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Analysis of the Medical Equipment Market of the Russian Federation: Features and Prospects of Its Development

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Abstract

One of the key directions in the development of modern healthcare is tightly concentrated around technological modernisation, the main task of which is to achieve a high quality of life for the population based on sustainable economic growth and the use of advanced technologies. With their help, the priority of national health care will no longer be the treatment of identified diseases but the prevention and maintenance of health. Limited access to advanced achievements in the field of medical equipment and a significant level of competition from foreign manufacturers with significantly greater financial strength have led to a low share of the domestic medical equipment market on a global scale. The lagging behind the world's leading manufacturers in terms of the commercialisation of innovations is accompanied by a high cost of equipment for the production of medical devices, a high level of import dependence in components, the inability of manufacturers to provide services for the integrated equipment of medical institutions, and a shortage of qualified personnel capable of solving the problems of creating new products and organising modern production in the medical industry. This article analyses the medical equipment market of the Russian Federation and reveals specific features and principles. The essence of the factors that hinder and promote market growth is revealed, and the principles that need to be considered when forming the development vector are listed. The main factors that positively influence the market of innovative medical equipment are the growth of financial resources in healthcare, the expansion of state guarantees of medical care, an increase in the volume of high-tech care, and trends in medical science. However, certain institutional factors inhibit the development of the market, particularly those related to regulatory and legal regulation as well as the interaction of market participants.

Keywords: medical equipment, medical equipment market, factors of formation, features of the equipment market, conditions of increased uncertainty

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Анализ Рынка Медицинского Оборудования Российской Федерации: Особенности и Перспективы Его Развития

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Аннотация

Одно из ключевых направлений развития современного здравоохранения плотно концентрируется вокруг технологической модернизации, главной задачей которой является достижение высокого качества жизни населения на основе устойчивого экономического роста и использования передовых технологий. С их помощью приоритетом отечественного здравоохранения станет уже не лечение выявленных заболеваний, а предотвращение и поддержание здоровья. Ограничение доступа к передовым достижениям в области медицинской техники и значительный уровень конкуренции со стороны зарубежных производителей, обладающих существенно большей финансовой силой, привело к низкой доле отечественного рынка медицинской техники в мировом масштабе. Отставание от ведущих мировых производителей в части коммерциализации инноваций сопровождается высокой стоимостью оборудования для производства медицинских изделий, высоким уровнем импортозависимости в комплектующих, неспособностью производителей предоставлять услуги по комплексному оснащению медицинских учреждений и дефицитом квалифицированных кадров, способных решать задачи создания новой продукции и организации современного производства в медицинской промышленности. В данной статье проведен анализ рынка медицинской техники Российской Федерации, выявлены специфические черты и принципы. В рамках работы была раскрыта сущность факторов, препятствующих и способствующих росту рынка, а также перечислены принципы, на которые необходимо обратить внимание при формировании вектора развития. В качестве основных факторов, положительно влияющих на рынок инновационной медицинской техники, можно выделить рост объема финансовых ресурсов в здравоохранении, расширение госгарантий медицинской помощи, увеличение объемов высокотехнологичной помощи, тенденции в медицинской науке и ряд других, в то же время, определенные институциональные факторы тормозят развитие рынка, в частности, связанные с нормативно-правовым регулированием, а также с взаимодействием участников рынка.

Ключевые слова: медицинская техника, рынок медицинской техники, факторы формирования, особенности рынка техники, условия повышенной неопределенности.

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1. Introduction

According to a UN study (Population Prospects, 2019)1, global life expectancy will increase to 77.1 years by 2050. The fastest-growing age group is rightly considered to be people over 65 years old. Notably, 1 in 6 people in the world will be over 65 years old (16%), compared to 1 in 11 in 2019 (9%). This trend will inevitably lead to an increase in the need for medical care and solutions to several social and medical problems, such as the search for additional medical personnel, the expansion of funding for the social and healthcare sectors, and the creation and development of new programmes to promote a healthy lifestyle among the population. With the ageing of the population, medical equipment is required to provide ambulance and care in the hospital while diagnostic equipment needs to be improved.

The projection of the global demographic trend onto the Russian Federation unearths a galaxy of problems. For example, older people experience difficulties in obtaining medical care, thereby highlighting the insufficient level of its availability. The impossibility of obtaining expert advice due to such reasons as low mobility, the presence of queues, and the complicated "path" to a narrow specialist leads to the fact that older people (especially those over 75 years old) with health conditions in Russia seek advice less and less. According to experts, it is possible to develop remote consultations (such as telemedicine), which, of course, requires solving the issue from the point of view of medical technology. A separate area is technical equipment, taking into account advanced innovative developments in geriatric care (outpatient and inpatient), as well as the development of technical means for the rehabilitation of the disabled.

The active use of innovations allows the global medical equipment market to develop, even under conditions of strict government regulation. The innovative development of medical equipment is associated with both the use of advanced technologies and the creation of new medical products that allow for solving existing problems on a fundamentally new basis, and recognised world manufacturers are actively using this in their activities. For example, Philips uses new technological solutions in its manufactured devices for ultrasound diagnostics, computed tomography, and magnetic resonance imaging, which allow for more accurate diagnostics due to enhanced image quality. Experts have also noted an increase in the number of permits issued for domestic medical equipment based on innovative principles of operation.

The final assessment of the quality of medical equipment can be given by direct users—and patients and people who take care of their health and doctors working in various sectors of the economy (physical culture and sports, social services, spa services, etc.). Therefore, an important aspect is not only the quality of the medical equipment itself but also its service and after-sales service. Timely prevention of failures in the operation of equipment and maintenance allows medical institutions to avoid equipment replacement and increase their service life; therefore, offering technical support during operation increases the competitiveness of medical equipment manufacturers.

The relevance of the chosen topic lies in the fact that medical technology is associated with all aspects of ensuring a high level of healthcare: diagnosis, treatment, disease prevention, and rehabilitation. The duration of a healthy life for the population depends on high-tech care, which is determined by innovative trends in medical technology. The aggravation of sanctions changes, the emerging need for import substitution, and fiercer competition with international corporations have complicated the development of the Russian medical equipment market.

The purpose of this article is to characterise the medical equipment market in the Russian Federation, identifying the factors of its formation and features.

Currently, there are two trends in the development of the medical industry, which are reflected in the development of the medical equipment market. One direction is the strengthening consolidation of major market players joining long-term partnerships with enterprises operating in the fields of gene, in-

[1] Population Prospects 2019: Highlights. United Nations: website. URL: https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf (accessed 23/04/2020)

formation, and biological technologies. When entering the markets of other countries (especially developing countries), such companies usually buy local producers to facilitate entry into the national market. The second direction in the development of medical industry enterprises is the division of functional components of activities based on the principles of outsourcing. A number of major players in the medical equipment market leave only the most significant departments (research & development [R&D], marketing, and strategic management) within their own company and transfer functions such as testing, direct production, distribution, promotion, and service to specialised companies.

Further, the number of assembly plants and even development departments in other countries is growing, which erases the national identity of companies and leads to a global division of labour. To produce healthcare products, which are served by the medical and pharmaceutical industries of various countries, the global market is moving towards maximum openness in the field of information exchange and regulation. Separate protectionist measures protect specific developments in a limited area, and finished products are typically not the ones that become innovative but production technology (Melnichenko, 2018; Treshchevsky and Litovkin, 2018).

2. Methods and Materials

The study uses modern general scientific methods: content analysis of modern and domestic scientific literature, synthesis method, and systematisation method. The theoretical basis of the study is made up of articles by domestic and foreign researchers in the fields of healthcare, medical equipment, the world state of the medical equipment market, personalised medicine, telemedicine, and statistical collections. The study analysis the state of the medical equipment market of the Russian Federation and identifies the features of its development and the factors that contribute to and hinder its development. Thus, a diagram that clearly illustrates the confrontation of factors, and a systematising table that reveals the essence of each factor are presented. Factors that hinder the medical industry have been identified based on the strategy for the development of the Russian Federation's medical industry for the period up to 2030.

3. Results and Discussion

We highlight the specific features of the Russian medical equipment market, characteristic of the current stage of development of the socioeconomic system.

1. High level of influence of political risks. These types of risks form a poorly predictable and unfavourable external environment for the functioning of the medical equipment market. The political risks associated with the sanctions policy can significantly worsen the conditions for technical support and maintenance of medical equipment with regard to components manufactured outside the Russian Federation. In addition, these risks may prevent domestic producers from entering foreign markets. The influence of political risks exacerbates the problem of the country's economic security, which makes it necessary to take protectionist measures in relation to the domestic market.

2. The significant impact of the level of development. The medical equipment market affects the quality and efficiency of the healthcare system, and therefore the quality of life of the population, which underscores the high social significance of supporting domestic manufacturers.

3. Regional differentiation of needs for medical equipment. This is due to the different material and technical bases of state medical institutions, as well as differences in the effective demand of the population, which affects the development of private medical organisations and the range of services they offer.

4. The key role of the state. As a consumer of medical equipment, the state's function is associated with the peculiarities of the organisation of the state healthcare system and compulsory medical insurance.

5. A significant level of competition from foreign manufacturers. Players with significantly

greater financial strength can actively penetrate transnational corporations into the domestic market. In some cases, competition is unfair when domestic developments are called into question for political and economic reasons in the struggle for sales markets.

6. Growth in demand for specific types of medical equipment. For example, the COVID-19 pandemic drove the demand for specific equipment, with a relative decrease in demand for other types of equipment. The biggest increase was in the demand for equipment for laboratory analysis and resuscitation equipment. Despite a slight drop, according to experts, a full recovery of the market in terms of volume was expected by the end of 2021, and furthers expansion was predicted. In general, the pandemic has made health care a key concern for everyone, which may increase demand not only from medical institutions but also from private consumers who want to independently control their basic level of health.

7. Large amounts of state participation. The state financially supports medical equipment manufacturers associated with the implementation of national projects. The implementation of the national healthcare project is focused, among other things, on the re-equipment of medical institutions, which contributes to an increase in demand for medical equipment. For example, "in the last three years alone, the market for medical equipment and products in Russia has grown by about 32%, which is due to the high demand for innovative and high-tech medical care, improving the quality of healthcare services".

8. Low share of the domestic market of medical equipment on a global scale (according to the most optimistic estimates, less than 2%). The volume of sales of imported equipment in rubles on the domestic market is almost four times higher than the volume of sales of domestic equipment. This figure slightly decreased in 2020.

9. Potentially high market capacity. This occurs because existing equipment causes user dissatisfaction and needs to be replaced. According to a survey conducted among doctors in 2020 by the Doctors of the Russian Federation Organization, over 30% of those surveyed said that they were constantly dissatisfied with the quality of the equipment they had to work with, and over 20% more—from time to time.

10. Urgent need to introduce innovations. This forms the basis for increasing the competitiveness of domestic producers. However, the realisation of this need is possible only with active state participation and the development of the appropriate infrastructure.

Based on the characteristic features of the Russian medical equipment market, we highlight the features of its formation below (Iashin, 2016; Iashin, 2017).

First, the Russian medical equipment market under conditions of an unstable exchange rate is characterised by a lack of funding for the purchase of modern imported equipment and components for production. The situation during the COVID-19 pandemic showed that with the effective organisation of activities, medical industry enterprises can quickly launch the production of medical products (masks, disinfectant solutions, etc.). However, the production of competitive, innovative medical equipment cannot be established in a short time, as this requires significant time and financial investments. Moreover, the need to obtain registration certificates increases the period required to obtain a return on investment.

Second, a feature of the Russian medical equipment market is the high importance of the state as the main consumer. Despite the adoption of the Decree of the Government of the Russian Federation, which limits participation in the public procurement of foreign goods, over 62% of domestic producers did not notice a difference in demand (Decree of the Government of the Russian Federation of February 5, 2015)2. At the same time, in conditions of a state budget deficit, there may be problems with financing public procurement, which will lead to unstable demand and a lack of working capital for producers (Treshchevsky et al., 2016).

Based on the presented theses, it can be concluded that the export potential of Russian medical

[2] Decree of the Government of the Russian Federation of February 5, 2015 No. 102 (as amended on June 30, 2020) "On restrictions and conditions for the admission of certain types of medical devices originating from foreign countries for the purposes of procurement for state and municipal needs"

equipment has not yet been realised. The inability to compete with the developed distribution system of global manufacturers of well-known brands of medical equipment significantly complicates the export of domestic products. The lack of international registration for Russian medical equipment results in additional time and financial costs.

The following are considered factors contributing to the development of the market for innovative medical equipment in the Russian Federation:

1. The main factor in the growth of the medical equipment market in the Russian Federation can be considered an increase in healthcare financing, both from the state budget within the framework of state policy and from private healthcare organisations. In state programmes for the development of medicine, great attention is paid to raising the level of technical equipment of state medical institutions, from specialised high-tech scientific and medical centres to medical organisations at the local level.

2. The expansion of state guarantees for the provision of quality medical care leads to the development and approval of standards and procedures for the provision of medical care. Maintaining a high level of medical services and compliance with the procedures for the provision of medical care requires large expenditures on the material and technical equipment of healthcare institutions. In this situation, a significant increase in the demand for medical devices in general and medical equipment in particular is required. Due to the existing inequality in the availability of medical care in different regions, in some cases, a sharp increase in the need for medical equipment is required.

3. Development of high-tech medical care based on the use of "complex and (or) unique methods of treatment, as well as resource-intensive methods of treatment with scientifically proven effectiveness, including cell technologies, robotic technology, information technology and genetic engineering methods developed on the basis of the achievements of medical science and related branches of science and technology" (Federal Law No. 323-FZ, "On the Fundamentals of Protecting the Health of Citizens in the Federation")3, leads to the need to provide medical organisations with innovative medical equipment as the basis for the provision of medical services. The provision of high-tech medical care places special demands on the quality of the medical equipment used, often designed specifically for the implementation of a particular method or technology, which provokes the growth of an innovative segment in the medical equipment market.

4. Growth in life expectancy and gradual recovery from the demographic collapse of the 1990s lead to an objective need for an increase in demand for medical equipment due to an increase in the number of clients of medical organisations.

5. An increase in the standard of living of the population leads to an increase in the cost of health-saving measures, which are an important part of maintaining a healthy lifestyle, attractive appearance, and quality of life in general. Investments in one's own health, including the use of medical equipment, are becoming a factor in the growth in demand for equipment that allows for preventive, diagnostic, and rehabilitation procedures.

6. Expansion of the segment of private medicine both by increasing VHI (Voluntary Health Insurance) policies (especially corporate ones) and by increasing the share of treatment payments at the expense of compulsory medical insurance. For organisations of paid medicine, the constant updating of medical equipment is an important factor in ensuring competitiveness. The largest private medical companies recorded a significant increase in the share of services under the compulsory medical insurance policy. In 2018, more than a third of private clinics accepted the compulsory medical insurance policy for payment. The share of such services can be a quarter in total revenue, and for some services (for example, IVF) in a number of organisations, more than half are paid for by compulsory health insurance (Morozova, 2020)4.

[3] Federal Law No. 323-FZ of November 21, 2011 (as amended on July 31, 2020) "On the Fundamentals of Protecting the Health of Citizens in the Federation" (as amended and supplemented, effective from September 1, 2020)

[4] Morozova T. The largest private clinics are growing thanks to compulsory medical insurance. Newspaper Vedomosti: site. URL: https://www.vedomosti.ru/business/articles/2019/09/02/810270-krupneishie-kliniki-rastut (accessed 04/21/2020).

7. The development of telemedicine and remote monitoring systems requires the development of comprehensive proposals for the medical equipment market, combining medical equipment with telecommunication systems and specialised software.

8. An increase in the home medicine sector, leading to an increase in demand for medical technology products that allow:

- Maintaining an acceptable quality of life for difficult-to-transport patients.

- Carrying out diagnostic and rehabilitation measures independently.

- Saving personal time and the doctor's time for visits to a medical organisation.

- Monitoring the condition of both healthy and sick people.

9. The development of personalised medicine requires modern clinical diagnostic equipment to identify the characteristics of a client's health and to identify individual risk factors for each patient.

10. The development of medicine through the active use of innovative technologies and devices is expected to lead to the predicted growth of the market for innovative medical equipment. The development of modern technologies in medicine itself, as well as in biochemistry, electronics, and materials science, especially in the context of emerging Industry 4.0, increases the growth rate of the medical device market.

11. Macroeconomic factors determine the dynamics of the market in monetary and physical terms. Fluctuations in the exchange rate of the national currency directly affect the purchasing power of legal entities and individuals to purchase medical equipment. However, the market may grow in monetary terms but decline in physical terms due to the unfavourable exchange rate of the ruble, which reduces the correctness of comparisons of time indicators.

12. State regulation of the medical industry, given its social significance, is carried out at all stages of value creation, but special attention is paid to controlling the production of medical equipment. In leading countries, such control is carried out by a separate supervisory body.

In what follows, we consider the factors hindering the development of the medical equipment market in the Russian Federation. Even in the "Strategy for the development of the medical industry of the Russian Federation for the period up to 2020" (Order of the Ministry of Industry and Trade of Russia dated January 31, 2013 No. 118 "On approval of the Strategy for the development of the medical industry of the Russian Federation for the period up to 2020"), the main shortcomings hindering the development of the medical products market were identified:

- Technological backwardness and moral obsolescence of products;

- Weak innovative activity;

- Closed industry and weak integration into international markets".

In the draft "Strategy for the development of the medical industry of the Russian Federation for the period up to 2030" (2018)5, systemic problems of industry development are considered for the first time in relation to the life cycle of medical products. Among the main problems are the following:

Lack of communication between manufacturers and consumers in terms of determining priority areas for development and understanding current market needs;

Financial constraints of small and medium-sized businesses do not allow regular investment in research and development;

Prohibition of access of unregistered products to the trial operation process;

[5] The project "Strategy for the development of the medical industry of the Russian Federation for the period up to 2030". Media project "GXP News": site. URL: https://gxpnews.net/2018/08/minpromtorg-razrabotal-strategiyu-razvitiya-medpromyshlennosti-na-period-do-2030-goda/ (Accessed 17.02.2020)

Underdeveloped infrastructure and services market for research and testing of medical devices;

Low level of interaction between the educational infrastructure, institutions involved in fundamental science, applied science, and manufacturers seeking to use actual physical and chemical solutions in production;

High cost of equipment for the production of medical devices;

High level of import dependence in components;

Duration of registration of medical devices;

The need for a new registration when making even minor changes;

Uneven and unstable demand from the public sector

The inability of manufacturers to provide services for the integrated equipment of medical institutions;

Shortage of qualified personnel capable of solving the problems of creating new products and organising modern production in the medical industry (Order of the Ministry of Industry and Trade of Russia dated January 31, 2013 No. 118 "On approval of the strategy for the development of the medical industry of the Russian Federation for the period up to 2020")6.

Table 1 presents the factors that contribute to and hinder the development of the market for innovative medical equipment.

Table 1. Factors influencing the development of the market for innovative medical equipment

Factors affecting the development of the market	Direction of influence
Increased funding for health care both from the state budget within the framework of state policy (national projects and programs in the field of health care and demography), and from private medical organisations.	Growth of financial opportunities for the production of innovative equipment that requires significant costs
Expansion of state guarantees for the provision of quality medical care, development and approval of standards and procedures for the provision of medical care	Growth in the need for material and technical re-equipment of healthcare institutions and the acquisition of advanced medical equipment
Development of high-tech medical care	Growing demand for innovative medical equipment based on the achievements of medical science, growing requirements for the quality of medical equipment and its maintenance
Increase in life expectancy, gradual recovery from the demographic collapse of the 1990s, increase in the share of the elderly population	Increasing the number of patients, including those in need of innovative treatment methods in medical institutions and at home
Growing needs of the population in maintaining a healthy lifestyle, attractive appearance, leading to a willingness to pay for health savings	Growing demand of service organisations for equipment that allows for preventive, diagnostic and rehabilitation procedures (including innovative technologies in the beauty industry), growing demand for household medical devices
Expansion of the segment of private medicine both by increasing VHI policies (especially corporate ones) and by increasing the share of payment for treatment at the expense of compulsory medical insurance.	Growth in demand for innovative medical equipment from commercial medicine organisations, for which the constant updating of medical equipment is an important factor in ensuring competitiveness
Development of telemedicine and remote monitoring systems	Growing demand for comprehensive offerings that combine medical technology with telecommunications systems and specialised software

[6] Order of the Ministry of Industry and Trade of Russia dated January 31, 2013 No. 118 "On approval of the Strategy for the development of the medical industry of the Russian Federation for the period up to 2020".

Increasing the home medicine Sector	Growth in demand for medical equipment products that allows for: - Maintain an acceptable quality of life for difficult-to-transport patients; - Carrying out diagnostic and rehabilitation measures independently; - Saving personal time and the doctor's time for visits to a medical organisation; - Monitoring the condition of both healthy and sick people.
The development of personalised medicine	Growing demand for modern clinical diagnostic equipment to identify the client's health characteristics and individual risk factors
The development of modern technologies in medical science, as well as in biochemistry, electronics, materials science, especially in the context of the emerging Industry 4.0 and the deployment of digitalisation processes	Increasing the growth rate of the market of innovative medical equipment due to the emergence of new technologies and scientific knowledge, for which the commercialisation of innovations is possible
High level of state control at all stages of value creation, including a lengthy registration procedure for new products	Slowdown in the production of innovative medical equipment due to bureaucratisation
Imperfection of the current public procurement mechanism	Slowdown in the production of the innovative medical equipment due to bureaucratisation, inefficient choice of manufacturers
Low level of interaction between the educational infrastructure, institutions involved in fundamental science, applied science, and manufacturers	Lagging behind the world's leading manufacturers in terms of commercialisation of innovations
Inconsistency of existing federal laws, GOSTs, classifiers, lack of comparability with world practice	Limitation of interactions with foreign partners, difficulty in obtaining state support for manufacturers
Adverse changes in the external environment associated with the sanctions policy	Restriction of access to cutting-edge medical technology
Shortage of qualified personnel in the field of creation and operation of innovative technology	Slowdown of innovation processes among manufacturers of medical equipment, decrease in demand from medical organisations due to the lack of personnel to work on modern equipment

For the development of the medical equipment market in the Russian Federation, it is necessary to highlight a number of principles, the main of which are (Ozhgikhin, 2020). The principle of cost reduction is based on the increasing use of disposable devices and tools, as well as the use of new materials. The growth in disposables reduces the cost of sterilisation and eliminates nosocomial infections, the consequences of which can be very costly. New materials, especially polymers, make it possible to create equipment with improved properties as well as fundamentally new products, such as 3D-printed prostheses. Resource conservation is closely related to cost reduction but includes cheaper production and a fundamentally new approach to the use of resources for production by reducing material consumption. The use of recycling materials (where appropriate), weight reduction through the transition to new materials, and product design based on computer simulation (Rodionov and Alferyev, 2020) can reduce resource consumption without compromising product quality.

Further, the optimisation of the nomenclature based on the unification of products and a focus on expanding the functions of complex instruments and apparatus based on the needs of users make it possible to avoid the release of products that are not in demand among consumers. Reducing the duration of the production cycle leads to a faster practical application of innovative materials and technologies in medical technology, which ultimately improves the quality of medical care. The widespread use of digital technologies and the active use of the achievements of biology, pharmaceuticals, radiology, materials science (including nanomaterials), and other sciences significantly increase the possibility of manufacturing medical products with desired properties at the request of the client in a short time. Localisation of production based on import substitution is significant for our country for high-tech equipment and consumables (syringes, catheters, etc.), the total consumption of which is very significant. In recent years, active work has been carried out to organise the production of medical equipment in the Russian Federation, but it is almost impossible to completely eliminate the import of medical devices.

Lastly, the principle of the priority production of innovative medical equipment consists of the possibility of realising the national scientific and technological potential in the production of medical devices precisely through the production of innovative medical equipment, which allows practical application of the advanced achievements of medicine and technology and entry into the global market for the sale of products with high added value (Gorovoy and Zueva, 2018).

In this study, the study of the essence of factors in the formation of conditions for the development of the medical industry market led to the conclusion that the undeveloped infrastructure and the market for services for research and testing hinder development in many respects: lack of qualified personnel, lack of communication between consumers and manufacturers, and low interaction with educational infrastructure. The need to introduce innovative technologies is accompanied by an increase in financial costs, which helps to strengthen the development vector of personalised medicine and telemedicine. However, the introduction of innovation is hindered by bureaucracy, particularly the length of registration of medical devices, which is required for each product, even with the slightest change.

By systematising all the theses above, we formulate a visual scheme that reflects the confrontation between the factors of the medical equipment market (Figure 1).

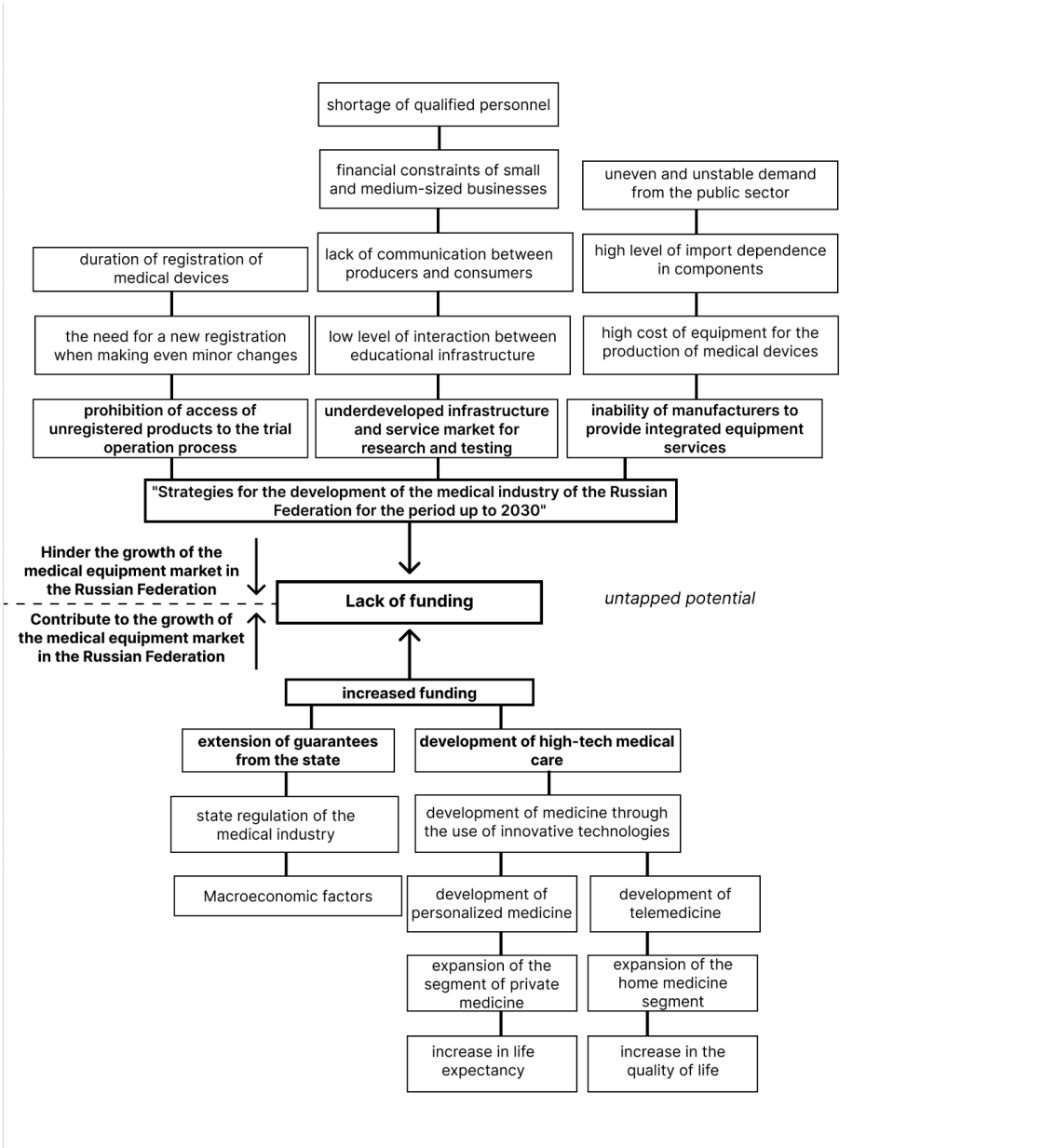

Figure 1. Confrontation between the factors of the medical equipment market

4. Conclusion

In this study, an analysis of the medical equipment market of the Russian Federation was carried out, and specific features and principles were identified. As part of the work, the essence of the factors that hinder and promote market growth was revealed, and the principles that need to be considered in forming the development vector were listed. A summary of the analysis is as follows:

1. Specific features of the Russian medical equipment market:

The negative impact of macroeconomic factors, which result in a high level of political risks, non-competitiveness of domestic goods, and its low share in the world market.

Urgent need to introduce innovations to increase competitiveness. Moreover, the medical staff personnel are not satisfied with the quality of the work equipment.

Growth in demand for specific types of equipment and potentially high market capacity.

2. Based on the characteristics of the market of the Russian Federation, the following features have been formed: turbulent conditions of the past few years and the high role of the state in the medical healthcare system caused by the implementation of national projects.

3. Key factors hindering the development of the medical equipment market:

Restriction of access to advanced achievements in the field of medical technology in connection with the sanctions policy towards the Russian Federation;

The bureaucratic nature of the health care system;

Low level of interaction between the educational infrastructure, institutions involved in basic science, applied science and manufacturers.

4. Key factors that contribute to the development of the medical equipment market

Developing modern technologies in medical science;

Developing personalised medicine and telemedicine;

Developing modern technologies in medical science;

Developing personalised medicine and telemedicine;

Increasing health financing;

Trending towards higher quality of life and longer life.

The analysis of the consequences resulted in identifying key principles for consideration in the development of the medical equipment market in Russia: cost reduction, resource saving, optimisation of the range, reduction of the duration of the production cycle, localisation of production based on import substitution, and priority production of innovative medical equipment.

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