



# Digest

## Of Russia's Medical Device Market

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# Key Industry News

## Manufacturing of medical devices in Russia increased by 17.6%

Russian Federal State Statistics Service (Rosstat) calculated the value of medical devices (including surgical equipment, orthopedic appliances and their components), produced by Russian companies in April 2015.

According to the report of Rosstat, the total value of produced medical devices in April 2015 amounted to 2.6 billion rubles, which is 17.6% more than in the same period in 2014.

In January - April 2015 the value of manufactured medical devices reached 8.8 billion rubles. This figure is 10.4% higher than in the first four months of 2014.

## Scientists from Nizhny Novgorod were first in Russia to create “bone-cement”

Doctors from The Volga District Medical Centre (VDMC) in cooperation with a private medical company have created and patented a new biological material they called “bone cement”, which allows to create human bones during surgery. “Bone cement” is a synthetic material made from prepolymer. Due to it, the material is hypoallergenic and biocompatible.

It is reported that if the price per unit of US material reaches 80 thousand rubles, the Russian package will cost about 18 thousand rubles. Thanks to the invention of safe “bone cement” many patients will get a chance to save a limb rather than amputate.

“Cement, mixed during the operation, is put on the damaged or remote part of the bone. After freezing we get an artificial implant”, said Anton Novikov.

It is known that more than 80 successful operations with the use of “bone-cement” has been performed in VDMC so far.

According to the scientists, bone portions up to 30 cubic centimeters can be restored with the help of this material. The integration of a bone and material happens within 10-15 years.

## TPU scientists have developed a device for heart's diagnosing without a doctor

The team of young scientists of Tomsk Polytechnic University have developed a portable pocket electrocardiograph “ECG – Express”, designed for self-diagnosis of cardiovascular diseases.

The device allows a person to receive his cardiogram promptly without attending hospital. It can be electronically sent the doctor, printed out and provided for inspection.

“The project is very urgent, it must solve a very important social issue – the fight against sudden death. We plan to test the device on patients of the Institute of Cardiology, who suffered an acute myocardial infarction. It is important to monitor changes in their ECG, to eliminate the risk of new infarction. Also, we will solve the problems that are associated with the convenience of data interpretation”, the deputy director of the Institute of Cardiology Shamil Akhmedov said about development’s prospects.

In the future, “ECG – Express” will be able to determine myocardial infarction, angina pectoris and other manifestations of coronary heart disease, developers plan to introduce a non-contact measuring instrument technology as well. According to the authors a pocket ECG will cost about 5000 rubles (appx. \$145).

## First Russian medical exoskeleton goes on trial

The clinical trials of Russia’s first exoskeleton, designed for rehabilitation of patients with disorders of the locomotive system, will begin in May at one of the country’s top medical research institutions.

The exoskeleton’s developer, ExoAtlet, a company from state-run innovation hub Skolkovo, said that it agreed on cooperation with the Moscow-based Russian National Research Medical University named after Nikolay Pirogov.

It is known that an expert commission will select the most suitable candidates from 700 applicants who will undergo a 30-hour training course in an exoskeleton under supervision from the medics. Future participants are people who suffer from a variety of spinal cord injuries, cerebral palsy and other neurological disorders.

ExoAtlet delivered the first functional prototype of Russian exoskeleton for medical rehabilitation back in 2013.

In June 2014, the company won the nationwide start-up competition, which was organized by Skolkovo.

## **Ural Federal University and Ilizarov Center will be engaged in limb prosthetics**

Ural Federal University in cooperation with the Russian Ilizarov Scientific Center for Restorative Traumatology and Orthopaedics will grow and implant in the human body prostheses that replace lost limbs.

This field of medicine called osseointegration presupposes merging of implants with the bone tissue. According to Sergey Kortov, the Vice-rector for Innovations of Ural Federal University, what is very important for osseointegration is biocompatibility of used materials so that the bone tissue could easily grow through it during regeneration. It requires a strong cellular structure, which can be created with the use of additive technologies.

"For example, if a person lost a phalanx of a finger, we would create a substitute of the phalanx and implant it", he said. "What will be on the top is the bone tissue grown from biocompatible materials. Finally we will get a properly functional finger with the only difference – it will not have the nerves and blood vessels".

According to the scientist, the concept of osseointegration and its clinical application in tissue integrated prosthesis has opened up many new avenues in replacement of lost limbs.

## **Semiotics will supply microchips for revealing glycan-binding proteins to the US**

Portfolio company of Biofund RVC, Semiotics, has started exporting a microchip for the quantitative determination of glycan-binding proteins. It signed a partnership agreement for the distribution of a microchip with GlycoTech Corporation.

According to Semiotics, a Russian microchip contains the world's largest library of carbohydrate glycans, which has been created for 30 years. Already now up to 600 carbohydrate glycans can be placed on the chip to get information about hundreds of diseases.

"Identification of glycan-specific antibodies in the blood opens up new opportunities for diagnosing a wide range of infectious disease, autoimmunity and cancer. Mapping the specificity of bacterial and viral lectins and also glycanase bacteriophage is a key step in the development of antimicrobial next-generation drugs which are an alternative to classical antibiotics", as stated in Semiotics' press release.

The microchip was created at the M.M. Shemyakin–Yu.A. Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences in conjunction with New York University.

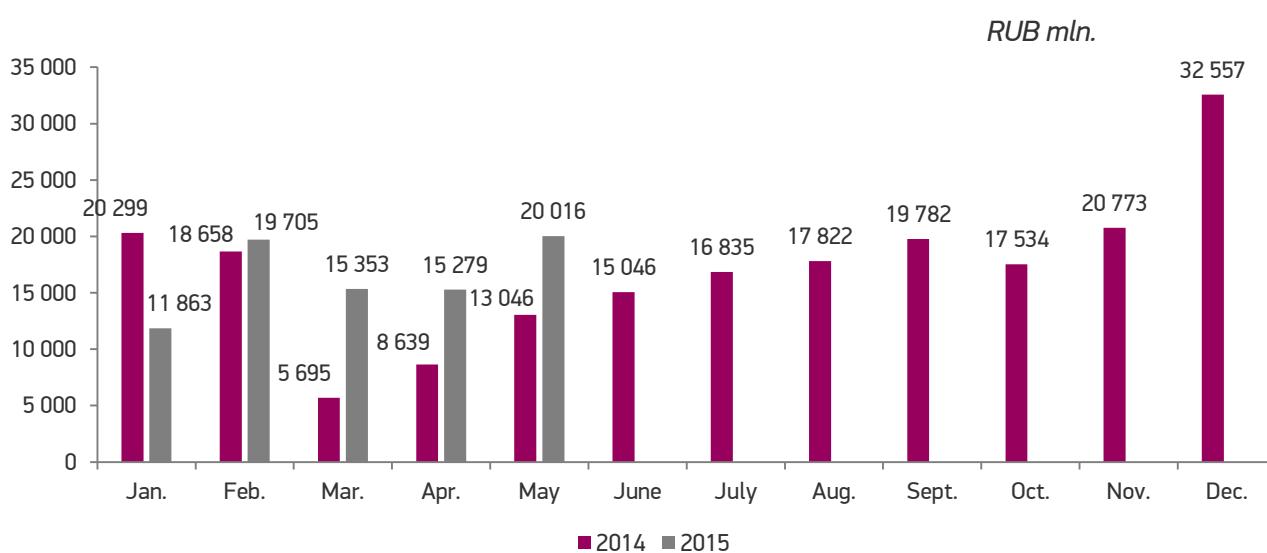
# Market Statistics (May 2015)

Since most of Russian healthcare facilities are state owned, 75% of all medical devices are sold through a public bidding process. Therefore, the dynamics of public procurement of medical devices determines the dynamics of the whole market. It explains the importance of tracking the value of public procurement market on a monthly basis. The analysis of public procurement uses data on tenders for delivery of medical devices posted on the official procurement website [www.zakupki.gov.ru](http://www.zakupki.gov.ru).

Figure 1 shows that the value of public contracts in May 2015 was RUB 20 bln., which is more than 53% higher than April 2014's 13 bln.

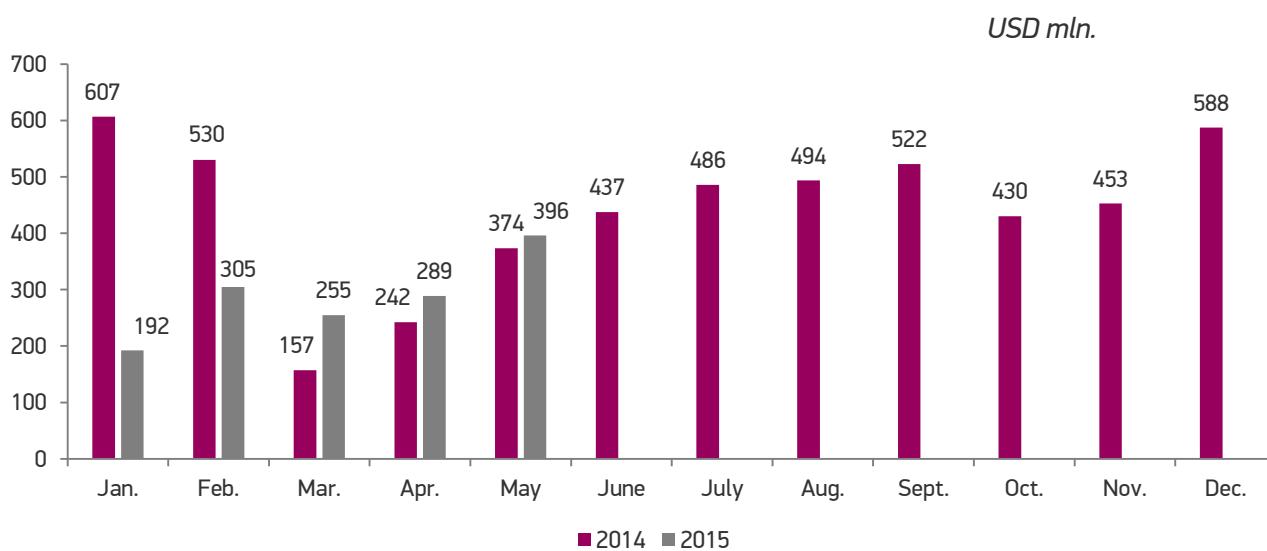
Figure 2 demonstrates that market dynamics in USD is a bit different. It reflects the trend of a strengthening ruble against the US dollar.

Figure 1. Dynamics of public procurement in 2014-2015 (RUB mln.)



Source: MDpro

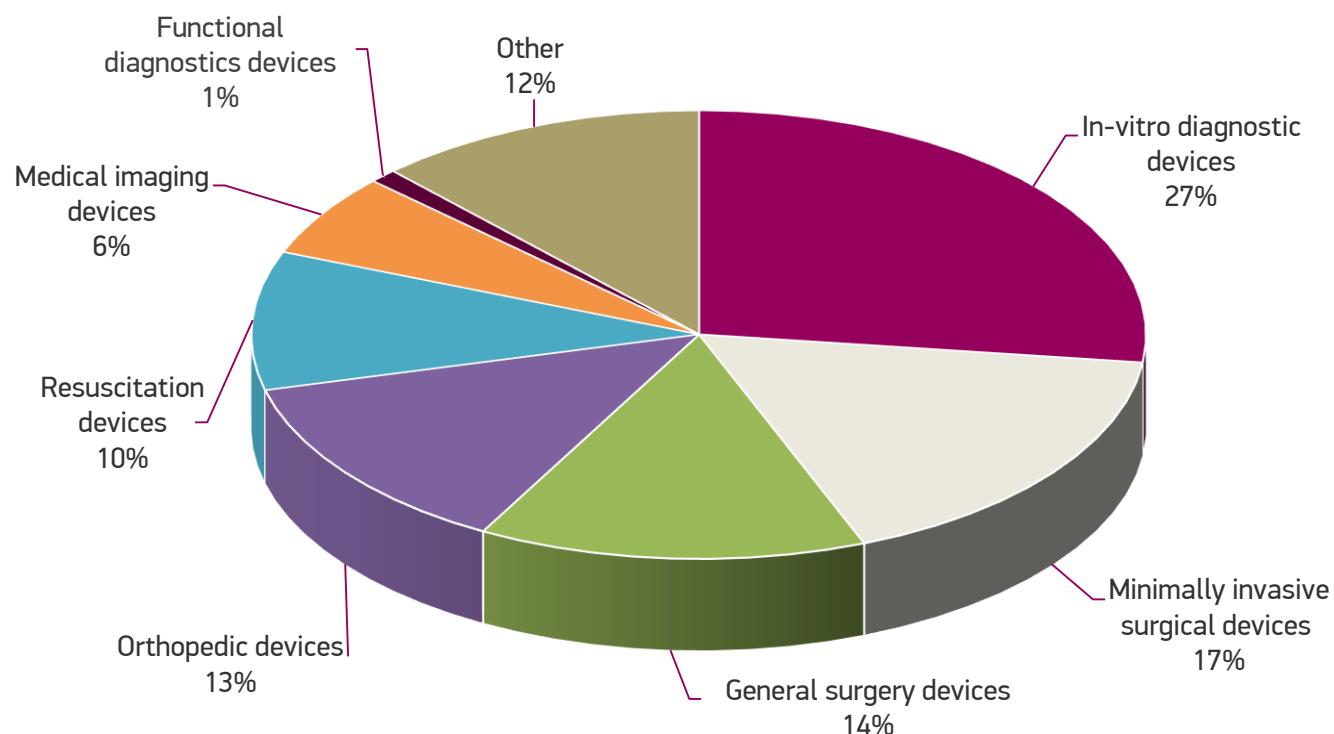
Figure 2. Dynamics of public procurement in 2014-2015 (USD mln.)



Source: MDpro

The largest segments in May 2015 were in-vitro diagnostic devices (27%), minimally invasive surgical devices (17%), and general surgery devices (14%).

Figure 3. The structure of public procurement by segments in May 2015



Source: MDpro

For more information about the Russian medical device market, please visit our website at [www.md-pro.ru](http://www.md-pro.ru) or email us at [info@md-pro.ru](mailto:info@md-pro.ru)

Sources of information used in digest' preparation: Pharmvestnik, Medvestnik, Remedium, TASS, RT, Tomsk Polytechnic University