IMR INSTITUTE OF MODERN RUSSIA

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RUSSIA'S HEALTHCARE SYSTEM: Current State of Affairs and the Need for Reforms

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Report by the Institute of Modern Russia (Open Russia)

Cover: An emergency room in a St.Petersburg narcological hospital, Russia. Photo: Valentina Svistunova / TASS

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INTRODUCTION

Nowhere in the world can a healthcare system be reformed as a separate entity. Therefore, the problems that will be discussed in this report are impossible to resolve without substantial changes in Russia's economy, education, IT, consumer goods manufacturing, government contracting in the pharmaceutical industry, et al. Reforms in the Russian healthcare system should be accompanied by corresponding reforms in the Academy of Sciences, the Ministry of Healthcare, and the health departments in the constituent entities of the Russian Federation.

A rich and prosperous country can afford extensive reforms in the healthcare system, and, as recently demonstrated by the United States and France, the changes will take three to five years.

The last few decades have seen a number of attempts to reform the Russian healthcare system, all largely unsuccessful. Reformers marked healthcare as a "priority" and proposed a one-time massive injection of money and resources. But this approach proved to be mistaken.

I. THE CONTOUR OF THINGS

Russian passport and information booklet on mandatory health insurance. Photo: Aleksey Pavlishak / TASS

The Myth of Free Healthcare

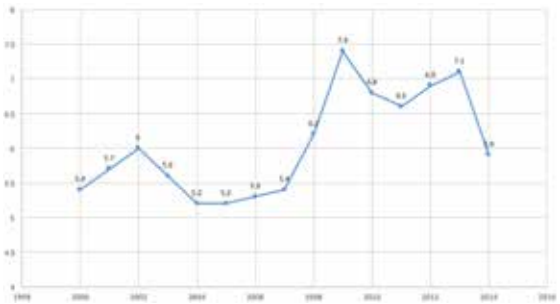
The problem at the heart of Russian healthcare is its claim to be free for all[1]. In reality, it is not.

The work of the state healthcare system in Russia is paid for out of the federal budget, the budgets of the constituent entities of the federation, and the Federal Mandatory Medical Insurance Fund (FOMS), a non-budgetary state fund that is formed from the insurance payments (premiums) for healthcare coverage[2] of the working and non-working population of Russia[3].

The funding structure of the Russian healthcare system is quite complicated; the issue is further clouded by the fact that official sources do not offer a consolidated source of statistical data, resulting in contradictions in the reports published by the Ministry of Finance and the Federal Treasury.

For instance, according to the Ministry of Finance, in recent years, overall expenditures for healthcare in the structure of the consolidated budget[4] of the Russian Federation have been slightly growing (Chart 1).

CHART 1. Health expenditure and financing in Russia (%, GDP), 2000-2014



Source: Ministry of Finance (estimate is given for 2016 and 2017).

However, despite this modestly positive dynamic, if adjusted for the weaker ruble (in 2014, the

[1] Article 41, paragraph 1 of the Constitution of the Russian Federation stipulates: "Everyone shall have the right to health protection and medical aid. Medical aid in state and municipal health establishments shall be rendered to individuals gratis, at the expense of the corresponding budget, insurance contributions, and other proceeds."

[2] As of today, the standard rate of premiums paid by the insured—all those who make payments and other allowances to organizations, individual entrepreneurs, physical bodies,—is 5.1 percent (a reduced rate of 4 percent is applied if the overall annual income of an employee exceeds 718,000 rubles). Currently, the government plans to raise the standard rate to 5.9 percent starting in 2019.

[3] According to FOMS, as of April 1, 2015, 146.5 million people were insured through the Russian mandatory medical insurance system, including 61.5 million employed and 86 million non-employed citizens.

[4] The consolidated budget includes the country's federal budget, consolidated budgets of the constituent entities of the Russian Federation, budgets of the state non-budgetary funds, and budgets of territorial state non-budgetary funds.

THE QUOTA SYSTEM IS A WAY OF ALLOCATING A CERTAIN NUMBER OF BEDS IN THE FEDERAL AND REGIONAL HEALTHCARE HOSPITALS FOR THE TREATMENT OF SPECIFIC DISEASES THAT REQUIRE COMPLICATED AND EXPENSIVE CARE, INCLUDING ONCOLOGICAL, CARDIOVASCULAR, AND NEUROLOGIC DISORDERS.

ruble lost almost half of its value and never fully recovered) and for the inflation rate that hit double-digits during the crisis, healthcare expenditures have in fact been decreasing over the last few years.

According to the reports published by the Federal Treasury, in which healthcare expenditures are calculated within the structure of the federal budget (that does not include, for example, insurance payments to FOMS), one can see a slightly different dynamic.

— 2014: 480.8 billion rubles;
— 2015: 376.6 billion rubles;
— 2016: 494.8 billion rubles.

Despite the increase in healthcare expenditures for 2016, the draft budget for 2017 prepared by the Ministry of Finance provides for significant healthcare cuts—down by 33 percent (compared to 2016) to 362 billion rubles, including 39 percent cuts for both hospital and ambulatory medical care.

Federal Mandatory Insurance Fund (FOMS)

The law on mandatory medical insurance was introduced in Russia in 2010, though the Federal Mandatory Insurance Fund (FOMS) was created as early as 1993. Since 2010, the healthcare system has been undergoing optimization with a view to establishing single-channel funding, based on the public's insurance contributions, without additional subsidies from the budget. However, since 2014, when the Russian economy entered crisis mode, the FOMS budget that accumulates all the insurance payments for mandatory medical care has been deficit-ridden. In 2015, the FOMS revenue budget stood at 1.632 trillion rubles, while its expenditure budget was 1,675 trillion. In 2016, the deficit persisted, with FOMS revenues planned at 1.661 trillion rubles and expenditures at 1.688 trillion.

The deficit is not the only issue with FOMS. Another problem is the significant discrepancies between the rates for medical services established by the mandatory medical insurance (OMS) scheme and their real costs, as the former are, on average, three to ten times less than the latter. For example, a basic blood test costs about 300 rubles, but the OMS rates schedule budgets for only 73 to 103 rubles for a blood test depending on its complexity. The cost of a visit to a physician varies from 300 to 800 rubles across the country, while the OMS rate is 108 rubles. The same cost gap is observed in high-tech medical care, which should be available to all Russians free of charge within the federal or regional **quota system**. But the OMS rates for the treatment of oncological diseases vary from 114,000 to 140,000 rubles, while the real costs per treatment may reach one million rubles or more.

Since medical care has to be free for the patient, the gap between the OMS rates and the actual costs is expected to be covered by hospitals or polyclinics. But they have very few sources to compensate for the difference. In theory, regional clinics can get additional funding from the regional budgets, but this assistance is usually quite

small. As a result, just to be able to operate within the OMS framework and to survive, clinics have to substantially increase their patient capacity and gain additional funds through paid services. But increased patient capacity leads to higher risks of poor-quality medical care.

Thus, for patients free medical services mean long waiting lines, cursory examinations, and a limited selection of medicines and services depending on the budget of the clinic in question. By making a clinic's well-being directly dependent on patient capacity and the ability to take in patients on a paid basis, the Russian government negates the very foundation of free medical care.

TAKEAWAYS

- The Russian government should realize that a country that claims responsibility for its citizens' well-being cannot afford to increase expenditures on national defense at the expense of healthcare.
- The Russian government should acknowledge that the country's healthcare system is *de facto* not free.
- A possible solution to this problem could be a transition to a combinatorial (partially free) healthcare model adopted by a number of new members of the European Union. Such a model helped many of these countries overcome the legacy of socialism and preserve public trust in the national healthcare system.
- During the transition, the government can determine 1) services that should be accessible, high-quality and free for everyone (i.e. emergency and first aid services, child care, oncology); 2) services that should be fee-based (social benefits can still be applied).
- As part of the reform, the OMS rates schedule should be revised. Determining which services are to be paid and which ones free, as well as estimating the paid service costs, must be done as transparently as possible.

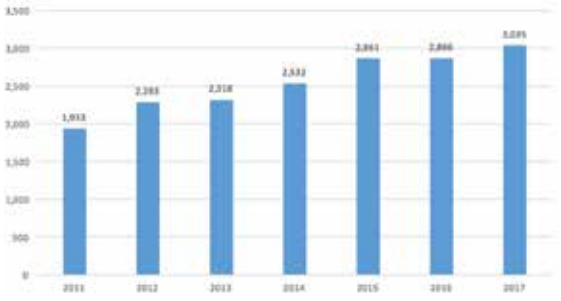
II. KEY ISSUES

Efficiency

According to the OECD, in 2014 (the latest data available), the share of healthcare expenditures in Russian GDP was 5.9 percent, while the average rate for OECD countries that year was 9.3 percent. The top three countries with the highest healthcare spending were the United States (16.9 percent), the Netherlands (11.9 percent), and France (11.6 percent).

The dynamic of healthcare expenditures in the Russian GDP structure is shown in Chart 2. The sharp drop from 7.2 percent in 2013 to 5.9 percent in 2014 may be a sign of an emerging economic crisis and a priority shift in the Russian government's policies.

CHART 2. Healthcare expenditures in the structure of the consolidated federal budget (billion rubles)



Source: OECD.

Russia's healthcare spending per capita (using the purchasing power parity conversion) is estimated at $1,474, which is also below the OECD average of $3,484. To compare: the top three countries with the highest healthcare expenditure per capita are the United States with $8,745, Norway with $6,140, and Switzerland with $6,080.

In the 2016 Bloomberg Healthcare Efficiency Index, Russia ranked 55th out of 55 countries surveyed (Hong Kong, Singapore, and Spain are ranked as the top three countries with the most efficient healthcare systems, according to Bloomberg's methodology, which is based on three metrics—life expectancy, relative and absolute health expenditure).

The bottom place in the efficiency ranking comes as no surprise: the Russian government continues to prop up many inefficient assets, including numerous polyclinics and hospitals, inherited as part of the Soviet legacy. Current norms for state medical institutions offer no scope for increasing their efficiency. For example, after standard appendicitis surgery a patient is required to stay in the hospital for at least 10 days; after giving birth, a woman stays in the hospital for five days. In most developed countries, if these two operations go well, patients get discharged on the following day, so that they vacate expensive hospital beds. Prophylactic (preventive) treatment for patients suffering from chronic diabetes or degenerative spine disease may take up to a month and a half in Russia, which makes a mockery of the notion of efficient medical care.

After the collapse of the Soviet Union, the government made a number of unsuccessful attempts to reform the healthcare system. But instead of conducting actual reforms, they merely poured funds into the existing system and introduced various innovations that only added more layers of inefficiency.

Bureaucracy

The Chicago Department of Public Health employs eight people. The Moscow Health Care

Department employs over 2,000. Does healthcare system function poorly in Chicago, a city with a population of about 9 million (accounting for the Greater Chicago area)? No, it doesn't. The healthcare system in Moscow, which has a population of at least 15 million, does not function well. Any Muscovite will testify to that.

Chicago residents and medical workers, it seems, do not need top-heavy management and supervision. Likewise, the Russian healthcare system would be unlikely to collapse if the ranks of administrators were trimmed. Perhaps it would even function more efficiently, as the bureaucratic pressure is lifted.

Centralization

Today regional health departments in Russia work within a centralized administration system, which seriously obstructs the process. For example, tomographs for regional clinics are acquired in Moscow by the Ministry of Healthcare, the underlying logic being that regional authorities cannot be trusted with the money. But due to the widespread corruption in Russia, the money still gets stolen—in large volumes and sometimes before the tomographs arrive at their destination. For example, instead of four tomographs worth $2-3 million ordered through the Ministry of Healthcare, a regional clinic may receive only one or two.

Here's another example of inefficiency caused by the centralized administration of the Russian healthcare system. Let's say a decision is made to acquire medication for the treatment of HIV across the country. How would such a project be implemented in reality? A group of officials in the Ministry of Healthcare is tasked with collecting data on the number of people infected with HIV in Russia. They probably delegate this task to their aides who, likely, don't have a medical degree or relevant training. To carry out this task they need to contact regional authorities and request statistical data from them. The latter are thus forced to do research on the ground, but since it is practically impossible to count all the people with HIV, they pluck a number out of the air and report back to the Ministry, which accumulates abstract data and publishes a report. Subsequently, based on this report, pharmaceutical companies approach the Ministry and start lobbying for their HIV medications to be purchased by the government. The Ministry may even accept a certain commission from one (or several) of them and decide to buy, say, 40 percent of drug A and 15 percent of drug B.

In some cases, centralization leads to absurdity. In a real life case in a Moscow clinic, in order to replace a defunct socket, the clinic administration was obliged to get permission from a special commission in the Moscow department of public health. The latter sent inspectors to determine whether the replacement was indeed necessary. During the inspection it was discovered that the clinic had "exceeded its limit" for the number of sockets (this standard actually exists), and, as a result, the clinic was denied the socket replacement. What officials didn't know was that the socket in question was located in the operating room and without it some essential equipment could not work. The refusal was based on a technicality and put patients' lives at risk. Such decision should have been made at the clinic administration level, not in the Moscow department of public health.

There is another damaging side-effect of centralization. In today's Russia with its population of over 140 million people, there are 10-12 multifunctional medical centers offering high-tech medical care at the federal level. They are located not just in Moscow and St. Petersburg, but also

in Khabarovsk, Yekaterinburg, Rostov-on-Don, Krasnodar, Arkhangelsk, and elsewhere. As part of the Health national priority project, these centers have been renovated and supplied with modern equipment. But the clinics remain vacant.

There are several reasons why:

1. Regional hospitals lack specialists trained to operate sophisticated modern equipment and work according to modern medical standards.

2. The quota system works inefficiently. According to the funding and subordination principles, medical centers in Russia can be divided into two types: federal and regional. In line with Ministry of Healthcare standards, patients with serious diseases receive quotas to get treatment only in the federal medical centers. But the number of beds there is limited, which creates a dead-end situation: patients are put in the long waiting lists to receive their quotas (beds) to be treated in the federal centers, while regional hospitals stay under capacity. The reason is that even if they are equipped well enough to offer modern medical care, they lack skilled personnel. Also, due to low patient capacity, doctors in the regional high-tech medical centers are unable to raise their professional level.

3. There is a problem with the funding distribution. Quotas can be transferred from the federal centers to the regional ones and vice versa, but if regional centers start admitting patients with federal quotas, they may lose their funding from the regional budgets.

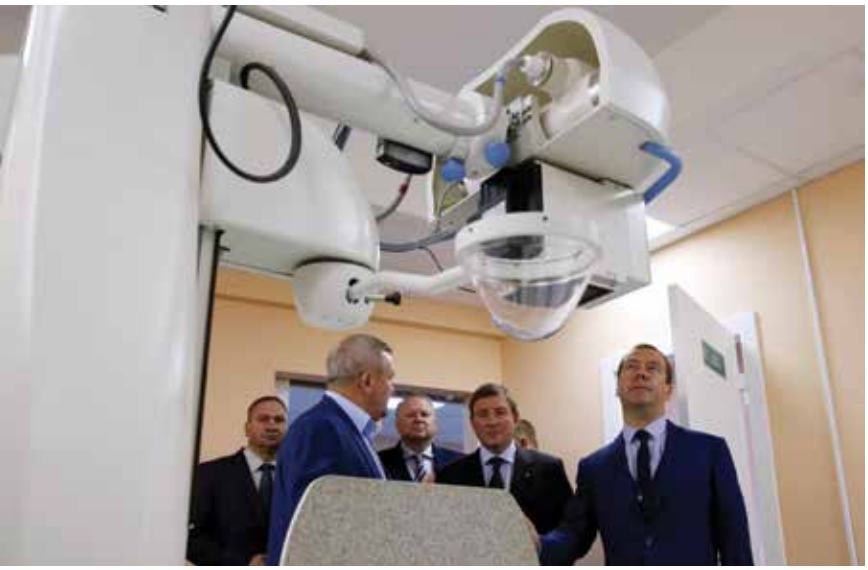
TAKEAWAYS

- Bureaucracy and the system of centralized administration undermine the work of the whole healthcare system by increasing the number of mindless mistakes and reducing efficiency. Administration of the state medical institutions, including managing financial issues, should be decentralized. It should be up to the dean of each individual clinic to make decisions on what to buy, where to buy it and how. And deans have to bear personal responsibility to patients and the regional department of public health.

- While in Europe and the United States high-quality medical care is offered nationwide, in Russia the few existing high-tech clinics are located only in the large federal centers. To overcome this geographic problem, more high-tech medical centers at the federal level can be set up on the basis of the five-six existing regional clinics. They should not be inferior to the modern medical centers in Moscow and St. Petersburg. It's important that such centers are developed as conglomerates—health centers that offer a full spectrum of services (diagnostics, in-patient facilities, surgery, etc.) and conduct multifunctional research.

- Development of conglomerates will create jobs for high-skilled local medical professionals who are currently incentivized to move to Moscow; it will encourage decentralization of high-tech medical care by "relieving" health centers in Moscow and St. Petersburg of additional inflow of regional patients; it will also help utilize local resources more efficiently. These represent real opportunities to deliver medical care to all Russian patients who need it.

III. IMPORT SUBSTITUTION



Russia's Prime Minister Dmitry Medvedev visits a new building of the Pskov Regional Oncology Center. Photo: Dmitry Astakhov / TASS

The Cost of Russia's Import Substitution Policy

Starting in 2001, Russian President Vladimir Putin has maintained that Russia should fully switch to domestically-produced drugs (note that such restrictions don't exist in the developed world, as they are not economically justified and contradict the principles of a free market). However, even after the introduction of the 2014 import substitution policy (as a countermeasure to the West's sanctions imposed on Russia following the annexation of Crimea and incursion into eastern Ukraine), Russia's own drug-manufacturing has yet to emerge. At the moment, 99 percent of the time Russian drug producers work with materials imported from India, China, Mexico, and Argentina—the drugs get repackaged and relabeled in Russia.

Import substitution per se is a good idea, but Russia's implementation of it is another example of a damaging and thoughtless state policy in the country's healthcare system. A doctor should be able to treat patients choosing from the whole spectrum of drugs offered by modern healthcare, not from the cheapest options.

Some high-tech equipment (defibrillators, pressure chambers for newborns, tomographs, MRI equipment, etc.) is not and never has been manufactured in Russia. Though the work of some regional factories (e.g. the Electron National Research Institute (ENRI) or the Urals Optical & Mechanical Plant, both part of Rostech State Corporation controlled by Sergei Chemezov, who incidentally is a close ally of Vladimir Putin and under U.S. and E.U. sanctions) may be presented in the Russian media as a success story in import substitution, until very recently they had never produced any high-tech equipment. For example, ENRI manufactures X-ray machines based on Chinese microprocessors, and the diagnostic quality of the images is low.

There are other side-effects of the import substitution policy, including availability of coronary stents: only one type of stent (out of seven) is produced in Russia. Since the other six types are banned from being imported, only one type of heart surgery is currently performed in Russia. Patients in need of other types of surgeries are left to their own devices.

Today, the overall number of syringes produced in Russia stands at 840 million, just 28 percent of the amount needed for every Russian to take an annual course of intramuscular injections of antibiotics (3 billion). At the same time, there are 20 types of syringes on the banning list drawn up as part of the import substitution. But the problem

IMPORT SUBSTITUTION PER SE IS A GOOD IDEA, BUT RUSSIA'S IMPLEMENTATION OF IT IS ANOTHER EXAMPLE OF A DAMAGING AND THOUGHTLESS STATE POLICY IN THE COUNTRY'S HEALTHCARE SYSTEM. A DOCTOR SHOULD BE ABLE TO TREAT PATIENTS CHOOSING FROM THE WHOLE SPECTRUM OF DRUGS OFFERED BY MODERN HEALTHCARE, NOT FROM THE CHEAPEST OPTIONS.

faced by national producers is not just the quantity, but the low quality of products and the lack of modern technology.

All Russian rehabilitation means—from support canes to walking frames—are copies of foreign analogues; moreover, they are manufactured from poor-quality materials and are not tailored to patients' individual needs. Russian scrubs can be more expensive than foreign ones even though their quality is dubious. For example, a scrub produced at a factory in Smolensk may cost 143 rubles against a price-tag of 40 rubles for a German scrub produced by Hartmann, a leading company in the mid-segment of the market. Russian rubber gloves are known to be slippery, which may cause a doctor to accidentally drop an ampule or an instrument.

The situation is not yet critical: the service life of tomographs, MRI equipment, etc. is quite long. But once something breaks, it is impossible to fix it without violating the ban on purchasing imported equipment. Another important issue to keep in mind is that medical technology is evolving very fast: it gets outdated within three to five years. One can hope that Russian producers will learn how to manufacture modern equipment better than Siemens, Philips, and other international leaders, but even building a factory or adjusting production can take years, during which time the technological gap between Russia and the rest of the developed world will widen.

The government insists that Russian equipment should replace imports. It is already happening in clinics where administrators cannot resist the pressure from the authorities. For instance, in some regions high-quality foreign lung ventilators were replaced with Russian Faza apparatuses which, according to local doctors, only provide patients with 80 to 90 percent of the required amount of oxygen. This means that a person in a critical condition will not be able to breathe normally and therefore die.

Finally, the import substitution policy undermines the market positions of responsible Russian producers—the so-called "new Russian pharma." Before packaging and putting a Russian label on a drug, responsible Russian companies conduct high-quality purification of the drug, check the precision of the product formula, and control the whole process (as in the West). But this technology always drives the price up. In the meantime, according to the new Russian healthcare regulations, a drug has to win in a tender to be purchased by a medical center. As a result, producers that skip the costly quality control and purification and focus on just packaging the drugs are more likely to win in tenders, because their proposals serve the bottom line.

Pharma 2020

Without competition, pharmaceutical companies will not be able to evolve. However, it seems that the Pharma 2020 strategy, launched in 2009

with the goal to build a strong pharmaceutical industry in Russia, misses the point. One of the priorities outlined in the strategy is for Russian drugs to replace foreign imports. The problem is that it takes at least five years for the industry to get round to manufacturing drugs, even without using its own formula (which takes additional time to develop), while maintaining an adequate level of quality and technology control. Russian pharma cannot wait that long.

Russian clinics used to face a dilemma: purchase generics in quantities enough to cover all patients or purchase a limited number of high-quality foreign drugs without being able to offer them to everyone. Today, they face a dilemma of different sorts: which Russian generics to buy so that patients do not die. Russian medication for chemotherapy, for example, is produced on the fly, resulting in a long list of undocumented side-effects that may pose a risk to patients.

Thus, the government's help is controversial, forcing national pharmaceutical companies to perform a balancing act with patients' lives.

Charity Foundations

Today, Russian charity foundations are trying to help fill the void in the technical and medical supply of Russian clinics. In recent years, they have spent about six billion rubles annually on patients. For example, their efforts paid for all non-relative bone-marrow transplantations in the country, 60 percent of unregistered medication supplies, up to 30 percent of the overall drug supplies to certain hospitals, and various other types of high-tech medical care.

Charity foundations cooperate with the relevant ministries, collecting and analyzing statistical data on healthcare, developing economical solutions for patient treatment, in many cases drawing from international experience, and consulting officials on drafting bills.

However, their position in Russia has become unstable due to tough amendments to the law on nonprofit organizations. If the government's plan to restrict foreign funding and transfer the nonprofit sector to government control is pushed through, it will seriously hurt the work of charity foundations. On the one hand, NGO funding will essentially be about moving budget money "from one pocket to another," and on the other, it will strip charity foundations of the freedom to choose their own methods and recipients of aid.

TAKEAWAYS

- The import substitution policy is ideologically correct, but in Russian practice its implementation causes a lot of trouble. The healthcare system is not an arena for showing off political ambitions. Patients should not suffer just because Russian leaders have an ax to grind.

- Russia's pharmaceutical industry can and should be developed, but the conditions for a normal market economy and free competition need to be created (some government subsidies, benefits, and other types of support can be preserved as additional measures of support).

- The government has to stop helping national pharmaceutical companies at the expense of patients' health. The political will is needed to prohibit risky savings on drug production when human lives are at stake.

IV. MEDICAL EDUCATION

Students of the Sechenov First Moscow State Medical University. Photo: Valery Sharifulin / TASS

Personnel Problem

One of the tragic results of Russia's Health national priority project (launched in 2006) is that the key issue became evident only after the basic implementation stage was completed. Through the project the government supplied regional clinics with lots of modern equipment, but the expensive machinery remained idle (and still is) because the medical personnel didn't know how operate it.

According to some estimates, the average age of a Russian district physician (*uchastkovy vrach*—the closest equivalent in the West would be a primary care physician or a family practitioner) is 60 years old. This is a generation of medical professionals who studied in the 1970s, began working in the 1980s, and lived through the turbulent 1990s that had a horrible impact on the profession. Raised by the Soviet healthcare system, these doctors don't speak any foreign languages and, as a result, are neither aware of modern treatment methods and new medical research findings, nor willing to learn about them. But that is not even the main problem; the bigger issue is their overwhelming fatigue.

In theory, the next generation of doctors (about 45 years old) should form the basis of Russia's current healthcare system. When they studied, they already had access to foreign literature and were able to tap the best practices of the Soviet old-school medical education. But in reality, this generation is a demographic failure: roughly half of the medical professionals of that age have emigrated, and the other half is more likely to work in related industries, e.g. aesthetic medicine, etc., than in a state clinic.

The prospects for the future generation of medical professionals leave little room for optimism.

Education

Contrary to all global standards, Russia's medical colleges are isolated from the training and research facilities. The usual approach is to form a conglomerate: university + clinic + research center. With this in place, top medical scientists can deliver lectures to future doctors within the same university; students can test their theoretical knowledge in practice right on campus; and practicing doctors, professors, and students have access to the institution's research facilities. All of the conglomerate's resources ultimately work for the patient's benefit.

While this is the way most U.S. medical institutions are structured, there are only three centers like that in Russia: the Blokhin Russian Cancer

Research Center, the Federal Research and Clinical Center of Pediatric Hematology, Oncology and Immunology (named after Dmitry Rogachev), and Sechenov First Moscow State Medical University.

Another drawback of the medical education is that professors with a Soviet background still teach in Russian universities; they lack knowledge of evidence-based medicine and cell technology, and have few ideas about what future medicine may look like. They continue teaching the way they taught 20 or even 50 years ago. Some modern specializations (e.g. palliative care or psycho-oncology) are not even available in Russian schools. Until recently, they were not even in the Ministry of Healthcare's schedule of rates.

Additionally, there are issues with the Medical Code of Ethics. The Ministry of Healthcare does not evaluate the way doctors treat their patients. There is an implicit presumption of patient guilt—that somehow a disease is the patient's fault. There is a lack of awareness that a patient should not suffer even more because of the doctor's improper attitude.

Naturally, Russian doctors have opportunities to self-educate. However:

a) Many of the Western pharmaceutical companies that used to offer help to Russian doctors by sponsoring training and educational seminars have left the market under the current political and economic conditions.

b) The average wage for a doctor in Russia varies from 12,000 to 18,000 rubles per month across the country, therefore most doctors cannot afford to pay for additional training; besides, they lack the time and energy due to heavy workloads and endless paperwork.

TAKEAWAYS

- The personnel problem in the Russian healthcare system has never been more acute: primary care physicians are on average 60 years old; many practicing doctors were educated in Soviet times, and they generally lag behind their Western counterparts in terms of qualifications.

- In order to raise a new generation of Russian doctors who can become the backbone of the modern Russian healthcare system within 10-15 years, the problem of medical education and personnel training needs to be addressed today.

- A systemic reform of the medical education needs to be implemented nationwide; university clinics have to be created; academic programs need to be updated and new modern specializations introduced. Consequently, the Ministry of Healthcare's schedule of rates should be revised, and a new Medical Code of Ethics needs to be developed.

V. SCIENCE. COUNTRY IN FOCUS: THE UNITED STATES

President Barack Obama and Vice President Joe Biden discuss the release of the Cancer Moonshot Report in the White House on October 17, 2016. Photo: Olivier Douliery /CNP via ZUMA Wire /TASS

"War on Cancer"

R&D is one of the most complicated, but widely efficient long-term investments in a healthcare system. The United States sets a global example of how large-scale investment programs can become the centerpieces of medical progress.

On December 23, 1971, U.S. President Richard Nixon signed the milestone National Cancer Act (NCA), with the goal of curing cancer, the nation's second leading cause of death, requesting an appropriation of $100 million to that end. The National Cancer Institute (NCI) was reorganized to take a lead in the "war on cancer," in Nixon's own words. Inside the NCI, four divisions were created: Cancer Biology and Diagnosis, Cancer Cause and Prevention, Cancer Treatment, and Cancer Grants.

In 1979, the first breakthrough was reported—the identification of tumor protein p53 that prevents cancer formation and functions as a tumor suppressor. Over the next few decades, the NCI exceeded the initial $100 million budget multifold, but achieved impressive results:

1. Scientists came to realize that there is no universal cure for cancer; it also became clear that future cancer treatment will be based on a customized, individual approach.
2. A number of important discoveries were made, including establishing the fact that mutations cause transformations of normal cells into cancerous cells.
3. A new generation of anticancer drugs was introduced: Glivec (Imatinib), Mabthera (Rituximab), Herceptin (Trastuzumab), Adcetris (Brentuximab). They have proved to be revolutionary in the treatment of specific types of cancer.
4. Research centers were created within most large oncology clinics, attracting some of the best minds from all over the world.
5. Mortality among cancer patients has substantially decreased.
6. An important shift took place in the public mind: people came to realize that cancer is no longer a death sentence; it is possible to fight and live with it.

"Cancer Moonshot"

On January 12, 2016, President Barack Obama delivered his last State of the Union address, in which he announced a new initiative to fight cancer: "Last year, Vice President Biden said that with a new moonshot, America can cure cancer. Last month [December 2015], he worked with this Congress to give scientists at the National Institutes of Health the strongest resources that they've had in over a decade. So tonight, I'm announcing a new national effort to get it done."

As Obama noted, the idea for this effort called "Cancer Moonshot" came from Vice President Joe Biden who lost his eldest son to brain cancer in 2015, and it was Biden who was put in charge of implementing this ambitious program with a planned budget of $1 billion.

Before Obama's historic speech, the NCI announced its budget for the 2017 fiscal year, providing allocations of $5.21 billion for the Institute's key objective: "A wide range of research disciplines that span the continuum from basic science to clinical research to research on implementation and cancer care delivery."

According to leading oncologists, a breakthrough in cancer treatment is currently expected in the field of cell technology that works to boost the immune system to fight cancer. This technology (T-cell immunotherapy) is already undergoing clinical trials in the U.S. and showing successful results.

Still, despite this success, there is one issue that may obstruct the further development and distribution of the new drug or technology—that is commercialization. As part of the established procedure, around the time of the clinical trials the drug development can be funded and further licensed to pharmaceutical companies that decide on its market value and whether to even release it to the market at all. Therefore, it is important that the Cancer Moonshot program makes sure that new anticancer drugs, technologies, and treatment are affordable and accessible to all who need them the most.

Going back to the efforts undertaken by the Russian government, it is worth mentioning that as part of its 2010-2014 program to fight cancer, the Ministry of Healthcare first allocated 47 billion rubles (~$750 million), but later decided to shut the program down.

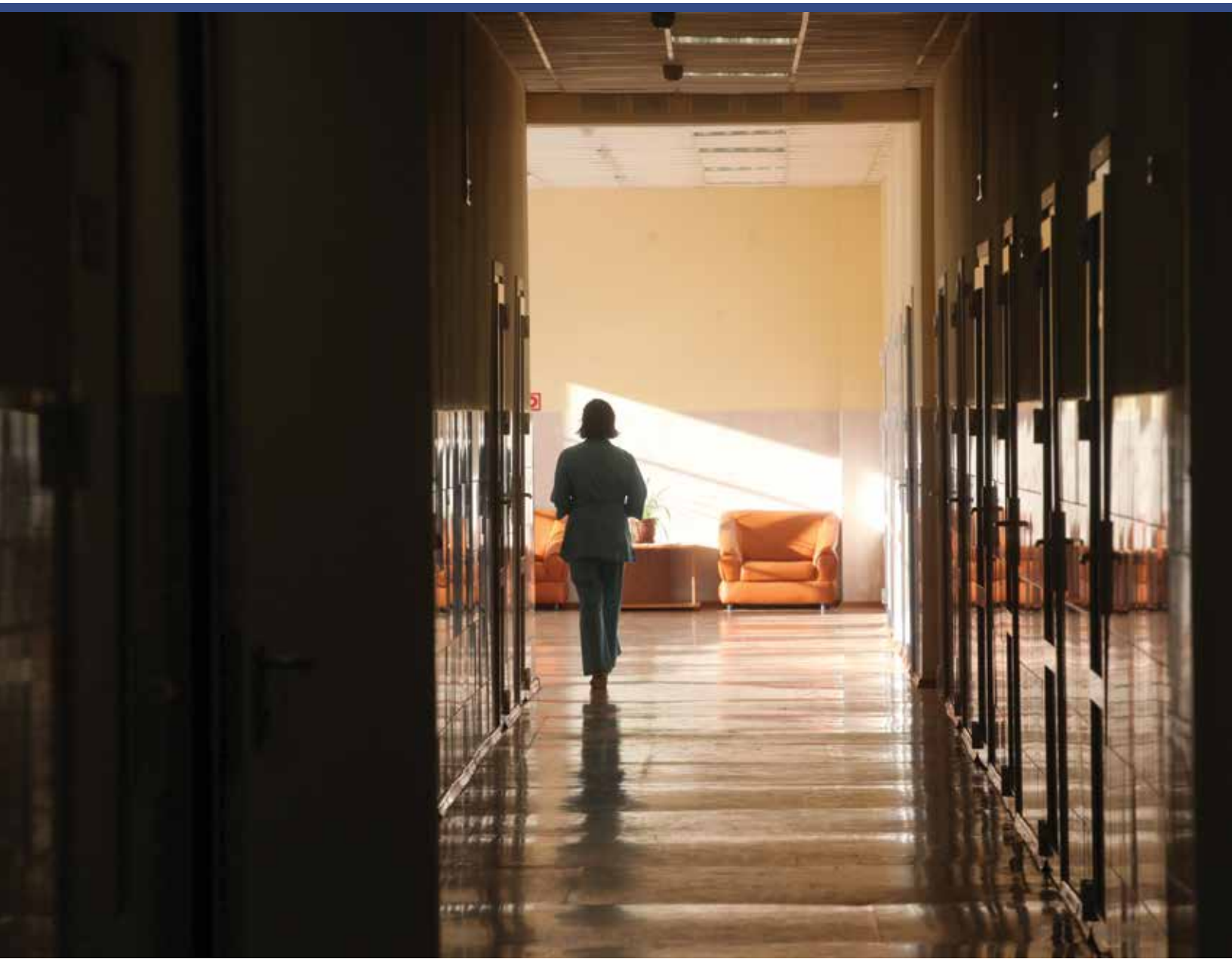
TAKEAWAYS

- The experience of developed countries shows that breakthroughs in medical research often require political will and government support.
- For Russia to aspire to any noticeable standing in the international scientific rankings in the next 25 years, efforts need to be made today to invest in medical research and development, build conglomerates, and transform medical institutions and universities.

CONCLUSION. POLICY RECOMMENDATIONS

In order to improve the Russian healthcare system and make it more efficient, the following changes need to take place:

- strategic reorientation of the healthcare system toward a high-tech model, including introduction of a wide range of innovations—from electronic case-records for patients to modern drug development;
- creating conglomerates—full-cycle medical centers where patients can be fully examined, diagnosed, and treated by doctors of various specializations;
- decentralization of the federal medical centers to reduce the pressure of high patient capacity on the clinics of Moscow and St. Petersburg, thus creating jobs in the regional centers and incentivizing qualified specialists to stay in their home cities instead of moving to the capital;
- decentralization of the healthcare funding system and introduction of self-governance for the regional medical centers;
- structural reform, including elimination of inefficient assets: i.e. departments of physiotherapy, prophylactic (preventive) treatment, long-term healthcare facilities, etc.; revision of the Ministry of Healthcare's norms and standards for in-patient facilities;
- reform of the medical education system;
- advanced professional training for medical staff (including mandatory proficiency testing for doctors every 1-3 years);
- increase in the wages of mid-level medical staff and practicing doctors;
- systemic work with charity foundations to assist medical centers during the course of the reforms.



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