Economic Assistance), and individual countries (USA, France, Germany, and Finland).

Laboratory of Atherosclerosis was established as a part of All-Union Cardiology Scientific Center of the USSR AMS. It was reorganized into the Department of Epidemiology of Non-communicable Diseases in 1988 already being a part of the Center for Preventive Medicine. M.A. Akhmeteli, G.S. Zhukovskiy, and S.A. Shalnova led the department for different years. Studying the prevalence of risk factors of chronic non-communicable diseases (CNCD) in different regions of the country and their contribution in developing the disease and mortality are the basic scientific fields of work for the department.
Participation in the All-Union Cooperative Program called Epidemiology of IHD and atherosclerosis in various regions of the country, which was implemented in 22 cities of the USSR, namely Moscow, Leningrad, Ufa, Nalchik, Novosibirsk, Irkutsk, Norilsk, Yakutsk, etc., thus enabled obtaining data on the prevalence of cardiovascular diseases (CVDs) and risk factors in various regions of the USSR.

During the years 2003 to 2010, the department participated in building database for the Federal Target Program called Prevention and treatment of arterial hypertension in Russia. Methodology for monitoring chronic diseases was developed under this program. Data obtained during the monitoring of arterial hypertension in various regions of the country is centered in the department; and the prevalence dynamics of hypertension as well as its determinants are analyzed therein. Dynamic evaluation of the effectiveness of hypertension treatment in the country has also been performed therein. The database contains information about more than 180 thousand examined patients.

The results of population cohort studies obtained in the department were included in the European model of 10-year risk of death from cardiovascular diseases—SCORE (Systematic COrony Risk Evaluation). The examination database of representative, randomly selected samples from Moscow and Saint Petersburg consisted of more than 24 thousand records of men and women examined according to the standard epidemiological procedures. It served as the basis for founding the Russian electronic version of the CNCD risk assessment (ORISKON).

The department has been actively participating over many years in the international cooperation, including epidemiological studies performed under the Soviet-American Program called Pathogenesis of atherosclerosis, international MONICA Program (Monitoring of the basic health parameters and determinant risk factors) performed under the auspices of WHO, and the study performed under the grant of the National Institute on Aging (USA) called Biodemography of the morbidity and mortality in Moscow.

Laboratory of Biostatistics was created as a part of All-Union Cardiology Scientific Center of the USSR AMS in 1976 and it became part of the department in 1988 being led by A.D. Deyev. The main tasks of the laboratory included population planning programs and clinical trials in the aspect of constructing an Informational System based on modern computer technology, processing and statistical analysis of the obtained data, presentation and evaluation of results, conducting scientific research developments in order to improve the statistical analysis of biomedical information, and building epidemiological models of risk as well as prognostic indices for acute myocardial infarction and IHD.
Department of Primary Prevention of Cardiovascular Diseases was established in 1975; and it became one of the first structural divisions performing scientific researches in the field of preventive medicine.

Professor I.S. Glazunov was the first head of the department with his significant contributions in directing the scientific activity of the staff that until now continues the scientific and practical researches in the field of prevention of CNCDs with common risk factors. I.S. Glazunov was the first in our country to initiate the largest multicenter preventive project called Multifactor IHD prevention, which was performed in seven centers of the former USSR, namely in Moscow, Kaunas, Kharkov, Kiev, Minsk, Tashkent, and Frunze (now Bishkek).

Professor L.V. Chazova became the head of the department in 1981. A five-year multicenter cooperative program on multifactor IHD prevention was implemented under her guidance achieving impressive results. Thus, the overall mortality in the group of intervention was significantly reduced by 43.3%, mortality due to CVDs by 51.1%, due to IHD by 48.3%, and that due to other CNCDs by 58.7%. According to the data obtained by L.V. Chazova and A.M. Kalinina, the preventive intervention in patients with arterial hypertension significantly enabled reduction in the incidence of myocardial infarction by 32.5% and that of stroke by 36.0%. This program was aimed at primary healthcare and conducted in close association with the local doctors. That allowed subsequently making important conclusions for healthcare practice and developing the necessary recommendations.

Building medical prevention structures was initiated in outpatient healthcare facilities of the country, such as medical prevention units or departments with functions to provide preventive care to the population in collaboration with the local service. Coordination Center of the Minzdrav of Russia for the prevention of non-communicable diseases started functioning under the department in 1997 pursuant to the order (No. 344 dated 27/11/97) by the Minzdrav of Russia. Methodological materials for doctors and public, as well as training packages on topical issues of prevention were developed and extended to different regions of the country. The program-gained experience was presented in Washington at the International Congress on Preventive Cardiology in 1989.

The department has been led by Professor A.M. Kalinina since 1993. Interdisciplinary developments on clinical and economic substantiation as well as comprehensive assessment of the technologies used in prevention of main chronic non-communicable diseases in the healthcare system are performed under her guidance.

Prevention of arterial hypertension and other cardiovascular diseases among students and schoolchildren was performed under the guidance of A.A. Alexandrov, who became the head of the Laboratory of Juvenile Hypertension in 1982.
Laboratory staff with international participation (the COMECON countries, and the USA) performed a number of large-scale studies on epidemiology and prevention of atherosclerosis precursors. It was established that the prevalence of risk factors of CVDs and other CNCDs increases dramatically in the adolescence already and in a significant number of cases they pass on to adulthood. Increased blood pressure in adolescents in combination with overweight and obesity are the powerful predictors of arterial hypertension in adult life. A system of measures for early prevention is developed. Methodological aid and recommendations for such prevention are created.

Laboratory on Fight against Arterial Hypertension was led by A.N. Britov since February 1979. Important tasks, which were later proved as extremely difficult, were put before the laboratory. The tasks included developing and implementing the detection and control of hypertension in unorganized populations (among individuals from urban and rural areas) as well as organized populations (among workers and employees of industrial enterprises).

All-Union cooperative program on prevention of arterial hypertension at industrial enterprises was developed in 1980. It was performed by 27 research groups in 23 cities of the USSR. The program was performed in Moscow at ZIL (the Likhachov Plant) with active intervention group and at Avtomobilny Zavod imeni Leninskogo Komsomola (AZLK), literally “Leninist Communist Youth League Automobile Factory,” with control group.

In most cases, the intervention group consisted of 30–59-year-old men, workers and employees of such industrial giants as Chelyabinsk Tractor Plant and Kharkov Tractor Plant, Gorky Automobile and Aviation Plant and many others. The program covered more than 72 thousand people. The active intervention (secondary prevention) group comprised of more than 43 thousand people. The program lasted for 5 years. The result outperformed all expectations as the overall mortality was reduced by ~16% in five years, while the mortality due to IHD by ~20%, and that due to stroke by 48%.

Experience of the cooperative program on prevention of arterial hypertension that ended in 1985 testifies the significant positive effect of the results of these studies on population processes associated with the widespread prevalence of arterial hypertension. It was shown that the secondary, predominantly the drug prevention of arterial hypertension is one of the most important aspects optimizing the control over this disease.

In the late ‘80s, the laboratory initiated studies on possibility to perform the primary, predominantly the non-drug prevention of arterial hypertension on a population-wide level. Primary screening of an organized population of two publishing houses, namely Izvestia, literally “Delivered Messages,” and Moskovskaya Pravda, literally “Moscow Truth” was performed in 1986. A fundamental possibility to prevent new cases of arterial hypertension in high-risk individuals using dietary and other non-drug methods was demonstrated. The experience of this scientific course of the department became the basis for the order of the Minzdrav of the USSR (No. 1175 dated 1985) that legalized the prophylactic measures.
Since 2006, the laboratory was reorganized to the Department of Secondary Prevention of Chronic Non-communicable Diseases, which was led by Professor N.V. Pogosova. The main scientific activity of the department includes studying various aspects of secondary prevention of CNCD, comprising of monitoring, technics, and optimization of both non-drug (preventive counselling as well as behavioral interventions) and drug treatment methods. In recent years, psychosocial factors affecting development of non-communicable diseases, including stress, anxiety, depression, behavioral peculiarities, and dependencies are the object of intense study for the department. Issues regarding development of healthy lifestyle are considered under broad medico-social aspects as well as health centers’ activities. Possibility to optimize their activities is studied at the clinical division of the Federal Health Center. The primary task of this center is to coordinate and provide methodological support to the health centers operating in all the Federal Subjects of Russia.

The most significant results of recent years are as follows: (1) large Russian multicenter clinical and epidemiological trials, such as COMPASS, COORDINATA, RELIEF I, and RELIEF II, were performed at the department; (2) the department participated in the implementation of large-scale and most important international (both European and transnational) studies in Russia on monitoring of secondary prevention, including HEART-QUAL, EURO-CARE-D, EUROASPIRE III, EUROASPIRE IV, SURF, and INTERSTROKE.

A Policy and Strategy Developing Department for Disease Prevention and Health Enhancement was established in 1986 and it was headed by I.S. Glazunov. R.A. Potemkina has been heading the department since 2009. Development of an integrated approach to mass prevention of CNCDs is the basic scientific activity of the department. The integration comprised of a complex effect on several common risk factors of CNCDs and not simply on some individual ones. It also included cross-sectoral and interdisciplinary preventive actions, consolidation of medical and non-medical measures, as well as combined use of prevention principles for the population and individuals. Today, all these approaches are widely used by the WHO in implementing its global strategic plan for prevention of CNCDs and in the strategic plan for prevention of these diseases in Europe.

Methods for monitoring and controlling the risk factors of non-communicable diseases were worked out and implemented by the department. A campaign against smoking called Quit and Win was conducted in association with the mass media for five times in the country. About 130,000 people in all participated in it. The result was 15% of smokers who participate in this monthly campaign quit smoking and remain being non-smokers for a year when duly checked.

Creating a series of policy guidelines and prevention strategies for CNCDs in Russia, along with methodical recommendations on principles of development and organization for CNCD prevention programs in the regions of Russia, as well as publishing them during 1991 through 2008 are among significant results achieved by the department.
For the first time, a three-day educational course called Evidence-based prevention of non-communicable diseases was worked out for decision-makers by the department employees and repeatedly conducted in different cities such as Moscow, Saint Petersburg, Tomsk, Yakutsk, Khanty-Mansiysk, etc.

A population laboratory was created in the city of Elektrostal that allowed implementing a number of CNCD prevention projects in the late '80s and early '90s of the last century. An especially noteworthy project called Breastfeeding (“A hospital that is friendly with baby”) was the first of its kind in Russia. The number of children breastfed at 6 months increased by about two times for 1.5–2 years thanks to the program.

Department of Mass Screening was founded in December 1986 as a part of the SRI of Preventive Cardiology; and V.M. Shamarin became the head of the department. An equipment base was centered in this department for functional and diagnostic methods performed in the center, so that the population screening and diagnostic studies were carried out here for the scientific divisions and clinic of the center. One of the most important areas of the department’s activity was evaluation of the effects of human exposure to low doses of ionizing radiation, as well as improvement of methods for medical examination, prevention, and treatment of the Chernobyl accident liquidators. The department was reorganized in November 2004 due to the sharp reduction of mass epidemiological examinations in the country.

The country’s first scientific Laboratory of Clinical Pharmacology was founded in 1976 as part of the All-Union Cardiology Scientific Center of the USSR AMS. The laboratory was later transformed into the Department of Preventive Pharmacology of the SRI of Preventive Cardiology in 1982; and Professor V.I. Metelitsa became the head of the department.

Complex clinical and pharmacological studies based on the protocols designed by V.I. Metelitsa were organized and performed in the department for a number of years. Such studies as KIAP-1 and KIAP-2 were multicenter studies that were performed in various cities and republics of the USSR (Y.V. Kokurina).

Pharmacokinetic (V.K. Piotrowski et al.) and pharmacodynamic studies of antihypertensive, antianginal, and other cardiac drugs, as well as studies on drug prevention of CVDs were successfully performed at the department. At present, the Laboratory of Pharmacokinetic Studies led by V.G. Belolipetskaya continues studying the bioequivalence of medicinal products as well as complex pharmacokinetic and pharmacodynamic studies.

Professor S.Y. Martsevich became the head of the Department of Preventive Pharmacology in 2000. Laboratory of Pharmacoepidemiological Studies headed by N.P. Kutishenko was created at the department in 2011.
Pupils of V.I. Metelitsa continued studies in the field of drug prevention in primary healthcare (Y.V. Bochkaryova) and use of outpatient diagnostic techniques in the prevention of chronic non-communicable diseases (Professor V. M. Gorbunov) heading the respective laboratories that come under the department led by A.M. Kalinina.

Department of Rehabilitation and Secondary Prevention of Comorbidities develops system of rehabilitation for patients that have suffered with acute coronary syndromes and/or have undergone various procedures of endovascular intervention. This division has a long history. Department of Rehabilitation for Patients with Acute Myocardial Infarction was established in 1968 by the decision of Y.I. Chazov; and it was headed by Professor R.M. Akhrem Akhremovich. That was the first specialized department of rehabilitation; and later, Department of Rehabilitation and Secondary Prevention of Cardiovascular Pathology was established under it. Professor D.M. Aronov, the founder of rehabilitation school in the USSR, headed the department.

The department was renamed to Department of Rehabilitation and Secondary Prevention of Comorbidity in 2011. It was headed by Professor M.G. Bubnova, a pupil of Professor D.M. Aronov. Two scientific laboratories were formed under the department: Laboratory of Cardiac Rehabilitation (led by D.M. Aronov) and Laboratory of Atherosclerosis and Thrombosis Prevention (led by M.G. Bubnova).

High medical and economic effectiveness of the developed rehabilitation methods was proved by the employees of this department. In particular, the duration of hospital stay for patients with myocardial infarction reduced by more than twice. Patients were revived under an accelerated though safe program. Based on this data, a national system of stepwise rehabilitation of patients with myocardial infarction was established in 1981 according to the following plan: inpatient care → sanatorium rehabilitation → outpatient monitoring.

Over 130 rehabilitation centers altogether were organized countrywide with 100,000 patients undergoing rehabilitation annually. Thanks to the introduction of the stepwise rehabilitation after myocardial infarction in the country, the number of bed-days associated with this disease dramatically reduced, whereas the number of patients returning to work increased more than twice. That was one of the best examples of effective implementation of scientific research results in the healthcare practice.

Laboratory of Metabolism Pathology became part of the Department of Metabolic Disorders led by Academician R.G. Oganov in 2001. It has been headed by D.V. Nebieridze who has been working in the center since 1975. Since 2010, it became the Department of Prevention of Metabolic Disorders, one of the first in Russia to study the pleiotropic effects of medicinal products correcting the metabolic disorders such as arterial hypertension, disorders of lipid metabolism, and impaired glucose tolerance.
Metabolic and vascular effects of drugs were studied during therapy, particularly the influence on endothelial function and microcirculation. The results of these studies were reflected in the four monographs prepared by the department employees. Pleiotropic effects of cardiac drugs subsequently gained the official recognition in modern European and Russian recommendations on arterial hypertension and disorders of lipid metabolism; in fact, they have become an additional criterion for the cardiac drugs.

One of the major practical achievements of the Department of Prevention of Metabolic Disorders is the cooperation with the European Society of Cardiology under the SCORE project. D.V. Nebieridze had been the national coordinator for the prevention of CVDs on behalf of the All-Russian Scientific Society of Cardiology during 2003 through 2011. Russian data was included in the SCORE project thanks to this cooperation. Moreover, the electronic version of the SCORE was adapted to Russian language by the department employees such as D.V. Nebieridze and A.S. Safaryan.

Одним из важнейших практических достижений отдела профилактики метаболических нарушений является
For the first time in Russia, the effect of using the SCORE system for improving adherence to the drug treatment of arterial hypertension and recommendations on healthy lifestyle was studied using its electronic version by the Department of Prevention of Metabolic Disorders (together with departments led by A.M. Kalinina and S.A. Shalnova) under a large-scale multicenter study (involving 350 physicians from 47 cities of Russia and 1,050 patients with high-risk arterial hypertension). It was found that the electronic version of SCORE motivates patients both to drug treatment and to a healthy lifestyle.

Laboratory of Biochemistry of the Institute of Therapy was headed by Professor M.G. Kritsmann since its foundation and later by Professor Y.N. Gerasimova. Under this laboratory, Laboratory of Atherosclerosis Biochemistry, which was established at the All-Union Cardiology Scientific Center of the USSR AMS, performed the function of lipid clinic. Biochemical studies of lipid levels and later that of apoprotein were performed in this laboratory, such being foreseen by the Soviet-American program called Pathogenesis of atherosclerosis.

Department of Biochemistry was created under the Laboratory of Atherosclerosis Biochemistry in 1982. It became part of the SRI of Preventive Cardiology followed by that of the Center for Preventive Medicine. Professor N.V. Perova was appointed as the head of the department. Two laboratories were founded at the department, namely the Laboratory of Dyslipoproteinemia (led by N.V. Perova) and the Laboratory of Hormone Study (led by Y.M. Seleznyov), which was transformed into the Laboratory of Biochemistry of CNCD Risk Factors (led by Y.A. Shakhov) in 1985 and into the Laboratory of Hormone-Cell Interactions (led by V.A. Metelskaya) in 1994.

Beginning from 1978, the laboratory has been actively developing new methods of lipoprotein studies, including the methods for analysis of apoproteins A1 and B.
For the first time in the USSR, a method for quantitative determination was determined (N.V. Perova and V.A. Metelskaya); and the apo B/A-I ratio was proved highly informative regarding the risk of acute complications of IHD. Methods for quantitative determination of apoproteins AII, CII, CIII, LP(a), apo E phenotyping, as well as for assessment of low and high-density lipoprotein heterogeneity based on particle size and protein composition were established also for the first time in the country. Cell cultures of aortic smooth muscles and endothelial cells, as well as that of specific cell-lines were determined for the study of blood lipoproteins.

A modified method was developed for quantitative determination of nitric oxide metabolites as indicators of functional activity of the vascular endothelium. Starting from 1983, the department has been conducting experimental studies on regulation mechanisms of lipolysis of triglyceride-rich particles and on the role of apoprotein E isoforms in receptor-dependent catabolism of lipoproteins (led by A.D. Dergunov).

Studying the molecular mechanisms of the pathogenesis of atherosclerosis and searching the early risk markers for this disease are the basic areas of scientific activity of the Department of Biochemical Markers of Chronic Non-Communicable Diseases Research, which was merged in 2010 and is led by Professor V.A. Metelskaya.

Laboratory of Clinical Biochemistry was organized under the department; and it is a modern clinical and diagnostic division of the Center today. V.M. Malakhov took an active part in the establishment and development of this division. He was the first in the country to create the standardization and quality assessment service for laboratory tests that became the basis for the Federal system of external quality control in clinical laboratory diagnostics, functioning successfully at present.

Research in the field of osteoporosis have been conducted at the Center for Preventive Medicine since 1997, when the group was organized under the leadership of I.A. Skripnikova and later transformed into the Department of Osteoporosis Prevention in 2008. Today, the department is equipped with modern diagnostic equipment for accurate quantitative determination of bone mineral density and has a number of additional diagnostic programs for vertebral deformities and body composition study. The main object of research is studying the correlation between osteoporosis and cardiovascular diseases associated with atherosclerosis in postmenopausal women as well as developing multifaceted prevention approaches for such diseases.

It is impossible to implement the developments of research departments and laboratories of the center in practical medicine without having a separate clinical base. In 1982, a clinical department was organized at the SRI of Preventive Cardiology of the All-Union Cardiology Scientific Center of the USSR AMS; and it was headed by Professor N.A. Gratsianskiy. Clinical Department of Coronary Heart Disease was developed at this division. By that time, the endovascular methods such as coronary artery balloon angioplasty and subsequently their stenting have already been actively implemented in the treatment of IHD.
The first use of balloon angioplasty in the USSR in 1982 became the most significant event in the field of clinical cardiology. The procedure was then performed by senior researcher V.P. Mazayev and Professor N.A. Gratsianskiy. Since the mid-'80s, endocardial biopsy of myocardium for the differential diagnosis of cardiomyopathy and myocarditis, study of myocardial metabolites found in coronary sinuses, and that of mechanisms of acute arrhythmias in patients with acute myocardial infarction and unstable angina have been performed in the center with the active participation of V.P. Mazayev. Since 1999, Professor V.P. Mazayev heads the radio-endovascular diagnostics and treatment at the NRCPM.

In 2003, the Center for Preventive Medicine was included in the list of Federal Agencies providing high-tech medical care in the field of cardiovascular surgery. Moreover, if there have been only 35 interventions performed in 2003 in patients with various forms of IHD, the number has now raised up to 1,500 endovascular interventions per year. It is not only the stenting or balloon angioplasty of coronary arteries but also interventions of the aorta and its branches, as well as of the carotid arteries. A sustainable development was observed in the field of arrhythmology in recent years. The specialists from the center provide treatment for almost all kinds of arrhythmias and conduction disorders. The study of development and treatment mechanisms of chronic heart failure has been actively developing.

The center’s clinic currently includes four clinical departments with 130 beds altogether. It is equipped with the most modern equipment that allows performing a wide range of diagnostic and treatment procedures, particularly the high-tech procedures. The center’s clinic has always served and continues serving the research base for primary and secondary prevention of CNCDs across Russia.

Since the beginning of the second decade of the 21st century, the role played by the NRCPM as the principal scientific and methodological institution for preventive medicine has becoming more crucial in the conditions of growing attention of government and public structures toward the demographic problems in Russia. The task that lies ahead of team of the center is to continue the research and developments using the experience accumulated so far and to ensure the implementation of new prevention programs and technologies.
Administration of the Center

**Professor Sergey Anatolyevich BOYTSOV**  
Doctor of Medical Sciences  
**Director of the Center**  
Head Specialist on Preventive Medicine of the Minzdrav of Russia

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**Professor Olga Nikolayevna TKACHEVA**  
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**First Deputy Director for Research and Clinical Work**

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**Docent Ruslan Mikhailovich LINCHAK**  
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Scientific Secretary
FSI National Research Center for Preventive Medicine of the Ministry of Healthcare of the Russian Federation is the leading Russian institution in the field of preventive medicine, providing scientific, organizational, and methodological support for the formation of a common preventive environment on the federal level and that of the Federal Subjects of Russia.

Main scientific activities

- Development of scientific principles for protection and enhancement of the public health
- Epidemiological studies that allow establishing the changing pattern of morbidity and mortality of population due to chronic non-communicable diseases, as well as epidemiological modeling of the cardiovascular risk
- Development and implementation of new prevention and health-improvement programs as well as technologies
- Enhancement of medical prevention under primary healthcare and specialized care provided to population
- Fundamental studies on role of various risk factors in the pathogenesis of chronic non-communicable diseases
- Methodological guidance through implementation of scientific achievements in the activities of medical and prevention institutions
- Development and implementation of methods for correction of behavioral and biological risk factors of chronic non-communicable diseases under specialized medical care including high-tech care for patients with cardiovascular and other diseases.

12 scientific departments and 14 scientific laboratories comprise the Scientific Divisions of the NRCPM.
Всероссийская научно-практическая конференция
«Неинфекционные заболевания и здоровье населения России»
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The department organizes and conducts scientific research studies on epidemiology of non-communicable diseases and their risk factors, including determination of prevalence and prognosis, as well as building epidemiological risk models.

It also provides organizational and methodological assistance to the scientific research organizations and healthcare facilities of the Russian Federation that participate in the epidemiological programs conducted under the auspices of the center.

In addition, it provides organizational and methodological assistance as well as consultation to the scientific research and healthcare organizations on issues of implementing principles for monitoring risk factors as a basis for prevention programs.

Following studies are currently performed in the department:

- Multicenter study called *Epidemiology of cardiovascular diseases and their risk factors in different regions of the Russian Federation* (ECVD-RF)
- Prospective monitoring of the mortality of previously examined cohorts, results of which become the basis for developing various risk assessment models
- *INTEREPID*, an international epidemiological study of rural population

### Most Significant Results of the Studies Performed in Recent Years

- Epidemiological studies were performed under the Soviet-American Program called *Pathogenesis of atherosclerosis*, international MONICA Program (*Monitoring of the basic health parameters and determinant risk factors*), which itself was performed under the auspices of WHO, and under the All-Union Cooperative Program called *Epidemiology of IHD and atherosclerosis in various regions of the country* implemented in 22 cities of the USSR, namely Moscow, Leningrad, Ufa, Nalchik, Novosibirsk, Irkutsk, Norilsk, Yakutsk, etc. That has enabled obtaining data on the prevalence of cardiovascular diseases and risk factors in various regions of the USSR.
The department has collected unique data obtained from the permanent prospective register of mortality formed on the basis of sample studies. This data enables estimating the contribution of risk factors to mortality and modelling the risk levels at various preventive interventions.

The results of cohort studies of male population, obtained in the department, are included in the European model of 10-year risk of death from cardiovascular diseases—SCORE (Systematic COronary Risk Evaluation).

An electronic version of risk assessment (ORISKON) has been developed based on Russian data in the healthcare system in association with the Department of Prevention of Chronic Non-communicable Diseases.

Methodology of monitoring chronic diseases has been developed under the Federal Target Program called Prevention and treatment of arterial hypertension in Russia. Data obtained during the monitoring of arterial hypertension in various regions of the country is centered in the department. The prevalence dynamics of arterial hypertension has been analyzed along with its determinants. Dynamic evaluation of the effectiveness of hypertension treatment in the country has also been performed.

Data on traditional as well as new risk factors and markers were obtained in the study called Stress, aging, and health performed in association with the Center for the Study of Aging and Human Development, Duke University, and the Max Planck Institute for Demographic Research. A prospective monitoring would enable estimating the contribution of these risk factors to the mortality in elderly men and women.
Main scientific research activities

The laboratory plans population programs and clinical trials conducted by the center in the aspect of constructing an Informational System based on modern computer technology that provides adequate collection, editing, processing, statistical analysis, and presentation of results in order to assess the tasks and objectives lying ahead.

It also organizes the functioning of specific programs and assistance using computers to create registration documents, determine the volume of study, organize collection and editing of data, quality control of the collected information, dynamic study status monitoring, statistical analysis, presentation, and evaluation of its results.

In addition, the laboratory performs scientific research developments to increase effectiveness of the Informational System in all aspects of research activity, the statistical analysis in particular.

Moreover, it provides organizational and methodological assistance to research organizations in the Russian Federation under the auspices of the Centre’s ongoing programs in all aspects of building the Informational System and to perform statistical analysis of its own data in the first place.

Besides, it provides organizational and methodological assistance as well as consultation to the scientific research and healthcare organizations on issues of data processing and statistical analysis of biomedical information.

Furthermore, the laboratory builds risk models for chronic non-communicable diseases.

Most Significant Results of the Studies Performed in Recent Years

Right from the founding of the laboratory, the employees have actively participated in all major programs on epidemiology and prevention:

- Lipid Research Clinic (USSR-USA cooperation);
- Juvenile hypertension
- Multifactor prevention
- Program on prevention of arterial hypertension at industrial enterprises
- Health monitoring of the Chernobyl accident liquidators
- Studies conducted by WHO and other international organizations (ERICA, MONICA, CINDY, INTERSAL, SAHR, RLMS, and some others).
During the years 2003 to 2010, the laboratory participated in building a database for the Program of arterial hypertension monitoring in the regions of the Russian Federation, which gathered the information about more than 180 thousand examined patients.

An examination database of representative, randomly selected samples from Moscow and Saint Petersburg has been built; and it consists of more than 24 thousand records of men and women examined according to the standard epidemiological procedures. It served as the basis for founding the Russian electronic version of SCORE (OSIRIS/ORISKON).

The laboratory performs assessment of the effectiveness of treatment methods for cardiovascular diseases based on the generated registers (studies such as LIS and PROGNOS-IHD).

Indices for registering acute myocardial infarction (LIS) and a number of various indices in the register of PROGNOS-IHD (conservative and invasive treatment of IHD) have been worked out.
Head of the Department: Professor Anna Mikhailovna Kalinina, Doctor of Medical Sciences

Main scientific research activities
The department conducts scientific study on development, implementation, and assessment of the effectiveness of technologies used in primary prevention of major chronic non-communicable diseases (NCDs) in various organizational models. Methodology and algorithms implementing economically sound multifaceted medical technology for primary prevention of major NCDs and their risk factors are developed.

Clinical, social, and economic effectiveness of the implementation model for these technologies is evaluated in organized groups.

The department studies the effectiveness of preventive technologies based on the consideration and correction of clinical and sociopsychological factors influencing the management tactics in patients with arterial hypertension and concomitant diseases, as well as information value of various outpatient diagnostic methods for developing sound preventive measures in this category of patients.

In addition, the department performs development, implementation, and assessment of the effectiveness of protection and enhancement of the health of teachers, schoolchildren, and their parents by preventing and counteracting harmful habits and promoting a healthy lifestyle in educational institutions.

Besides, the department studies the diagnostic value of standard questionnaires that are used in the course of preventive and medical checkups for early detection of the risk of ischemic heart disease and cerebrovascular diseases.

Most Significant Results of the Studies Performed in Recent Years

- Organizational models of primary medical prevention of cardiovascular diseases (CVDs) were worked out, practically tested, and evaluated in terms of clinical, social, and economic effectiveness by taking into consideration the features of organized groups.
- The expediency of incorporating psychological component in the subject of preventive intervention under programs for prevention of CVDs in organized groups was substantiated.
- Analysis of long-term social and economic benefits of multifactor prevention of CVDs was performed using integral indices such as LYS (life-years saved) and QALY (quality-adjusted life-year). Its results have proved the expediency of multifactor preventive approach, reality of labor potential conservation, and improvement in the prognosis of life at a relatively low cost due to effective primary medical prevention, especially at a younger age.
Head of the Laboratory: Yelena Victorovna Bochkaryova

Doctor of Medical Sciences

Main Scientific Research Activities

Main activities of the laboratory are to develop affordable methods of early detection of chronic non-communicable diseases in primary healthcare, as well as to create new approaches to improve the effectiveness and safety of drug prevention.

Methods for treatment of chronic non-communicable diseases using domestic buccal preparations based on biosoluble® polymers are developed in the laboratory.

New approaches for active detection of cardio-neurological diseases in primary healthcare facilities have also been being invented.

Besides, the laboratory develops drug prevention technologies that can reduce the likelihood of disorders of carbohydrate metabolism in patients with cardiovascular diseases.

In addition, the laboratory has been working on development of programs for health enhancement at workplace based on the interaction of medical science and business.

Most Significant Results of the Studies Performed in Recent Years

- A screening technic was created for early detection of cardio-neurological diseases in primary healthcare facilities. It is based on the use of special standardized questionnaire and it does not require significant economic expenditure. It is accessible to health care facilities of all levels. Application of the new technic allows detecting patients with early forms of vascular diseases of the heart and brain, and promptly performing an active preventive intervention.

- An original method that allows evaluating the likelihood of developing the disorders of carbohydrate metabolism based on an exercise test during the treatment with beta blockers has been developed and duly patented. This new method enables reducing the risk of developing diabetes connected with the use of drugs from this group.
An aspirin sensitivity test has been patented that involves a single application of polymer plate onto the gum; the plate contains a small dose of acetylsalicylic acid. The method enables detecting patients with high risk of aspirin-dependent changes in the mucous membranes of the gastrointestinal tract without gastroscopy.

A new method of antiplatelet therapy in patients with erosive ulcerative gastroduodenal changes has been developed and patented. The method is based on the use of domestic buccal forms of aspirin and it allows prevention of myocardial infarction and stroke in patients intolerant to conventional tablet form of the drug.

A method for treating inflammatory periodontal and gum diseases in patients with contraindications to magnetic-laser therapy has been created and patented. Use of this method can significantly increase the number of patients receiving effective multifaceted therapy of these diseases; and it can reduce government and public expenses on dental treatment and dentures.
Laboratory of Prevention of Chronic Non-communicable Diseases in Children and Adolescents

Head of the Laboratory: Professor Alexander Alexandrovich Alexandrov
Doctor of Medical Sciences

Main Scientific Research Activities

The laboratory performs development, implementation, and assessment of the effectiveness of systems for protection and enhancement of the health of schoolchildren, their parents, teachers, as well as students by preventing and countering harmful habits.

A prospective monitoring of dynamics of the major risk factors of cardiovascular and other chronic diseases has been conducted for over 25 years in children and adolescents beginning with the age of 12–13 years.

The results of laboratory studies underscore the priorities of prevention of risk factors of cardiovascular and other chronic diseases, as well as target groups for intervention.

Measures to reduce the level of stress and psychoemotional tension are taken among teachers and staff of secondary schools.

Most Significant Results of the Studies Performed in Recent Years

- The combination of high blood pressure with overweight has been proved to increase the risk of developing arterial hypertension in adulthood by 5–7 times, suggesting the need for early prevention of hypertension.
- Twenty-year smoking prevalence monitoring was performed among Moscow schoolchildren; and a significant increase has been established in the smoking frequency among girls.
- Twenty-two-year trend of risk factors of cardiovascular diseases has been assessed among participants aged between 12 and 14 years.
- The contribution of risk factors of cardiovascular diseases (hypertension and obesity) was assessed across intima-media thickness of carotid arteries.
- A study was performed to assess the health status of children, whose parents had myocardial infarction in young age.
- Prevention of harmful habits (smoking and alcohol consumption) was performed among children and adolescents aged between 12 and 14 years with the help of efforts put by teaching staff based on the guidelines for doctors and teachers developed by the laboratory staff.
- Methodical guidelines were developed and implemented for secondary prevention of smoking among children and adolescents.
- An assessment technic has been patented for prevention of arterial hypertension.
- Prevalence of major risk factors of cardiovascular diseases was studied in a number of students from institutes in Moscow.
Laboratory of Outpatient Diagnostic Methods in Prevention of Chronic Non-communicable Diseases

Head of the Laboratory: Professor Vladimir Mikhailovich Gorbunov
Doctor of Medical Sciences

Main Scientific Research Activities

One of the main scientific activities of the laboratory is associated with the methodological problems in practice of measuring blood pressure outside the clinic, namely ambulatory blood pressure monitoring (ABPM) and self-monitoring.

For many years, the laboratory staff has been studying various aspects of the clinical pharmacology of antihypertensive drugs, including issues of chronopharmacology and chronotherapy.

Another important scientific activity is to study the psychological status and quality of life in patients with arterial hypertension and create unique technics to assess these factors.

In recent years, the laboratory has performed studies that are not only in its conventional fields of research, but also became a participant in large multicenter studies. For example, the project called *Study of the nature and mechanisms of monthly dynamics in population morbidity and mortality due to diseases of circulatory system in the regions of the Russian Federation falling under various climatic and geographical zones* was performed under a government assignment.

The laboratory also participates in the program called *Comprehensive study of the aging process with assessment of vascular, genetic, cellular, and metabolic mechanisms*.

Most Significant Results of the Studies Performed in Recent Years

- A new technic called *Method to study the influence of various types of behavioral patients with stable arterial hypertension on the dynamics of circadian parameters of blood pressure* was developed and has received a patent for invention.

- An in-depth study was performed on the possibilities and limitations of detailed analysis of ABPM results. The results have been described in the monograph called *Modern aspects of practical use of the ambulatory blood pressure monitoring*.

- A study aid called *How to diagnose latent arterial hypertension?* was published based on the data gathered from the studies performed by the laboratory.

- A computer program called *Comprehensive analysis of blood pressure measurements taken using different methods* has been developed and a due Rospatent certificate was obtained for it.

- A monograph called *Use of ABPM to assess the effectiveness of antihypertensive therapy* was published.
Department of Rehabilitation and Secondary Prevention of Comorbidities

Head of the Department: Professor Marina Gennadyevna Bubnova
Doctor of Medical Sciences

The department comprises of two laboratories:

Laboratory of Atherosclerosis and Thrombosis Prevention
Head of the Laboratory: Professor Marina Gennadyevna Bubnova
Doctor of Medical Sciences

Main Scientific Research Activities

Studying the pathogenetic aspects and searching for early markers of atherothrombotic diseases and ischemic complications are among the main activities of the laboratory.

The laboratory also studies the pathophysiological mechanisms of action of acute exogenous stress caused by food intake on atherothrombotic and metabolic factors, as well as search of drug and non-drug methods for counteracting their negative atherothrombotic action.

In addition, it deals with development of new organizational and clinical aspects of drug and non-drug methods for secondary prevention of cardiovascular diseases (atherosclerosis, ischemic heart disease, arterial hypertension, and dyslipidemia) both isolated and in combination with other major diseases (chronic lung diseases, diabetes, cerebral atherosclerosis, atherosclerosis of the vessels of lower extremities, diseases of the gastrointestinal tract, etc.).

Besides, the laboratory studies hypolipidemic, pleiotropic, and anti-atherothrombotic mechanisms of action of modern hypolipidemic and antiatherosclerotic drugs in different categories of patients with cardiovascular diseases.

Most Significant Results of the Studies Performed in Recent Years

- An in-depth study of postprandial dyslipidemia and “dietary fat malabsorption” was performed. Thus, diagnosis criteria have been determined for “dietary fat malabsorption.” Its correlation with atherosclerosis and thrombogenesis was studied; and an intervention strategy has been worked out. New methodical approaches to the study of lipid metabolism and diagnosis of atherosclerosis at preclinical stage of its course were proposed.

- Four Russian scientific clinical programs were performed, namely PORÁ (literally “time”), PROGNOS, EFFORT, and PERSPEKTIVA.
Current state of implementation of the measures of secondary prevention in patients with high cardiovascular risk (patients with high risk of stroke, patients with ischemic heart disease, angina pectoris, and those after acute myocardial infarction) in day-to-day clinical practice was analyzed during these programs.

- Two patents have been received and 26 methodical guidelines and study aids have been published on cardiac rehabilitation, secondary prevention, and lipidology. In addition, two training demonstration videos have also been created.

Laboratory of Cardiac Rehabilitation

**Head of the Laboratory: Professor David Meyerovich Aronov**
**Honored Scientist of the Russian Federation**

**Main Scientific Research Activities**

The laboratory deals with development of new organizational models and multidisciplinary programs for medical rehabilitation of patients after acute cardiovascular events (acute coronary syndrome and myocardial infarction), coronary vessel surgeries (post-balloon angioplasty, stenting, and coronary bypass), and invasive treatment of cardiac rhythm disorders both isolated and in combination with other major non-communicable diseases.

It also studies the pathophysiological aspects of the influence of physical activity on different systems of the body in patients with varying degrees of severity of cardiovascular disease and concomitant therapy.

**Most Significant Results of the Studies Performed in Recent Years**

- Methods of organizing modern system for rehabilitation of cardiac patients have been developed in terms of healthcare practice.

- Programs of comprehensive rehabilitation of patients who had acute coronary syndrome, myocardial infarction, aortocoronary bypass, and intracoronary intervention (introduction of balloon and/or stent) at different stages of rehabilitation, both inpatient and outpatient, have been developed.
Methods and programs for comprehensive polyclinic-level rehabilitation have been developed for patients with ischemic heart disease accompanied by other cardiovascular diseases, such as arterial hypertension, heart failure, and diabetes.

Reference standards have been worked out and offered for physical activity in cardiorehabilitation and secondary prevention. Classification of physical activities was established based on the nature of their influence on hemodynamic parameters and atherothrombotic factors.
Head of the Department: Professor Nana Vachikovna Pogosova
Doctor of Medical Sciences

Main Scientific Research Activities of the Department

The main scientific activity of the department includes studying various aspects of secondary prevention of non-communicable diseases, comprising of monitoring, technics, and optimization of both non-drug (preventive counselling as well as behavioural interventions) and drug treatment methods.

Laboratory of Prevention of Psychosocial Factors being part of the department (led by Professor N.V. Pogosova) studies the psychosocial factors affecting development of non-communicable diseases, including stress, anxiety, depression, behavioral peculiarities, and dependencies.

Most Significant Results of the Studies Performed in Recent Years

- Large Russian multicenter clinical and epidemiological trials, such as COMPASS, COORDINATA, RELIEF I, and RELIEF II, were performed at the department.
- The department participated in the implementation of large-scale international (both European and transnational) studies in Russia on monitoring of secondary prevention, including HEART-QUAL, EURO-CARE-D, EUROASPIRE III, EUROASPIRE IV, SURF, and INTERSTROKE.
- The department employees have performed clinical studies that enable revealing new ways of using drugs, including ACE inhibitors, calcium channel blockers, antiplatelet agents, metabolic drugs, anxiolytics, and antidepressants.
- The department took part in the development and implementation of Russian national guidelines and several European documents on cardiovascular prevention in clinical practice.
- Federal Coordinating and Methodological Health Center was created with a direct participation of the department.
- The department employees have been actively participating in the academic educational programs meant for postgraduate education of doctors in Formation of a healthy lifestyle.
- The department is actively involved in the information and communication campaign on formation of a healthy lifestyle and prevention of non-communicable diseases. Particularly, the department conducts annual conferences, symposia, round tables, public events, and educational activities for physicians and public in association with the National Scientific Society of Cardiovascular Prevention and Rehabilitation.
The laboratory considers both broad medico-social aspects of formation of a healthy lifestyle and the role of the health centers in this process. Problems of optimization of their activities are studied at the clinical division of the Federal Health Center. The primary task of this center is to coordinate and provide methodological support to the health centers operating in all the Federal Subjects of Russia.
Main Scientific Research Activities of the Department

The main activity of the department is to provide methodical guidance on development, implementation, and evaluation of integrated science-based prevention programs for non-communicable diseases and on formation of a healthy lifestyle at both the federal and regional levels.

The integration comprises of two principal approaches to the program organization: (1) effect on several common risk factors of non-communicable diseases and not simply on some individual ones (smoking, irrational diet, lack of physical activity, etc.), and (2) building these programs on an interdisciplinary basis with involvement of various partners such as educational, social protection, sports and training facilities, etc.

Today, one of the important activities of the department is to develop regional programs of disease prevention and enhancement of the public health. In order to implement this activity, an educational course called Evidence-based prevention of non-communicable diseases was worked out for decision-makers. The department performs organizational work concerning the activity of the specialized committee of the Expert Council on Preventive Medicine in the field of healthcare of the Minzdrav of Russia.

The department employees deal with the issues concerning the study of physical activity of population. Methodical guidelines on optimizing physical activity of patients were developed for the primary healthcare physicians and they were included in the national recommendations on cardiovascular prevention by the All-Russian Scientific Society of Cardiology in 2011.

The department cooperates with leading international organizations working in the field of prevention of non-communicable diseases such as the World Health Organization (WHO), the European Network for the Promotion of Health-enhancing Physical Activity (HEPA Europe), and the Norwegian Institute of Public Health.
Most Significant Results of the Studies Performed in Recent Years

- An educational course called *Evidence-based prevention of non-communicable diseases* was worked out for decision-makers. An educational seminar was conducted for representatives from 34 regions of Russia.

- Methodological guidelines on planning, implementation, and evaluation of prevention programs were worked out.

- Regional programs on prevention of non-communicable diseases and formation of healthy lifestyle in number of Russian regions were worked out under scientific and methodological assistance of the department.

- Methodological guidelines on optimization of physical activity of patients were worked out for primary healthcare physicians.
Head of the Department: Professor Sergey Yuryevich Martsevich
Doctor of Medical Sciences

Main Scientific Research Activities of the Department

The main scientific activity of the department focuses on the study of the effectiveness and safety of medicinal products, as well as the role of medicinal products in primary and secondary prevention of cardiovascular diseases. This includes building registers in order to obtain unique information about peculiarities of disease course, about actually prescribing the medicinal products in the practice, and their impact on the disease outcomes.

The department employees actively deliver lectures under academic educational programs. Besides, they conduct surveys with the doctors to evaluate their real knowledge about the basics of clinical pharmacology and peculiarities of using some specific drugs in clinical situations.

One of the activities of the department is participation in the international multicenter randomized controlled trials. The quality of performing these studies was corroborated by the results of inspection performed by the Food and Drug Administration (FDA), USA in 2013.

Most Significant Results of the Studies Performed in Recent Years

- A method for evaluating therapeutic equivalence of generics and original drugs was worked out by comparing their clinical effectiveness and safety. For this purpose, protocol of a relatively short, randomized clinical trial with assessment of the drug effectiveness on surrogate endpoints was worked out and tested. This protocol allows studying the therapeutic equivalence of different dosage forms of one and the same drug as well as medicinal products with close actions, such as medicinal products belonging to the same class.

- A register of acute myocardial infarction was created for 2009–2011 in Lyubertsy, Moscow region (LIS). The register allows analyzing the long-term outcomes of acute myocardial infarction, including the impact of medicinal products on them.

- Patients with coronary angiography performed at the NRCPM during 2004–2007 were included in the register of PROGNOS-IHD. An assessment of actual prognosis in patients with angiography-confirmed stable ischemic heart disease was thereunder performed along with assessment of the prognosis determinants.
The features of drug therapy were also assessed in patients after discharge from hospital and its compliance with the modern clinical recommendations.

The performed surveys with physicians have revealed their lack of knowledge about the basics of clinical pharmacology and rational pharmacotherapy of cardiovascular diseases, as well as difficulties in selecting drug therapy for a specific clinical situation.

Examination of physicians as well as surveys performed with them in several Russian regions have revealed not only an incomplete awareness of doctors about risk factors of cardiovascular diseases concerning them but also an underestimation of their own cardiovascular risk.

Today, a register of patients who suffered stroke for 2009–2011 in Lyubertsy, Moscow region (LIS-2) has been being created to assess the quality of drug therapy. Preliminary data evidences active measures that are insufficient on the part of primary healthcare regarding the primary and secondary prevention in patients with high risk of stroke.
Main Scientific Research Activities

The main scientific activity of the laboratory is evaluation of the effectiveness and safety of cardiac medicinal products in day-to-day clinical practice based on the data from registers of patients with cardiovascular diseases. An important part of the work is to assess the quality of treatment and its compliance with the modern clinical recommendations.

Today, the laboratory staff improves the technics to determine comparative therapeutic effectiveness and safety of medicinal products according to the data found in registers, which have clearly limited time parameters.

The technics of interviewing patients with various cardiovascular diseases are further improved in order to reveal the most significant factors affecting adherence of patients to the prescribed treatment.

The possibilities of reducing the risk of cardiovascular complications during drug therapy are studied in day-to-day clinical practice under monitoring studies.

Most Significant Results of the Studies Performed in Recent Years

- Methodological approaches to analysis of the effectiveness and safety of drug therapy in clinical practice were worked out according to the data from register of patients with cardiovascular diseases.
- The causes determining the delay in seeking specialized medical care by patients in acute coronary syndrome were revealed.
- Questionnaires to assess adherence to the prescribed therapy were worked out for patients with acute coronary syndrome (ACS), patients who suffered stroke, and patients with cardiovascular diseases monitored both at inpatient and outpatient departments. The method validity was verified.
- Causes of inadequate prescription of major groups of cardiac drugs were studied in patients with high and very high risk of cardiovascular complications. The factors associated with poor adherence of patients to the prescribed therapy were studied.
Laboratory of Pharmacokinetics

Head of the Laboratory: Vera Gennadyevna Belolipetskaya
Candidate of Biological Sciences

Main Scientific Research Activities
The laboratory mainly deals with studying the possibility of optimizing pharmacotherapy using pharmacokinetic studies. Specialists from the laboratory study the correlation between pharmacokinetics of medicinal products and genetic factors.

Chronopharmacological studies of cardiac drugs are performed at inverted reception. The dependence of pharmacological effects on the pharmacokinetic features is studied. Clinical studies of early phases play a significant role in the activities of the laboratory. More than 20 bioequivalence studies are performed every year in close cooperation with hospital and polyclinic of the center.

Most Significant Results of the Studies Performed in Recent Years
- The expediency of comprehensive pharmacokinetic and pharmacodynamic approach to the study of new medicinal products has been proved, including that for generics.
- The dependence of pharmacokinetic parameters and hemodynamic effects of angiotensin II receptor blockers on the genetic status was revealed.
- The necessity of performing chronopharmacological study was revealed for the drugs dosed once daily.
- The pharmacokinetics of a large number of new drugs proposed for clinical use was studied.
Head of the Department: Professor Olga Nikolayevna Tkacheva
Doctor of Medical Sciences

Main Scientific Research Activities of the Department

The department was established in 2011. The department staff comprises of highly skilled specialists not only in the various traditional areas of medical science (general medicine, cardiology, endocrinology, neurology, and functional diagnostics) but also in its new branches (vegetology and somnology).

The main activity of the department is to study issues of human aging, especially aging of the heart and blood vessels. The research program includes a wide range of issues, beginning from the study of basic changes at cellular level and ending with the study of influence of chronic stress, behavioral habits, diet, and physical activity on the aging process.

A study of genetic markers of cellular ageing such as telomere length and telomerase activity has been performed at the department. These figures seek the role of the biomarkers of aging, which reflect the influence of genotype and adverse effects of the environment.

Detecting the principles of correlation between telomere shortening, and atherosclerosis and arteriosclerosis development mechanisms, being the main manifestations of vascular aging, sheds light on understanding the pathophysiology of these processes.

The aging processes of the cardiovascular system along with the analysis of genetic and metabolic markers are studied in the patients both with existing diabetes and in those with prediabetes. The obtained data will not only control carbohydrate metabolism successfully but also prevent the development of diabetes complications, reduce the cost of its treatment, as well as maintain the quality of life for patients with diabetes.

Neurologists from the department have been studying the effects of stress on the state of cardiovascular system. It uses psychological testing is used for this along with the study of heart rhythm variability and skin-induced sympathetic potentials.

Another activity of the department is sleep medicine (somnology). Patients with sleep disorders can get a modern consultative, diagnostic, and therapeutic care at the department using the most modern equipment.
The prevalence of sleep disorders, circadian rhythms, and melatonin levels as one of the markers of biological age of person are planned to be studied.

Development of systems for the assessment of biological age of person and a program of prompt and effective prevention of cardiovascular diseases based on personalized approach will become the results of the studies.

Studying the hemostasis pathology as well as the primary and secondary prevention of thromboses is an important activity of the department. New aspects of using modern anti-coagulant drugs are studied together with the Laboratory of Radio-surgical Treatment of Cardiac Arrhythmias.

The department staff has been conducting academic educational program called the complex issues of prevention, diagnostics, and treatment of thromboses in internal medicine.
Head of the Department: Professor Sergey Anatolyevich Boytsov
Doctor of Medical Sciences

Main Scientific Research Activities of the Department
The department was established in 2011; and it deals with the development and implementation of new approaches in diagnostics and treatment of cardiovascular diseases, as well as methods of assessment of the effectiveness of care provided to patients with cardiovascular diseases and that of inpatient and outpatient secondary prevention methods. In addition, the department studies genetic risk markers for cardiovascular diseases under population-based studies and at an individual level.

The structure of risk factors, comorbidities, and outcomes of cardiovascular disease is studied along with quality assessment of their treatment using registers under primary healthcare.

The nature and mechanisms of dynamics in population morbidity and mortality due to diseases of circulatory system is studied in the regions of the Russian Federation falling under various climatic zones.

Modern telemedicine technology for monitoring key parameters of the patients’ health status are developed and implemented in day-to-day clinical practice.

The department staff also studies the molecular and genetic mechanisms of rhythm and conduction disorders of the heart, consistency in the management of patients with primary electrical heart diseases, including familial forms of diseases (prolongation of QT interval and catecholaminergic polymorphic ventricular tachycardia), as well as primary and secondary prevention of sudden cardiac death.

Besides, the department has been working out optimal treatment tactics for patients with severe asymptomatic carotid atherosclerosis.

The department also studies genetic risk markers for cardiovascular diseases under population-based studies and at an individual level.

The prevalence of cardiovascular abnormalities is studied in the highly skilled Russian athletes. Measures on prevention of sudden death are developed and implemented in the sports.

The department employees cooperate with the following specialized cardiac clinics:

- Heart failure clinic
- Lipid Clinic
- Arrhythmology Center

Laboratory of Molecular Genetics was founded as a part of the department in September 2012 for developing personalized medicine at NRCPM.
Head of the Laboratory: Alexey Nikolayevich Meshkov
Candidate of Medical Sciences

Main Scientific Research Activities of the Department

The main scientific objective of the laboratory is implementation of genetic testing in medical practice.

The laboratory has modern equipment necessary for performing molecular genetic studies, including whole genome sequencer SOLID 5500 XL.

The laboratory staff studies genetic and epigenetic risk markers for cardiovascular diseases under population-based studies and at an individual level.

Besides, the laboratory has been performing the development and optimization of bioinformatic approach in the analysis of genetic data obtained at the whole genome sequencing. It also studies pharmacogenetics of cardiac drugs and performs researches on epigenetics and vascular aging.
Main Scientific Research Activities of the Department

The main objective of the department consists of studying the prevalence of comorbid conditions, the most common combinations of chronic non-communicable diseases, and their impact on life expectancy. The emphasis is laid on the correlation among cardiovascular diseases, behavioral risk factors, diabetes, metabolic syndrome, erectile dysfunction in men, and reproductive pathology in women.

A risk model of preventable death from various conditions is planned to be created based on epidemiological monitoring. This technic will be used for a prompt administration of diagnostic and therapeutic measures.

The department employees take part in the expert consultations organized by the World Health Organization (WHO) with the member countries and agencies of the United Nations Organization (UNO) on development of an all-round global monitoring of non-communicable diseases.

The specialists from the department participate as experts in the work meetings of the Asia-Pacific Economic Cooperation (APEC) concerning healthcare issues and innovations in the field of healthy lifestyle, as well as use of economically substantiated effective preventive interventions in clinical practice to reduce the burden of non-communicable diseases on the economy of countries that are part of the APEC.

The department takes part in the expert activities of the International Union against Tuberculosis and Lung Disease on assessment of the effectiveness of implementation of key legislative, regulatory, and legal acts as well as modern control methods of tobacco smoking to reduce the burden of smoking (prevalence and preventable mortality) for short-, average- and long-term future.

The specialists from the department participate in performing the Russian counterpart of the international study DYSIS.

The department actively participates in preparing and publishing specialized medical journals that are included in the list of Higher Attestation Commission (VAK), namely Cardiovascular Therapy and Prevention, Rational Pharmacotherapy in Cardiology, Preventive Medicine, and Cardiology Today bulletin.
The department employees deliver lectures to the public, patients, and healthcare professionals regarding the risk factors of development and progression of comorbidities as well as their primary and secondary prevention.

Most Significant Results of the Studies Performed in Recent Years

- Dynamics of the main demographic indicators in the Russian Federation was analyzed for the period 1990–2009. Its results have been published in the journal of Cardiovascular Therapy and Prevention in 2012.
- The major activities concerning planning, implementation, and evaluation of the programs for prevention of non-communicable diseases were presented and published in the journal of Preventive Medicine in 2012.
- Conditions and causes of the gender differences in cardiovascular diseases were determined. The material was published in the journal of Cardiovascular Therapy and Prevention in 2012.
- The effectiveness of implementation of key legislative, regulatory, and legal acts as well as modern control methods of tobacco smoking to reduce the burden of smoking (prevalence and preventable mortality) in Russia for short-, average- and long-term future was proved.
Head of the Laboratory: Professor Mehman Niyazi Ogly Mamedov
Doctor of Medical Sciences

Main Scientific Research Activities

The laboratory assesses and counteracts the cardiovascular risk among individuals with risk factors of cardiovascular disease both in individual socio-demographic groups and among the general population.

The laboratory also studies erectile dysfunctions and their correlation with the risk factors of cardiovascular diseases and the possibility of their correction when antihypertensive, lipid-lowering, and anti-hyperglycemic agents are prescribed.

A prospective monitoring of patients with metabolic syndrome and diabetes is performed by the laboratory to assess the risk of complications of these conditions.

Joint clinical and population studies on primary and secondary prevention of cardiovascular diseases are performed in association with leading cardiac institutions of Ukraine, Azerbaijan, Kazakhstan, and Tajikistan.

Most Significant Results of the Studies Performed in Recent Years

- Overall cardiovascular risk among individuals of working age was assessed in a number of epidemiological studies; and that allows developing and performing targeted multifactorial primary prevention of cardiovascular diseases.
- The prevalence of erectile dysfunction and androgen-deficient state was evaluated for the first time in the practice of cardiology. The correlations among health issues in men, cardiovascular risk factors, and diseases were revealed. Treatment algorithms were worked out for men with erectile dysfunction and androgen-deficient state.
- The effectiveness of anti-hyperglycemic drugs was assessed during clinical trials. Drug therapy plans were worked out for individuals with early disorders of carbohydrate metabolism.
- Men’s health clinic was founded at the NRCPM by the laboratory employees; and the results of scientific researches and international recommendations have been implemented therein.
Department of Biochemical Risk Markers of Chronic Non-Communicable Diseases

Head of the Department: Professor Victoria Alexeyevna Metelskaya
Doctor of Biological Sciences

Main Scientific Research Activities of the Department

The department studies early biomarkers of diseases of the cardiovascular system, including those caused by atherothrombosis. It also deals with the search of metabolic targets of primary and secondary prevention of these diseases.

Moreover, the department studies the molecular mechanisms of pathogenesis of atherosclerosis in the field of interaction of blood plasma lipoproteins with cells of vascular wall.

Assessment of the functional activity of vascular endothelium is performed.

Studies are performed in the field of structural biochemistry of lipoprotein metabolism and lipid transport, molecular diagnostics of lipid disorders, lipoproteomics, pharmacogenomics, and metabolomics.

Experimental studies are performed on the composition and structure of discoid high-density lipoprotein nanoparticles as factors controlling and correcting the metabolic activity of key enzymes of lipoproteins, which are the new markers of atherogenesis.

Most Significant Results of the Studies Performed in Recent Years

- A new medical technology called Rapid method of quantitative determination of nitric oxide metabolites in biological fluids as marker of vascular endothelium dysfunction has been developed for quantitative determination of serum metabolites of nitric oxide (NOx) as a marker of functional activity of the vascular endothelium.
- A method for detecting latent insulin resistance was worked out for the early diagnosis of type II diabetes and a due Russian patent has been obtained.
- A new medical technology called Genotyping of human APOE alleles has been designed to assess the effectiveness of therapy in a pharmacogenetic viewpoint.
- A determination technic for subfractional spectrum of low and high-density lipoproteins was worked out and has currently been used.
Head of the Department: Professor David Vasilyevich Nebieridze
Doctor of Medical Sciences

Main Scientific Research Activities of the Department

The main scientific activity of the department is to search for effective methods of drug therapies to treat metabolic disorders occurring at arterial hypertension, lipid disorders, and disorders of carbohydrate metabolism.

Not only are thus the basic effects of the drugs studied but also the pleiotropic ones, including their role in the overall reduction in the risk of cardiovascular diseases.

The influence of cardiac drugs on the disease course of osteoporosis during postmenopausal period in women is currently studied in association with the Department of Osteoporosis Prevention.

The department has also begun studying the effectiveness of educational projects on optimization of the treatment of arterial hypertension and lipid metabolism in various regions of Russia.

Most Significant Results of the Studies Performed in Recent Years

- The pleiotropic effects of different classes of antihypertensive drugs were studied. Their metabolic and vascular effects have been assessed (influence on the endothelial function and microcirculation).
- Vascular effects (influence on the endothelial function, blood pressure level, and microcirculation) of lipid-lowering drugs have been studied.
- The effectiveness of implementing the electronic version of SCORE in clinical practice for improving adherence to drug therapy (while using antihypertensive and hypolipidemic therapy) and recommendations for a healthy lifestyle was demonstrated for the first time. The studies have shown that the electronic version of SCORE can be used not only to assess the overall risk but also as a motivational technology to improve the adherence to drug and non-drug methods of risk management.
- Russian data obtained at the NRCPM was reflected in the SCORE project thanks to the active cooperation with the European Society of Cardiology; and it led to the appearance of Russian electronic version of SCORE for practitioners.
Main Scientific Research Activities of the Department

The current field of activity is studying the possibilities of simultaneous treatment of cardiometabolic risk factors and prevention of osteoporosis while using cardiac drugs.

The specialists of the department are studying the possible pleotropic effects of cardiac drugs on bone tissue, the correlation between obesity and bone mineral density in women with different risk levels of cardiovascular diseases.

The influence of long anti-osteoporotic therapy on the bone mineral density and development of fractures is assessed in women with postmenopausal osteoporosis.

The influence of cytokines, particularly of adipokines, on cardiovascular risk as well as bone tissue is studied together with the Department of Biochemical Risk Markers of Chronic Non-Communicable Diseases.

Most Significant Results of the Studies Performed in Recent Years

- A method for detecting vertebral compression fractures on bone densitometry at quick lateral spine projection imaging (Vertebral Fracture Assessment—VFA) has been implemented to optimize the diagnostic methods for osteoporosis. This method allows measuring bone mineral density and revealing fractures with minimal radiation exposure simply using single instrument at a session.
- A treatment strategy has been worked out for patients with osteopenia or normal bone mass with vertebral fractures diagnosed using the VFA. This allows prescribing specific anti-osteoporotic drugs to prevent fractures whenever necessary.
- A device has been designed that prevents spine flexion during examination of patient lying on side. It ensures correct positioning and obtaining objective data of patients with different physique at bone densitometry.
- It was established using the dual energy densitometry method that the increased fat mass corresponding to abdominal obesity and decreased lean body mass, mostly in torso, is associated with an increased cardiovascular risk during postmenopausal period in women. In addition, the amount of fat mass and its distribution in the body may have no effect on the bone mineral density, whereas reduction in the lean body mass can be regarded as an independent marker of osteoporosis.
Laboratory of Radio-endovascular Diagnostics and Treatment

Head of the Laboratory: Professor Vladimir Pavlovich Mazayev
Doctor of Medical Sciences

Main Scientific Research Activities

The laboratory develops methods of interventional treatment of ischemic heart disease with complex ways of multivessel stenting, including the elimination of complete obturation and restoration of coronary artery bifurcation.

Diagnostic tests based on the use of intracoronary ultrasound examination and that of determining coronary functional reserve at systemic administration of pharmacological agent are used in practice.

Monitoring of the course and outcomes of ischemic heart disease based on anatomo-functional angiographic and clinical classifications with the formation of prognostic indices and determination of the effectiveness of secondary general and drug prevention is worked out and duly implemented.

Interventional treatment methods are implemented in peripheral atherosclerosis, including carotid artery stenting and intra-aortic stent placement at aneurysms.

Fundamentally new approaches to stimulate and reveal the regression in coronary atherosclerosis based on combined drug lipid-lowering therapy is verified in practice.

Most Significant Results of the Studies Performed in Recent Years

- The effectiveness of percutaneous coronary intervention with placement of drug-eluting stents of various designs has more significantly been achieved compared to the optimal drug therapy in the treatment of multivessel coronary disease, including lesion of the main trunk in patients with chronic coronary heart disease
- The necessity to have a major surgery was reduced at the use of aggressive interventional approach in the treatment of acute coronary syndrome with a postponed repeated intervention at multivessel coronary disease.
Substantial underestimation of morphological status of atherosclerotic coronary plaque was revealed on the coronary angiography compared to the coronary ultrasound. Additional minor angiographic signs of coronary artery lesions, necessary for scientific monitoring of the atherosclerotic process dynamics were worked out.

Obvious expediency of using the determination method for coronary functional reserve was proved at the assessment of borderline narrowing coronary arteries at under the action of intravenous medicinal product.

A set of clinical and instrumental criteria as well as risk factors determining the disease prognosis was formed with the help of monitoring the course and outcomes of the coronary heart disease in individuals with angiography-confirmed coronary heart disease with a natural disease course and postinterventional procedures.

From monitoring the course and outcomes of coronary heart disease in patients with angiography-confirmed coronary artery disease in the natural course of the disease and after interventional procedures formulated and risk factors determining.

The possibility and relative safety of stenting methods in local lesions of the internal carotid artery and endovascular treatment of abdominal aortic aneurysms were demonstrated in an inpatient department with no extensive surgical support.
Laboratory of Radio-surgical Treatment of Cardiac Arrhythmias

Head of the Laboratory: Karapet Vladimirovich Davtyan
Doctor of Medical Sciences

Main Scientific Research Activities

The Laboratory was founded in 2011. Its main scientific activities are treatment and prevention of cardiac rhythm and conduction disorders.

The laboratory studies the influence of various treatment methods for atrial fibrillation (both catheter and conservative) on the progression of disease.

The laboratory staff participates in the international multicenter randomized study ATTEST (Impact of early radiofrequency ablation on AF).

The management strategy for patients after atrial fibrillation catheter ablation is improved based on the results:

- Optimization of preventive antiarrhythmic therapy to reduce the risk of relapse of atrial fibrillation
- Optimization of rehabilitation methods of patient management to reduce the risk of relapse of atrial fibrillation
- Optimization of preventive anticoagulant therapy to reduce the risk of thromboembolic complications in the postoperative period

The properties of different kinds of devices occluding the left auricle are studied in the prevention of thromboembolic complications. The strategy of patient management after implantation of devices occluding the left auricle is improved through optimization of antithrombotic prophylaxis in the postoperative period to reduce the risk of thromboembolic complications.

Infectious processes are studied as an etiological factor in the genesis of ventricular cardiac arrhythmias.
The Department of Post-Graduate Education of the National Research Center for Preventive Medicine ensures the continuous post-graduate medical education. This is a modern scientific and clinical site with the high-skilled research and training staff, which is capable of training specialists in the areas of preventive medicine, cardiology, internal diseases, and public health.

The Department provides general and thematic advanced training cycles under the continuing professional education programs as well as the post-graduate professional education programs (residency and fellowship). GNICPM is one of the major organizations which provide the basis for training preventive medicine specialists.

It is an important line of work of the Department of Post-Graduate Education to establish in cooperation with other scientific departments the Center of Programs for the Medical Doctors’ Professional Development in the areas of prevention of non-communicable diseases and formation of a healthy lifestyle.

In 2012, we developed the professional development programs “Formation of a Healthy Lifestyle” (for managers and doctors of the Health Centers) and “Prevention of the Main Chronic Non-Communicable Diseases” (for managers and doctors of the Health Centers, preventive medical departments and offices).

In 2012 alone, 328 medical doctors from various regions of Russia received training in GNICPM under these programs. The programs have been recommended by the Coordination Council on Medical and Pharmaceutical Education of the RF Ministry of Health and Social Development (Minutes No. 7 dated 23.03.2012) to educational institutions of higher and continuing professional education for the training of medical doctors in the disciplines “Healthy Lifestyle” and “Prevention of Chronic Non-Communicable Diseases”. 
GNICPM is the base for training residents in the discipline “Cardiology” and “Internal Diseases” and fellows in the discipline “Cardiology”. There are plans for starting in 2013 the new lines of training: fellowship in the discipline “Public Health and Healthcare” and residency in the discipline “Endovascular Diagnosis and Treatment”.

Over the 25 years that GNICPM has been existing, more than 200 people received training as residents. The fellowship training course was provided to some 90 people who, in the majority of cases, continue research activities in cardiology and preventive medicine.

In addition, the GNICPM staff develops and offers thematic training schools for practicing doctors in most topical problems of modern medical science (“Basic Aspects of the Heart Rhythm and Conductivity Disorders”, “Complex Issues of the Thrombosis Prevention, Diagnosis and Treatment in the Clinic of Internal Diseases”, etc.).

The GNICPM lecturing staff includes leading specialists in different areas of medicine – primarily, epidemiology and prevention of non-communicable diseases, cardiology, endovascular diagnosis and treatment, public health, etc. This enables us to employ multidisciplinary approach in training and cover the matters where various specialties overlap.
The Federal Health Center (for Coordination and Methodology) was established within GNICPM in order to ensure the higher efficiency of health centers in medical facilities of the Russian Federation, optimization of the disease-prevention service rendering to the population by way of the development and introduction of the scientifically proven methods of the formation of a healthy lifestyle and the prevention of non-communicable diseases.

The Federal Health Center (for Coordination and Methodology) comprises the two subdivisions: the research laboratory “Formation of a Healthy Lifestyle” and the clinical department “Health Center”.

The mission of the research laboratory “Formation of a Healthy Lifestyle” includes the analysis of information, coming from the health centers of Russia, and the submission of proposals for the improvement of the organization and efficiency of such centers to the RF Ministry of Healthcare, as well as the development of new, scientifically proven risk identification methods and up-to-date disease-prevention techniques.

Another element of the Federal Health Center (for Coordination and Methodology), the clinical department “Health Center”, is a model health center established in accordance with RF Ministry of Health and Social Development Order No. 597n dated 19.08.2009.

Every citizen of the Russian Federation is welcome in the health center where he or she can attend a comprehensive examination free of charge, including the evaluation of the basic health indicators and the key risk factors in respect of chronic non-communicable diseases.

The clinical department “Health Center” has a working complex of applied programs of a model information system of support of preventive measures. The use of the complex has made it possible to achieve full automation of the center’s operation via a local area network that combines the registration office, doctors’ offices, and the testing and instrument examination units. This has helped reduce the time of information processing by the medical staff and much decreased the workflows, including the manual maintenance of patient records. The automatic processing of statistical data enables us to evaluate the patient’s state of health more accurately and to correctly plan for preventive measures.

The Federal Health Center does a lot to raise the public and decision-maker awareness of the healthy lifestyle and the centers’ activity during welcome days and on-site events. In 2011 and 2012, the center specialists took an active part in the All-Russia Forum “Health of the Nation Is the Basis of Russia’s Prosperity”, the 50 PLUS Forum and Exhibition, the First All-Russia Doctors’ Congress, the project “Follow Me Running” organized by the Federal Agency on Youth Affairs, et al. The center holds on a regular basis the smoking cessation days to which the representatives of the media and general public are invited.
Academic Council

Chairman – Sergey A. Boytsov, Doctor of Medicine, Professor
Deputies Chairman – Rafael G. Oganov, Doctor of Medicine, Professor, Academician of the Russian Academy of Medical Sciences; Olga N. Tkacheva, Professor, Doctor of Medicine
Scientific Secretary – Viktoria A. Metelskaya, Doctor of Biological Sciences, Professor

The Academic Council has been established as the Director’s advisory body the mission of which is to discuss the matters related to the research and the organization thereof as well to the therapy and disease prevention. The Academic Council includes the heads of research departments, Head Physician, and the GNICPM researchers.

Functions of the Academic Council

■ Determine the priority areas of the research and the organization thereof in the Center.
■ Prepare short- and long-term scientific forecasts, summarize and evaluate the research conducted within the scope of the Center’s areas of expertise.
■ Discuss the topical problems of the preventive medicine, health promotion and formation of a healthy lifestyle, and the related problems of the medical science.
■ Discuss and approve the plans for, and reports of, the research work conducted in the Center.
■ Hear reports of the heads of the Center departments about the results of activities in the primary areas.
■ Examine and approve the products of the Center research.
■ Hear and discuss the presentations made by the researches, fellows and external PhD students of the Center.
■ Review and include in the plan candidate (PhD) and (full) doctoral dissertations, perform approbation of doctoral dissertations.
■ Discuss the matters related to the training of the research staff, results of the contests and performance appraisal of the researchers.
■ Review and approve the regulations of the clinical residency and fellowship, their training programs and curricula.
■ Nominate candidates to the Higher Attestation Commission of the RF Ministry of Education for the award of the academic titles of Professor and Associate Professor.
■ Nominate candidates for honorary titles and awards of the Russian Federation and research works and inventions for the State Prize, personalized and other awards.
■ Nominate candidates for corresponding members and full members (academicians) of the Russian Academy of Medical Sciences, Russian Academy of Sciences, and other academies.
The currently existing Dissertation Council D 208.016.01 was approved by Order No. 1104-v dated 29 December 2000 of the Higher Attestation Commission of the RF Ministry of Education due to the reorganization of the councils.

The term of the Council was extended by Order No. 2059-2035 dated 05.10.2009 of the Federal Service for Supervision in Education and Science due to the adoption of the new classification of specialties, as approved by Order No. 59 of 25.02.2009 of the RF Ministry of Education and Science. The Council’s term has been established for the period that such new classification will be effective (indefinitely).

The Council accepts for defense (full) doctoral and candidate (PhD) dissertations in Specialty 14.01.05 “Cardiology” (medical sciences).

The Dissertation Council consists of 21 members, including 19 Doctors of Medicine (one RAMS Academician and 18 Professors), a Doctor of Biological Sciences and a Candidate of Medicine.

Over the past period, 33 doctoral dissertations (including 10 doctoral dissertations by doctoral students from external organizations) and 130 candidate dissertations (including 18 candidate dissertations by PhD students from external organizations) were defended in the Council, which also issued one opinion on a doctoral dissertation.

The Dissertation Council’s schedule provides for meetings on the third Wednesday of every month. The dissertation defense schedule and the time of the meetings are subject to change.
During the 25-year history of GNICPM, the Center staff members have prepared and published:

- over 40 guidelines for medical doctors (cardiologists, therapists, endocrinologists, neurologists) and decision-makers in the area of public health;
- over 60 textbooks, study guides and doctors’ manuals;
- over 50 monographs and monograph chapters of which at least 10 ones were published abroad.

The Center publishes specialized medical journals included in the Higher Attestation Commission list: *Preventive Medicine, Cardiovascular Therapy and Prevention*, and *Rational Pharmacotherapy in Cardiology*.

**Preventive Medicine**

Editor-in-Chief – Sergey A. Boytsov  
GNICPM Director, Doctor of Medicine, Professor

The first issue of the journal was published in 1998 under the name *Disease Prevention and Health Promotion*. In the history of the Russian healthcare, this is the first edition fully dedicated to the problems of preventive medicine. The journal is intended not solely for medical workers but also for administrators, economists, educators, and the media staff.

**Cardiovascular Therapy and Prevention**

Editor-in-Chief – Rafael G. Oganov  
Doctor of Medicine, Professor, Academician of the Russian Academy of Medical Sciences

The journal has been published since 2002. It is intended for both researches and medical practitioners of various specialties. The edition broadly covers the topical problems of cardiology, recent scientific achievements in the treatment and prevention of cardiovascular diseases, and the experience of Russian and foreign cardiologists.
Rational Pharmacotherapy in Cardiology

Editor-in-Chief – Rafael G. Oganov
Doctor of Medicine, Professor, Academician of the Russian Academy of Medical Sciences

The journal has been published since 2005 and became over that time a reputed edition of the Russian Society of Cardiology.

The edition broadly covers the topical problems of therapy of cardiovascular diseases, results of the medicinal product studies and publishes recommendations for therapy, including those made by the Russian Society of Cardiology, lectures and surveys on clinical problems.
The National Research Center for Preventive Medicine has a solid clinical base fitted with the most up-to-date equipment. The Center’s Inpatient Department annually gives treatment to around 4,500 patients and performs over 1,800 operations. The Outpatient Department facilities enable us to deliver medical care to more than 250,000 people annually. The Outpatient Department administers specialized medical aid, including high-tech aid, to patients with chronic non-communicable diseases, primarily with the cardiovascular system diseases.

The Center offers consultations of the best specialists in the area of preventive medicine – Professors and Doctors/Candidates of Medicine. Many of them sometime conducted the pioneer research of such sicknesses as atherosclerosis, ischemic heart disease, and arterial hypertension. They are members of renowned international scientific societies, work groups and expert boards. They are leaders in their areas of research and direct the development of national programs for the prevention and treatment of cardiovascular diseases and metabolic disorders.

The Center has the most up-to-date diagnostic instruments making it possible to perform not just the widest range of traditional laboratory analyses and tests – from the blood test to MRI – but also some truly unique researches many of which were designed and implemented by the GNICPM analysts.

The Center departments’ staff includes more than 100 Doctors and Candidates of Medicine.
The Clinical and Diagnostic Laboratory (CDL) provides the widest range of services. Modern equipment, the latest technologies, high-skilled personnel, substantial work experience and federal quality control make it possible to conduct laboratory research at the highest level and ensure that the reliable results are promptly achieved.

The laboratory employs 25 people who perform over 3,000 tests daily and more than 750,000 ones annually.

Biochemical blood and urine tests are performed by using the newest direct access biochemical analyzers.

The laboratory equipment permits to determine the maximum possible list of the lipid metabolism indicators, including: lipoprotein-a, apolipoproteins A-1 and B. The most atherogenic small low-density lipoproteins are identified by using a lipoprint system.

The laboratory is fitted with a reliable modern automatic immunoenzyme analyzer that makes it possible to perform up to 200 tests per hour and identify a broad range of hormones, oncomarkers, autoantibodies, antibodies to infectious agents and other blood markers.

The general clinical complete blood count and other tests are performed by using a hematology analyzer with a capacity of up to 80 tests per hour, which determines 22 blood parameters and ensures the full differentiation of leucocytes into five subpopulations, including eosinophils and basophils. Coagulometer analyzer ensures the full range of the hemostasis studies.

An automatic urinary sediment analyzer makes it possible to perform the reliable and accurate urine tests by using the flow cytometry method.
The CDL toolbox also includes an up-to-date PCR laboratory. The real-time polymerase chain reaction method is used for the laboratory diagnosis of a wide range of infectious agents (including urogenital infections) as well as for identifying the polymorphism of certain genes and detecting the genetic predisposition to various pathologic conditions (atherosclerosis, arterial hypertension, thrombophilia, diabetes mellitus, etc.).

The laboratory performs complex tests: for hospital admission, laboratory screening (primary and extended), and PCR tests of urogenital infections.

In addition, the GNICPM researchers have developed and introduced into the CDL practice the unique diagnostic suites for the ones who take care of their health: “Cardiovascular Diseases”, “Early Diagnosis of Diabetes Mellitus”, “Woman’s Health after 40”, etc.
The Department uses the most up-to-date equipment of the world’s major manufacturers of medical instruments and employs the latest medical technologies. The Department specialists perform around 25,000 tests annually.

MRI

The newest software and high-skilled personnel with a wide experience of research and practice enable us to perform the entire range of diagnostic tests: MRI of the brain, hypophysis, eye sockets, accessory sinus of the nose; MRI of the cervical, thoracic and lumbosacral spine, MRI of joints (knee, shoulder, hip); MRI of the abdominal cavity, cholangiography; MRI of pelvic organs; vascular tests – MR angiography of cerebral vessels, neck vessels, aorta, peripheral arteries; contrast-medium examinations, including dynamic contrast.

Computer Tomography

A multidisciplinary computerized tomography scanner makes it possible to perform all types of CT angiography studies, with the possibility to visualize cerebral vessels, neck vessels, thoracic section of the aorta and pulmonary vessels, abdominal aorta and its branches, including the celiac trunk, mesenteric and renal vessels, and coronary arteries. Also: coronary CT angiography, assessment of the degree of the calcification of coronary vessels; examination of the left atrium and pulmonary veins prior to performing the radio frequency ablation procedure.

Radiology

The Department performs all types of the radiology tests, including mammography, densitometry (diagnosis of osteoporosis), and orthopantomography (a modern radiological method that produces the panoramic radiograph of the upper and lower jaws).

We in the department give much attention to the convenience and safety of our patients. Modern technologies make it possible to decrease the radiation exposure and its effects on the human organism. The large space of the diagnosis room ensures additional comfort during the examination. The patients suffering from claustrophobia are offered testing with the use of open MRI units.
The Department’s modern equipment enables us to conduct the full examination of the cardiovascular system within the shortest time possible. The Department employs 14 high-skilled medical professionals, including seven Candidates of Medicine.

Our specialists perform more than 3,000 tests monthly. Every day the Department serves over 150 patients.

24-hour Holter ECG and Arterial Pressure Monitoring

The Department performs the 24-hour Holter ECG and arterial pressure monitoring. Where these types of medical examination are indicated, the full set of ECG and AP instruments may be employed: ECG monitoring via 2-3 or 12 channels for studying additional ECG indicators during the 24-hour monitoring or combined ones to simultaneously record ECG and AP. The monitoring may be either standard, i.e., during 24 hours, or throughout 48-72 hours.

Ultrasonic Tests

The ultrasonic heart testing (echocardiography) and vessel tests are performed by using ultrasonic systems from the world’s leading manufacturers, including the expert class, highest-resolution instruments. This enables us to make the most accurate assessment of the organ’s anatomy and function, the blood flow as well as to view atherosclerotic plaques in vessels open for the ultrasonic test.

Loading Tests

The Department’s facilities make it possible to perform loading tests: bicycle ergometry, treadmill test, and stress-echocardiography.

The Department also performs trans-esophageal echocardiography. This is a test that makes it possible to detect a thrombus in the heart cavities, which cannot be viewed during an ordinary ultrasonic test, and also to assess more accurately the state and function of cardiac valves in patients not earlier operated and as well as in the ones who has already had them replaced.

In complex heart rhythm and conduction disorders, we perform noninvasive trans-esophageal electrophysiological examination that helps establish a diagnosis and determine whether the subsequent operative treatment of arrhythmia could be indicated.
Department of Ultrasonic Diagnosis and Endoscopy

Head of Department – Mikhail S. Avakov
Superior Category Doctor

The Department employs the latest medical technologies and most up-to-date instruments. Its high-skilled specialists perform around 3,500 endoscopic and 30,000 ultrasonic tests annually.

Endoscopy

Endoscopy offices are fitted with modern video endoscopes enabling us to perform diagnostic tests of the esophagus, stomach, duodenum, and large intestine with the high quality, promptly and painlessly.

For making a more accurate diagnosis and prescribing the most efficacious treatment additional test should be performed, for example, to detect the microorganism *Helicobacter pylori* in the stomach.

In addition, in performing gastroscopy together with endoscopic pH-metry the stomach acidity level can be determined. This is a most important indicator for the selection of appropriate treatment for various types of inflammatory processes in the alimentary system.

As and when necessary, a biopsy of the gastrointestinal tract mucosa may be taken.

Ultrasonic Tests

Ultrasonic tests are performed by using the expert-level diagnostic systems from the world’s leading manufacturers, which provide the highest resolution. They make it possible to perform the tests of organs of the abdominal cavity, urinary system and pelvis in men and women, thyroid and mammary glands, soft tissues, and lymph nodes.
Chief physician – Candidate of Medical Science, Doctor of Higher Category
Elena Petrovna Mazygula

Hospital provides specialized and high-tech medical care to patients with chronic non-contagious diseases, particularly with heart diseases.

Hospital’s accommodation capacity comprises 130 beds. It has several wards: admission room, two cardiovascular wards, therapeutic ward, resuscitation and intensive care ward with six additional beds, X-ray endovascular diagnostics and treatment ward, interventional arrhythmology ward as well as consultative and diagnostic unit which provides additional out-patient treatment.

The clinic employs highly-qualified doctors and researches, Candidates and Doctors of Medical Science. Approximately 4500 patients undergo treatment in the hospital per annum. About 150 high-tech operations are performed in a month.

Diagnostics

Algorithms of examination and treatment of patients were developed in cooperation with researchers of the Centre and are supported by the data of the evidence-based medicine as well as the national and international guidelines.

Cardiovascular diseases are diagnosed using the advanced methods, namely – functional exercise ECG testing, expert class echocardiography, transesophageal atrial stimulation, endocardial electrophysiological examination, testing and cardiomonitor/ICD/CRT programming, stress-echocardiogram with endocardial stimulation, coronary angiography, ventriculography, bypass angiography, aortography.

The Centre also makes use of practically all modern methods of diagnostics and treatment of diseases of gastro-intestinal tract, respiratory and endocrine systems and also other chronic non-contagious diseases. Investigations are performed with the use of modern diagnostic equipment of the Centre by highly-qualified specialists. Based on the results of investigations, an individual prevention and therapeutic program is developed for each patient. Such program is aimed at extension of life expectancy (prolongation of life) and also at improvement of life quality. A special emphasis is made on correction of behavioral risk factors: intensification of physical activity, adoption of well-balanced nutrition and giving up bad habits.
Methods of treatment of cardiac arrhythmia and conduction

- Implantation of pacemakers of all types and models, including single-chamber, dual-chamber, frequency-adaptive and anti-tachycardia pacemakers with endocardial access
- Biventricular leads implantation (CRTP, CRTD) for the purpose of treatment of chronic cardiac insufficiency
- Cardioverter defibrillator implantation for the purpose of treatment of ventricular tachycardia, ventricular flutter and fibrillation
- Implantation of monitoring devices for long-term monitoring of cardiac rhythm in case of supraventricular tachyarrhythmia and ventricular tachycardia
- Catheter radiofrequency ablation of pulmonary veins entries in the course of atrial fibrillation
- Catheter radiofrequency ablation of ectopic atrial tachycardia with the use of electroanatomic mapping system
- Catheter radiofrequency ablation of slow conduction tracts of AV connection in case of paroxysmal AV nodal reentrant tachycardia
- Catheter radiofrequency ablation of additional conduction bundles in case of WPW syndrome
- Catheter radiofrequency ablation of ventricular flutter
- Implantation of occlusion devices into left atrial appendage for the purpose of prevention of cardiovascular accident in patients with continuous arrhythmia

Methods of treatment of atherosclerotic vascular disease

- Balloon angioplasty and stenting of coronary, carotid and peripheral arteries
- Endovascular prosthesis of infrarenal aorta section
- Vena Cava Filter implantation

In order to achieve compensation status in patients with severe chronic cardiac insufficiency, inotropic support methods and extracorporeal dehydration methods (ultra- and hemofiltration) are applied.

Doctor’s rounds and consultations are carried out by professors, top and senior research associates, heads of scientific units of the Centre on a regular basis.
Analysis of complicated medical cases is conducted.

Operations are performed by highly-qualified specialists who have completed an internship at the leading national and foreign clinics.

Considerable attention is paid to long-term medical screening of patients after surgical treatment.

The following specialized areas are rapidly developing:

- arrhythmia centre
- cardiac insufficiency clinic
- somnology clinic
- lipid clinic
- men’s health clinic
- osteoporosis clinic

In daily work they apply a comprehensive approach to diagnostics, treatment, follow-up of patient and treatment adjustment. In patients management the continuity of care between hospital and outpatient treatment is observed.

The specialists of the National Research Centre for Preventive Medicine have developed diverse rehabilitation programs. Patients can make use of health promoting schools aimed at: smoking cessation, balanced nutrition, healthy lifestyle, physical activity, diabetes and cardiac insufficiency.

Old Centre building the is an architectural monument. The atmosphere of downtown Moscow is found side by side with quiet yards to which the windows of the hospital units open. Their breathtaking views will become a pleasant peculiarity of inpatient stay in hospital.
Heads of the hospital wards

Admission room
Head - cardiologist, Candidate of Medical Science, Doctor of Higher Category
Aida Alievna Zeynapur

1st cardiovascular ward
Head - cardiologist, Doctor of Higher Category
Svetlana Aleksandrovna Beregovskaya

2nd cardiovascular ward
Head - cardiologist
Nikolai Vasilyevich Dupik

3rd cardiovascular ward with resuscitation and intensive care unit
Head - cardiologist, Candidate of Medical Science
Natalya Sergeevna Frolova

Therapeutic ward
Head - cardiologist, Doctor of Higher Category
Irina Vladimirovna Kuznetsova

X-ray endovascular diagnostics and treatment ward (interventional cardiology)
Head - Candidate of Medical Science, Doctor of Higher Category
Artem Sergeevich Shanoyan
Consultative and Diagnostic Centre (DC) is a structural subdivision of the National Research Centre for Preventive Medicine which provides primary pre-doctor, medical and specialized care.

The institution was established on November 22, 1919 as an Integrated outpatient department of the Supreme Council of the National Economy. Over the years of its existence, departmental subordination of the DC has undergone numerous changes.

Hence, starting from 1958 it was under the supervision of the Ministry of Health, while from July 1, 2012 it was merged in the Centre.

Annually DC is visited by approximately 160,000 people. Nearly 1000 people undergo treatment in the short-stay ward. Specialists carry out up to 200 operations of different types per month.

Basic work directions

- Development of hospital substitute technologies: establishment of day hospital with 6-10 beds.
- Outpatient surgery in the following areas: surgery, gynecology, urology, coloproctology, vascular surgery, otorhinolaryngology, orthopedic surgery (keyhole surgery).
- Preventive services for the early diagnosis of the diseases and major risk factors and their development, preventive consulting of healthy persons and patients.
- Implementation of remedial treatment and rehabilitation methods.

Diagnostics

- X-ray diagnostic techniques with the use of advanced digital equipment, including mammography, osteodensimetry.
- All types of ultrasound investigations.
- All types of functional diagnostic techniques, including Holter ECG and arterial pressure monitoring, treadmill and bicycle ergometry.
- Endoscopic examinations: fibrogastroduodenoscopy, colonoscopy.
Treatment

- Diagnostic centre is a multi-specialized institution which provides all types of outpatient care in the following areas: general practice, cardiology, gastroenterology, pulmonology, hematology, neurology, surgery, gynecology, ophthalmology, otorhinolaryngology, urology, proctology, phlebology, andrology, endocrinology, psychotherapeutics, addictology, dentistry, prosthodontics, dermatology, occupational pathology, dietology, physiotherapy.
- The DC gives special attention to surgical activity, a large volume of outpatient surgery is carried out.
- The short-stay ward based on gynecology department and department of surgery is widely used. It is intended for patients after surgical treatment and also for routine infusions for patients with chronic pathology.
- A distinguishing feature of the DC – availability of round-the-clock home care service.
- The DC has comprehensive facilities for rehabilitation and remedial treatment, which is represented with a wide range of physiotherapeutic procedures (electro-, photo-, laser-, magnetic treatment, lymphatic drainage), massage, hirudotherapy. Availability of the halochamber (salt-chamber) is a competitive edge.
- Patients may perform therapeutic exercises and swimming. Aesthetic dermatology office is also at patients’ disposal (injection and machine cosmetology, mesotherapy, ozone therapy, etc.).
- In 2013 there was established a department of preventive treatment whose task is to detect and combat risk factors associated with occurrence of non-contagious diseases, healthy lifestyle promotion.
Consultation division

Head of the division - Candidate of Medical Science, Doctor of Higher Category
Zara Rubenovna Tigranyan

A multi-specialized consultation division employs highly-qualified doctors of over twenty areas of expertise. Patients are examined by professors, Doctors and Candidates of Medical Science, Doctors of Higher Category. Almost 100,000 patients annually visit the division for diagnostics and treatment. Approximately 20,000 outpatient operations and manipulations are carried out. The method of high-frequency radio-wave surgery is abundantly used.

The division provides multi-specialized consultative, diagnostic and medical assistance, including this in the hospital.

The patients are examined by the specialists in the following areas of expertise:

- physicians
- gastroenterologists
- hematologists
- gynecologists
- dermatovenerologists
- cardiologists
- coloproctologists
- breast physicians
- neurologists
- otorhynolaryngologists
- oculists
- psychotherapists
- surgeons
- urologists
- endocrinologists
- allergologist-immunologist
- nephrologist
- oncologist
- urologist-andrologist
- reflexologist
- massage therapy specialist
Dental ward

Head – dental therapist of the first category
Natalya Tagirovna Khvatova

The department provides a wide range of specialized dental services. Its capacity makes it possible to serve about 8000 patients per year. At least 20 dental implantations are performed in a month.

Diagnostics

The staff of the department makes use of both traditional and state-of-the-art diagnostic techniques:

- computer visiography – a fast, accurate and demonstrative method of teeth examination;
- orthopantomography – panoramic exposure of mouth cavity. This method makes it possible to obtain an overall radiogram of teeth and a jaw within a few minutes;
- computerized tomography allows specialists to obtain a three-dimensional image of the whole dentition and make a diagnosis with maximum precision;
- angiography of mouth cavity vessels.

Treatment

The department provides a wide range of services on oral treatment and prophylaxis:

- dental therapy: pain-free caries treatment, artistic dental restoration, correction of dental shape and color, teeth whitening with the help of latest-generation systems;
- prosthodontics: metal-fused porcelain and metal-free constructions, the whole range of prosthetics services;
- orthodontontology: correction of the occlusion, installation of dental brackets and night guards, inner brackets;
- surgery: pain-free extraction of teeth of any degree of complexity and formations of mucous tunic of the mouth, endoscopic methods of treatment;
- periodontology: treatment of bleeding gums and bad breath, preservation of loose teeth, machine treatment of periodontitis;
- dental implantation: works of any degree of complexity, use of the best implantation systems.

The specialists of the department are engaged in research. A study related to the influence of paradontium inflammation on cardiovascular system is carried out.
A Public relations group of the National Research Centre for Preventive Medicine was established in February, 2012. The main purpose – coverage of the academic and research activity of the Centre at the Russian and international levels, and also promotion of basic measures aimed at prevention of non-contagious diseases and healthy lifestyle among population and medical professionals.

The group is engaged in activities in the following areas:

- Interaction with mass media: television, radio, press, the Internet.
- Writing and publication of articles, news, announcements.
- Development and running of events and campaigns aimed at prevention of non-contagious diseases and formation of healthy lifestyle.
- Participation in the events devoted to World Health Days aimed at education of population and attracting public attention to different issues of health preservation and active ageing.
- Arrangement of conferences, exhibitions, forums in the area of healthcare and participation in them.
- Participation in development of regional programs for comprehensive preventive measures associated with non-contagious diseases. Development of information and communication campaigns and event schedules in Russian provinces.
- Cooperation with foreign organizations of public health.
- The main purpose – exchange of best practices in the sphere of carrying out promotion programs intended for prevention of non-contagious diseases and popularization of healthy lifestyle among people.
- Continuous NRCPM website update. Provision of the resource visitors with the most up-to-date and comprehensive information on activity of scientific, medical and diagnostic units of the Centre.
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