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RUSSIAN PHARMACEUTICAL MARKET 2022

GROUP DSM

Introductory remarks

Sergey Shulyak
General Director DSM GROUP

Dear colleagues!

When you have so many things to do and so many events to follow, I don't want you to waste your valuable time reading the foreword; it would be better to spend it reading the annual report itself.

Everything that is happening has been succinctly described by our famous politician Viktor Chernomyrdin:

"IT'S NEVER HAPPENED BEFORE,
AND NOW IT'S HAPPENING AGAIN!"

This is our pharmaceutical market and we will be working here. The strong will be stronger, so let everyone be strong!

Best wishes for success and prosperity from Truth Street!

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Results of 2022

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Summary

Coronavirus-related events and activities have taken a back seat to the political events of 2022. The Russian consumer protection watchdog Rospotrebnadzor lifted all Covid-19 restrictions only on July 1, 2022. Social distancing and wearing masks and gloves are no longer necessary. Although the virus continues to evolve and new strains emerge, the prevalence is not as high and the incidence remains low. In January 2023, for example, the official number of people infected with Covid-19 in Russia was the lowest since July 2022, and 10 times lower than in January 2022.

We have been living in a pandemic for exactly three years (the first cases of Covid-19 infection were detected in Russia on January 31, 2020). In that time, according to the Johns Hopkins Institute, more than 670 million cases of Covid-19 have been reported worldwide, and the virus has claimed nearly 7 million lives. So far, the WHO has maintained the pandemic status of the disease, which means that more than half of the world's countries are still affected.

During this time, manufacturers have focused their efforts on developing vaccines against Covid-19, drugs to treat the disease and now to combat its effects. And it is probably a good thing that our industry is socially oriented, because the sanctions related to political events have had no direct impact on the availability of drugs to people, but rather indirect effects.

The main challenge that market participants had to face was logistical. The ban on air travel between Russia, the EU and the US, the refusal to book shipping container lines and the ban on Russian and Belarusian hauliers entering the EU meant that manufacturers not only had to find alternative means of supplying drugs and substances to Russia, but also had to change suppliers of the ingredients needed to make medicines. There have been some unexpected challenges related to the reliance on imports, such as reported shortages of packaging cartons, vials and caps, and interruptions in the supply of chromatography media and columns, which are essential for drug analysis. All these difficulties have been solved by importing similar products from China and other countries that have not imposed sanctions on Russia. As a result, some prices increased, in some cases more research was needed to prove that the product was similar to the previous one, and registration certificates had to be amended accordingly.

A major problem was the lack of drug reference standards in Russia for most drugs developed in the US and EU: these are needed to check each batch of a replicated drug and used to be purchased abroad. To solve this problem, a special programme to create a bank of pharmaceutical reference standards was set up and funded (first stage – 300 million roubles). By December 2022, Russian companies had already created around 150 reference standards for the Russian pharmaceutical industry. The plan is to double this number to 300 by the summer of 2023. A total of 3,000 reference standards are required to produce VEDs.

In general, the pharmaceutical industry has not been left without government support. A number of laws and decrees were quickly adopted to prevent possible shortages of drugs due to the imposition of economic sanctions .

The size of the pharmaceutical market in Russia in 2022 was 2,573 billion roubles (excluding Covid-19 vaccines), which is 11.9% higher than in 2021. Volume sales of drugs fell by 6% to 5.2 billion packages. For the second year in a row, the market is growing at a double-digit rate. Previously, growth was driven by government procurement of drugs, but in 2022 the stronger growth came from pharmacy sales.

In 2021, the market showed a strong positive trend in dollars and euros. In 2022, sales in dollars were $37.8 billion, up 21% from the previous year. In euros, market growth is significantly higher, +37%, with total sales exceeding €36 billion.

The total market share of imported drugs in 2022 was 55.5% in roubles and 32.3% in packages. The combined share of the top 20 manufacturers in 2022 was 46.8%. Foreign companies Bayer, Novartis and Sanofi remain in the top positions at year-end 2022. But now there are six Russian companies in the ranking, up from four last year.

The public sector accounts for 40% of the pharmaceutical market. In 2022, it was 2% lower. In 2022, the largest increase was in the drug purchases under the Regional Drug Reimbursement Programmes, which rose by 28%. The growth was driven by orphan drugs, which accounted for 64 billion roubles out of a total of 183 billion roubles. Some of these drugs will now be purchased through regional benefit programmes due to cuts in the federal budget. Federal benefits were 9% higher than a year earlier. Hospital purchases increased by only 1%. A decrease in the incidence of coronavirus infection has led to a decrease in tenders for drugs recommended for the treatment of Covid-19.

Value sales of drugs in pharmacies increased by 15% compared to the previous year. The situation in the commercial segment in 2022 had different growth drivers. In January-February it was Covid-19, in March it was panic buying, mainly of expensive imported drugs for systemic use, in April-May it was the impact of high inflation in March, and in November-December it was higher incidence of influenza and acute respiratory viral infection. At year-end 2022, the size of the commercial pharmaceutical market was about 4.5 billion packages, or 1,350 billion roubles.

Pharmacy sales of parapharmaceuticals increased by 12.6% to 327 billion roubles. All groups (except repellents) showed growth in roubles. Hygiene products, medical devices and dietary supplements grew the most (over 20%).

At the beginning of 2023, there were 70,400 pharmacies in Russia, almost 4,000 more than at the beginning of 2022. The pharmacy business continues to be attractive and a record number of pharmacies were opened during the year. Such a high rate of growth in outlets has not been seen in the entire monitoring period: the previous maximum was in 2018, with around 3,000 new pharmacies.

Another significant development for the market was the emergence of a chain of more than 5,000 pharmacies (previously only marketing associations had so many members). The Aprel pharmacy chain had 5,372 stores at the end of the year. During the year, 2,300 new pharmacies were added to the chain. This chain became the leader in volume growth. However, Aprel is in second place in terms of value sales.

The leader in the pharmacy ranking is the Rigla chain with a share of 8.0%. Among the marketing associations, ASNA is still in the lead with 17,000 members and a 15.8% share of the total pharmacy market.

Pharmacy eCom sales in 2022 were approximately 194.3 billion roubles (drugs and parapharmaceuticals combined), accounting for

11.6% of the pharmacy market. While sales growth in the market as a whole was around 15%, online sales were 54% higher than in 2021. The Apteka.ru service remains the leader among websites used by consumers to order pharmacy products – its share is 38%.

Distributor reshuffles continue. In 2022, the top spot was retained by the distributor Pulse with 14.2%. The distributor Protek moved up to second place with a share of 13.3%. The distributor Katren rounds out the top 3 with a 13.1% share. While the ranking in the commercial segment is in line with the overall market, the public segment is dominated by other companies: R-Pharm, Irwin 2, BSS.

Under uncertainty, accurate forecasts are more difficult to make. We believe that the market size could grow between 4% and 8% in 2023, depending on the events that may prevail in the market: these include lower purchasing power of people, an increased share of domestic manufacturers (negative factors), a shift in demand towards more expensive drugs, offsetting increases in drug prices due to events that occurred in 2022, and a general increase in the incidence of major disease classes (positive factors). The total pharmaceutical market could exceed 2.7 trillion roubles, but sales in packages are unlikely to grow.

1. Volume of the Russian pharmaceutical market

Once again, results of the year 2022 showed that they highly depended on external factors which played an increasingly dominant role in determining the dynamics of the changing pharmaceutical market. Consequently, the role of the government, as well as timely and appropriate support provided by it, are getting more and more important.

This problem turned especially acute after the sanctions pressure had risen in late February 2022: the government took a set of measures to support the pharmaceutical industry (primarily, the manufacturers) and prevent any possible shortage of drugs caused by imposed economic sanctions.

The first of such documents was a bill approved in early March that concerned support measures for Russian pharmaceutical manufacturers and contained several clauses:

- The rules for calculating the cost of drugs, that were put on the Vital and Essential Medical Product List and were at risk of shortage or were intended for mitigating emergency situations, were extended to include cases of "changes in the exchange rate of a foreign currency." So, if production of any drug becomes unprofitable as a result of a growing exchange rate, it is believed to be a good reason for registering a new higher price for this drug.
- It is permitted to use the "simplified scheme" for registration of drugs which may leave the market due to the economic restrictions introduced for the Russian Federation (before that this scheme covered only medicines intended for emergency situations or prevention and treatment of diseases dangerous to the public). According to the decree such drugs must be registered within no more than 5 business days. The Government of the Russian Federation approved decree No. 2141 (as of 25.11.2022) saying that since 2023 the simplified procedure for licensing production of medicines would apply on a continuing basis.
- The first medicine registered by this accelerated procedure was a drug biosimilar to Keytruda by MSD. Biocad registered a drug under the brand name of Pembroria.
- The new government decree allows to take in emergency situations medicines for indications not included in the directions for use if it is necessary for studying their efficacy as part of preventive and healthcare measures. These powers will be given to medical organizations put on the list prepared by the Ministry of Health.
- The government has facilitated the procedure for changing registration dossiers that have already been issued. If manufacturers need to change substance or excipient suppliers specified in documents, and change packaging manufacturers or the produced batch size, they can do it without any quality evaluation which is mandatory in case of any "common" change in the registration dossier.

Several adopted decrees deal with imported medicines and are aimed at preventing their shortage:

- It was permitted to import drugs in foreign packaging until the end of the year 2024. In other words, the "parallel import" of drugs in packages labelled in a foreign language became legal. But each package must bear directions for use translated into the Russian language and approved by the authorized body in the country of manufacture. For example, such a permit was received by Servier for importing Oncaspar (pegaspargase).

- It is allowed to release for circulation and import drugs not registered in the Russian Federation until December 31, 2023, if the drug of the batch (lot) has INN analogues registered in the Russian Federation and is permitted for medical use in foreign countries by authorized bodies of such countries.
- The issue of regulation in the field of development and registration of innovative drugs was addressed individually. The Ministry of Health of Russia allowed to have foreign innovative drugs registered without clinical studies in Russia provided that Russian supervisors were admitted to production sites. It was also suggested that the notion of innovative drugs should be included in the legislation and that they should be defined as drugs "of particular importance for the health of the population."

A special inter-agency commission whose activities were approved by order No. 339н of the Ministry of Health of Russia as of 19.05.2022 was established to determine any shortage. The work of the commission resulted in a list of drugs that were either in short supply or at risk of shortage. The list contained 97 items — 88 INNs with various dosages or forms. The number of issued permits was as follows:

- for accelerated registration — 44 permits;
- for introduction of changes under a shortened procedure — 79 permits;
- for circulation of a batch (lot) of a drug in Russia in foreign packaging — 11 permits;
- for temporary circulation of a batch (lot) of a drug not registered in Russia — 7 permits.

The selected drugs account for about 6.7% in value terms of the pharmaceutical market (140 billion roubles) and about 14.2% in packages (649 million packages). While public procurement of drugs prevails in terms of roubles (54%), more drugs are purchased by consumers at pharmacies in terms of packages (88%).

Among other items the list includes "traditional" drugs, such as "Paracetamol" or "Activated charcoal". It is also a result of possible disruptions in the supply of substances necessary for Russian companies to manufacture finished medicines.

All in all, in 2022 manufacturers and distributors had to solve mostly logistical problems to secure uninterrupted supplies of drugs to the Russian market. Companies had also to build new supply chains and look for alternative suppliers of substances and components required for production of medicines. It is worth mentioning that the overall "reorganization" was quite rapid and did not lead to any noticeable deficiency in drugs. Of course, there were momentary shortage surges for several drugs, but they were smoothed out either by analogues or expected supplies.

In addition to the legal support for manufacturers, a financial support mechanism was developed. In April the Russian Government launched a special programme: the key system-forming companies of the pharmaceutical industry, distributors and pharmacy chains received additional funding from the government in the form of bank guarantees granted to these organizations at a reduced fee rate. The bank guarantees are intended for settlements under contracts for the supply of drugs or medical products with deferred payments. If due to any circumstances companies cannot fulfil their contractual obligations, the supplier will get money from a credit institution which will later receive compensation from the government.

It should be noted that the general policy of the government has not changed after imposition of sanctions, but, quite the contrary, the selected development policy which has been aimed at import substitution in recent years has proven

Table 1

TOP 10 INNs on the list of drugs that are in short supply or that are at risk of shortage

__Note:__ The share is calculated based on the sales in 2022 in all segments (pharmacy sales and public procurement).

INN	Share, roubles	INN	Share, packages
Pembrolizumab	15.9%	Ibuprofen	13.7%
Nivolumab	10.9%	Acetylsalicylic acid	12.4%
Human influenza vaccine [inactivated]	10.7%	Paracetamol	11.5%
Ibuprofen	10.0%	Peppermint leaf oil + phenobarbital + ethylbromisovalerinate	6.4%
Amoxicillin + [clavulanic acid]	4.7%	Hydrogen peroxide	5.9%
Trastuzumab	4.4%	Metamizole sodium	5.3%
Betamethasone	3.0%	Activated charcoal	5.0%
Glycyrrhizic acid + phospholipids	3.0%	Loperamide	4.6%
Human normal immunoglobulin	2.9%	Amoxicillin + [Clavulanic acid]	3.5%
Amoxicillin	2.9%	Iodine + [potassium iodide + ethanol]	3.3%

to be right. It has even been suggested that the following approach should be included in the Federal Law "On Industrial Policy in the Russian Federation": when procurement of any products is financed from the budget, priority must be given to Russian goods. Making access to public tenders more sophisticated for foreign drugs and medical products will render additional support to domestic production.

So, starting from August 31, 2021 the "one's company, two's none" principle, demanding to reject procurement applications for medical products manufactured outside the EEU if the tender contains an application for products manufactured in the EEU, has been applied to public purchases of certain medical products (ultrasound machines, lung ventilators and others). Moreover, at the end of 2021 the Russian Government considered whether it was possible to use the "one's company, two's none" principle for strategically important drugs. It was assumed that the principle would first apply to 15 INNs. In June 2022 the Russian Ministry of Industry and Trade suggested using the "one's company, two's none" principle for all strategically important drugs on the list approved by order of the Russian Government No. 1141-p as of 06.07.2010 (the latest revised version of 01.08.2020 contains 215 INNs). This initiative may become effective from September 1, 2024.

A programme supporting the manufacture of pharmaceutical ingredients will be launched in 2023. It will provide for subsidizing of rates on long-term loans intended for starting production of more than 145 pharmaceutical ingredients. More than 70% of APIs (100 out of 145 items) to be replaced are used for producing drugs on the VED list. The major part of the planned items is expected to be put into production by the end of 2024 – the beginning of 2025. The remaining items are scheduled to be released in 2027, by that time the patent protection period of drugs comprising them will expire. According to the Ministry of Industry and Trade, 12 investment projects of six companies, including Active Component, Polisintez and Promomed, are being considered.

Economic sanctions put into the background the impact the coronavirus pandemic had on the market. Despite that, if we compare the overall disease rate in 2022, it was higher than in 2021. According to the official statistics, there were about 11 million sick people in 2022, up from 7 million the year before. In other words, there was a 57% increase. However, it is worth mentioning that the highest number of COVID-19 cases was reported in the first quarter of 2022 (65% of the overall rate for the year were detected during this period) after the Omicron variant had spread. A localized coronavirus outbreak took place in August-September. During other months of the year the number of detected sick people remained minimum. The fatality rate from COVID-19 also significantly declined in 2022: the official statistics showed that there were only 85 thousand deaths with an officially confirmed diagnosis.

The Russian Population Census conducted between October and November 2021 estimated the population of the country at 147.2 million. In 2022 Rosstat recorded a decrease in the Russian population by 556 thousand during the year. As of January 1, 2023 the population of Russia was estimated at 146,424 thousand; as of January 1, 2022 it was estimated at 146,980 thousand. The last estimate was made "without the official statistical information on the Donetsk People's Republic (DPR), the Lugansk People's Republic (LPR), the Zaporozhye and Kherson regions."

The events which determined the development of the pharmaceutical market in 2022 also had an effect on its figures. Imposed sanctions had several negative results: increased prices for drugs and the panic buying of some groups of drugs which again changed the structure of consumption. These dynamics could do nothing but affect the overall consumption of drugs both in the public segment and pharmacy sales.

At the end of 2022, the market volume amounted to 2,573 billion roubles. The dynamics in money terms was at 11.9%. The market had been growing at double-digit rates for two consecutive years. But if the growth was previously driven by public procurement of drugs, in 2022 pharmacy sales gained the lead.

In dollars and in euros, in 2021 the market demonstrated high positive dynamics. As a result of the growth in rouble terms and the decrease in the average exchange rate for the year the market grew additionally. It should be noted that the temporary increase in the exchange rate in March 2022 had no adverse effect on the overall results. In dollars, the volume in 2022 was 37.8 billion dollars, which was 21% higher than a year before. In euros, the market dynamics were remarkably higher reaching +37%, and the total volume exceeded 36 billion euros.

In terms of packages, drug consumption remained negative. The market shrank in the commercial segment (-2%) as well. In the segment of public purchases, reduced supplies to healthcare institutions resulted in noticeable negative dynamics of about 25%. All in all, consumption of drugs in 2022 in volume terms dropped by 6% to come to 5.2 billion packages.

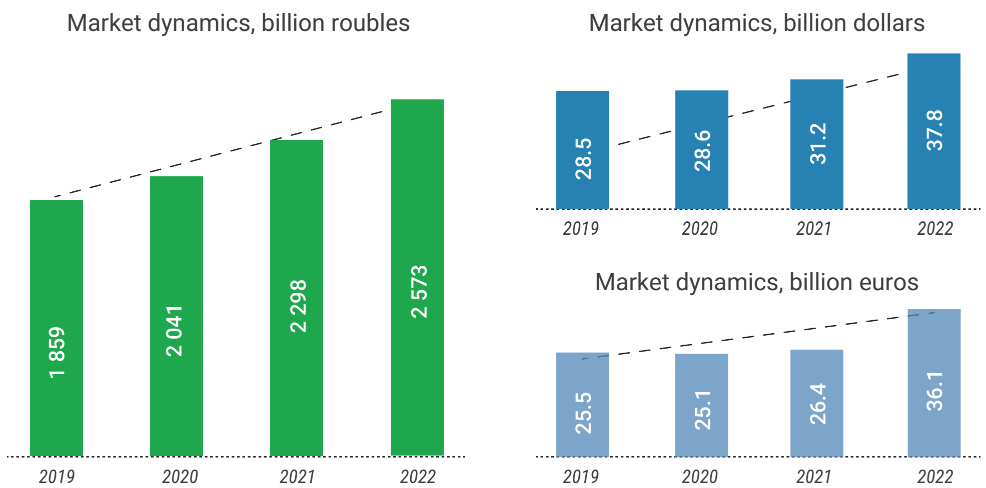
Figure 2 shows the dynamics of the volume of the Russian pharmaceutical market in 2021-2022 by segment.

The public sector - the publicly-funded market - hospital purchases, pharmaceutical benefits (including High-Cost ICD and Essential Drug Coverage programmes) and regional benefits — accounts for 40% of the drug market volume. In 2022 this figure went down by 2 percentage points.

The highest growth of 28% in 2022 was in the purchases of drugs as part of Regional Drug Reimbursement programmes (RDR). The growth was driven by orphan drugs accounting for 64 billion roubles in the total volume of 183 billion. A part of these drugs gets into the regional subsidized segment owing to reductions in federal budgets. Federal benefits were 9% higher than the year before.

Figure 1

Pharmaceutical market dynamics



Hospital purchases increased just by 1%. Reducing numbers of coronavirus cases resulted in fewer bids for medicines recommended for COVID-19 treatment. The volume dropped during the year by 22%. Funding for the Children Support Foundation "Krug Dobra" ("Circle of Kindness") was still increasing at a fast rate: in 2022 the value of purchased drugs amounted to 40 billion roubles.

In the commercial segment of drugs, there were various growth factors in 2022. From January to February it was COVID-19; March was marked by the panic buying of expensive imported drugs for systemic use; results of high inflation in March followed in April and May; in November and December the number of the flu and ARVI cases went up. However, the demand for "unseasonal" drugs reached the pandemic level and the sales rose at the average rate of 10%.

At the end of 2022, the commercial market for drugs accounted for around 4.5 billion packages, or 1,350 billion roubles. Compared to 2020, the volume of sales of drugs in packages shrank by 2%. In value terms, sales grew by 15% year on year.

Pharmacy sales of parapharmaceuticals increased by 12.6% to come to 327 billion roubles. All groups (except repellents) showed positive dynamics in roubles. The highest growth was observed in hygiene products, medical products and dietary supplements (more than 20%). However, in terms of packages, growth was noticed only in DS and MP groups.

Market in figures

At the end of 2022, imported drugs in the overall market accounted for 55.5% in roubles, and for 32.3% in packages. In volume terms, the market growth was negative both for made-in-Russia drugs (-6.8%) and foreign-made ones (-4.9%). In rouble terms, localized drugs went up by 8%, while imported ones - by 14.9%.

By the type of dispensing, the market structure changed towards prescription drugs. Rx drugs account for about 71% by value. Owing to lower prices, however, OTC drugs prevail in packages and account for 55%.

Vital and Essential Drugs (VED) are a list of drugs, approved by the Government of the

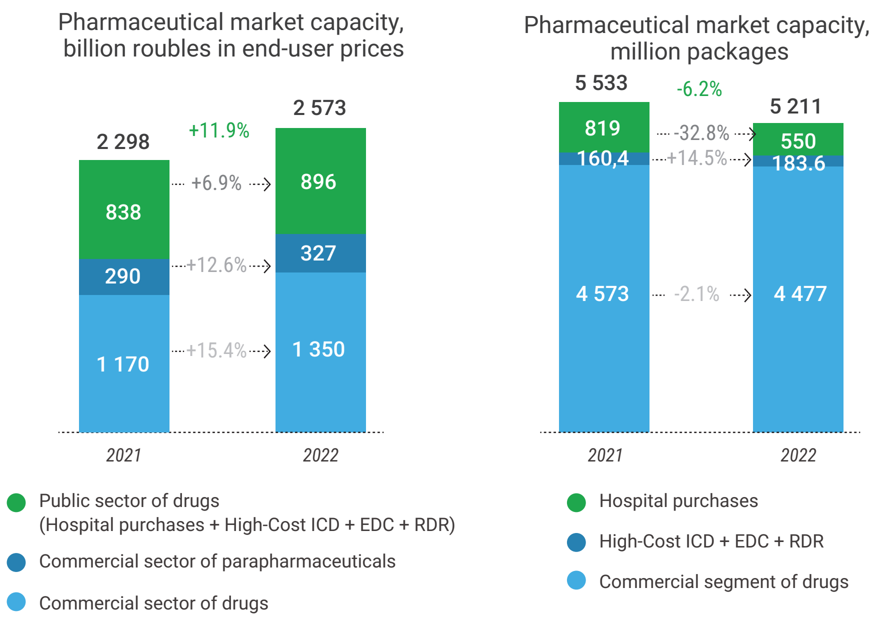


Figure 2

Pharmaceutical market capacity

Russian Federation for the state regulation of drug prices. The drugs on the list are reviewed every year. For this reason, its share may change under the influence of different factors. In 2022 the VED share in the market dropped from 64% to 61% in value terms, as the inflation rate for this group was almost "nil". In packages, VEDs account for 59% (-2% to 2021).

In 2022, the share of original drugs was 40% in value terms, and 13% in volume terms. As compared to 2021 the share grew a little as a result of increased funding in the public segment for procurement of expensive drugs.

The ATC rating in 2022 was headed by [L] Antineoplastic and Immunomodulating Agents, which included expensive drugs. Owing to the increased funding in the public segment, the consumption of drugs of this group grew: +9%. Dispensing of antineoplastic drugs is mainly funded by hospital purchases - 55%. But the share of this segment shrank by 3% following the shift to regional benefits (growth from 17% to 21%).

[A] Alimentary Tract and Metabolism remained in the second position, accounting for 14.4%. The main channel, through which drugs of this category are sold, is the pharmacy segment: 76% in terms of roubles come from purchases of drugs made by patients at their own expense.

[J] Antiinfectives for Systemic Use grew by 8% to come 3rd. Subgroup [J01] Antibacterials for Systemic Use went highly negative (-21%), but the demand for [J05] Antivirals for Systemic Use remained high (+26%)

A decline was observed only in three groups, including Group [B] Blood and Blood Forming Organs which dropped by 2% and, as a result, moved down to the 5th position. Group [C] regained the fourth position.

Figure 3

Market structure, various segments, 2022

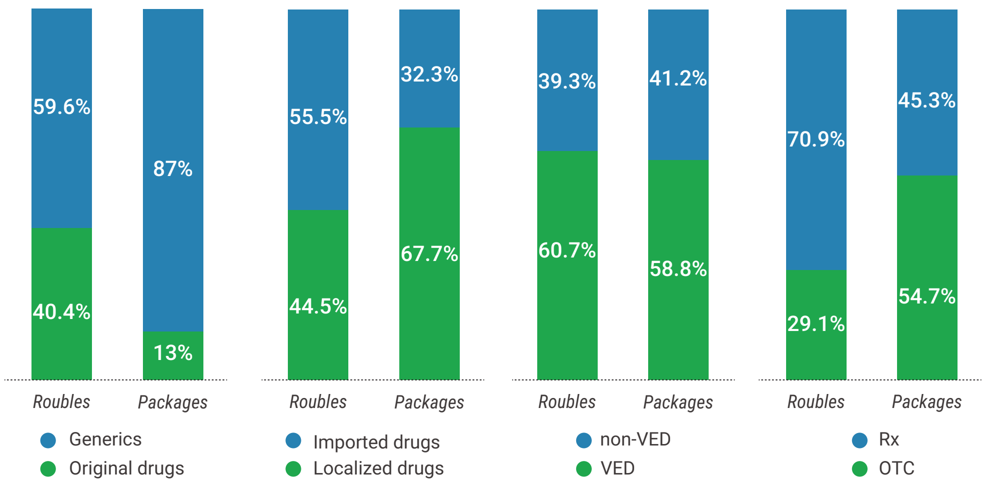


Table 2

Structure of sales of drugs by ATC codes, 2022

ATC codes 1st level	Share in value terms	Share in volume terms
L: Antineoplastic and immunomodulating agents	**17.28%**	**1.92%**
A: Alimentary tract and metabolism	**14.39%**	**15.58%**
J: Antiinfectives for systemic use	**13.79%**	**10.65%**
C: Cardiovascular system	**9.34%**	**13.41%**
B: Blood and blood forming organs	**8.89%**	**6.24%**
R: Respiratory system	**8.14%**	**14.20%**
N: Nervous system	**7.93%**	**14.04%**
M: Musculoskeletal system	**6.56%**	**7.19%**
G: Genitourinary system and sex hormones	**4.27%**	**1.91%**
D: Dermatologicals	**3.48%**	**8.04%**
S: Sensory organs	**1.92%**	**2.42%**
Non-ATC	**1.67%**	**2.19%**
V: Various	**1.33%**	**0.78%**
H: Systemic hormonal preparations, excluding sex hormones	**0.86%**	**1.08%**
P: Antiparasitic products, insecticides and repellents	**0.14%**	**0.36%**

2. Commercial drug segment

Out-of-pocket payments remain the most common means of accessing medicines. At year-end 2022, the share of the commercial drug segment was 60% in roubles and 86% in packages. Despite the growing momentum in public procurement, the importance of pharmacy sales of drugs is not diminishing.

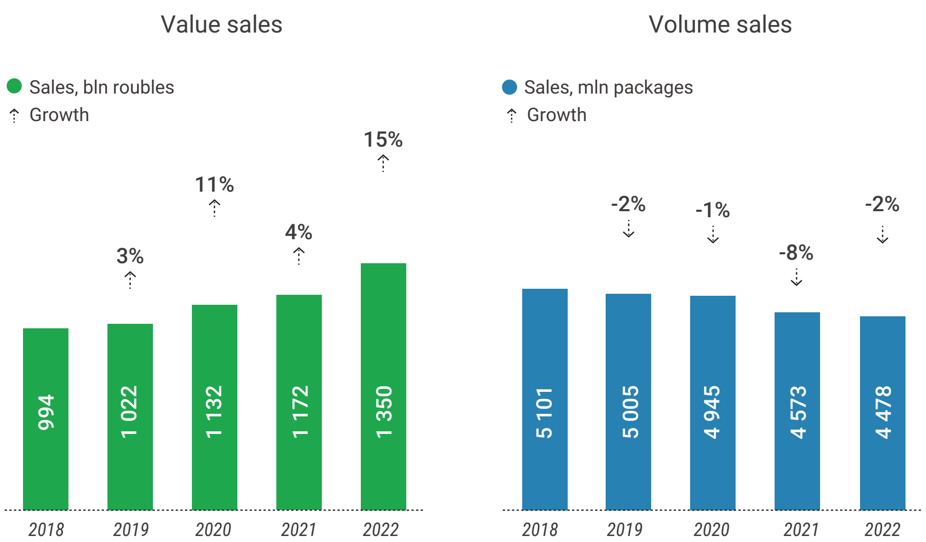
In 2022, the pharmaceutical market was growing primarily due to the commercial segment, the main share of which came from the sales of drugs. In 2022, the commercial drug market accounted for around 4.48 billion packages, or 1,350 billion roubles. Compared to 2021, the sales of drugs in packages shrank by 2.1%. However, value sales grew significantly – 15% year-on-year.

In recent years, the development of the pharmacy market has been increasingly influenced by external factors and the financial and economic situation in the country. The year 2022 is also a prime example of this impact. In the midst of the ongoing coronavirus pandemic, the main contributor to the dynamics of drug sales was the panic buying in March 2022, when the main rounds of sanctions began. As a result, the market has returned to high growth rates.

There is an interesting fact and observation: we had a similar situation in 2020. The panic buying was in March, too. Therefore, the common phrase “lightning never strikes the same place twice” does not apply to this situation. Of course, the reason for the increased demand and its structure are different, but the result is the same: In 2020, the increase in March was 46% compared to March 2019, in 2022 – it was 72% (i.e., almost 1.5 times higher). In 2020, panic buying was triggered by a sharp rise in the exchange rate in the first week of March and the outbreak of the Covid-19 pandemic (which led to the borders being closed). Given these factors, consumers feared stock shortages and

Figure 4

Dynamics of retail sales of drugs, 2018-2022



rising drug prices and "bought up" almost everything at pharmacies.

In 2022, the approach was more measured: people first bought expensive imported drugs, most of which are for systemic use and taken regularly. Indeed, the imposition of sanctions could have led to difficulties in obtaining such drugs on the market (including through the disruption of supply chains and the possible inclusion of drugs on the sanctions list). Fortunately, the fears turned out to be unfounded, and the overall provision of drugs was not disrupted.

However, all these events still resulted in high drug inflation in March and April, which, among other things, was one of the deterrents to consumption growth. The price index for drugs costing more than 500 roubles was the highest during this period, while traditionally cheaper drugs grow faster. In subsequent periods of the year, we observed a standard pattern of price increases by price segment.

It should be noted that excluding March, the market is also growing at double-digit rates (January-February and April-December combined growth was 10% compared to 2021). Many factors contributed to the high pace of pharmacy drug sales in 2022 (Fig. 5). These included an increase in the number of Russians suffering from the new SARS-CoV-2 "omicron" virus strain in January and February, a worsening of the COVID-19 epidemiological situation in August, and finally an increase in seasonal acute respiratory viral infections and the flu in November and December.

If we compare the overall disease rate in 2022, it was higher than in 2021. According to official statistics, there were about 11 million sick people in 2022, up from 7 million the year before. In other words, there was a 57% increase. Meanwhile, sales of coronavirus medicines did not show such a high growth rate: their sales increased by 6%, while the other drugs grew 3 times as fast (+17%).

It should be pointed out that, despite the fact that drugs were not affected by the sanctions, the decisions of foreign companies may indirectly change the structure of the market in the future. The point is that many Western pharmaceutical manufacturers have cut back on marketing budgets and advertising for drugs. Bayer, Sanofi, Abbott, Johnson & Johnson, etc. have disappeared from TV

Figure 5

Growth factors of the pharmacy drug market in 2022

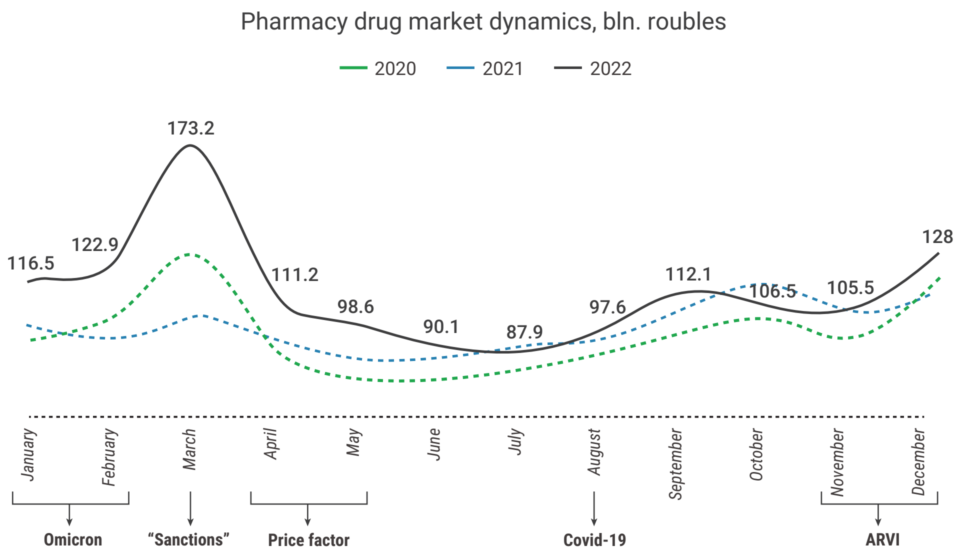
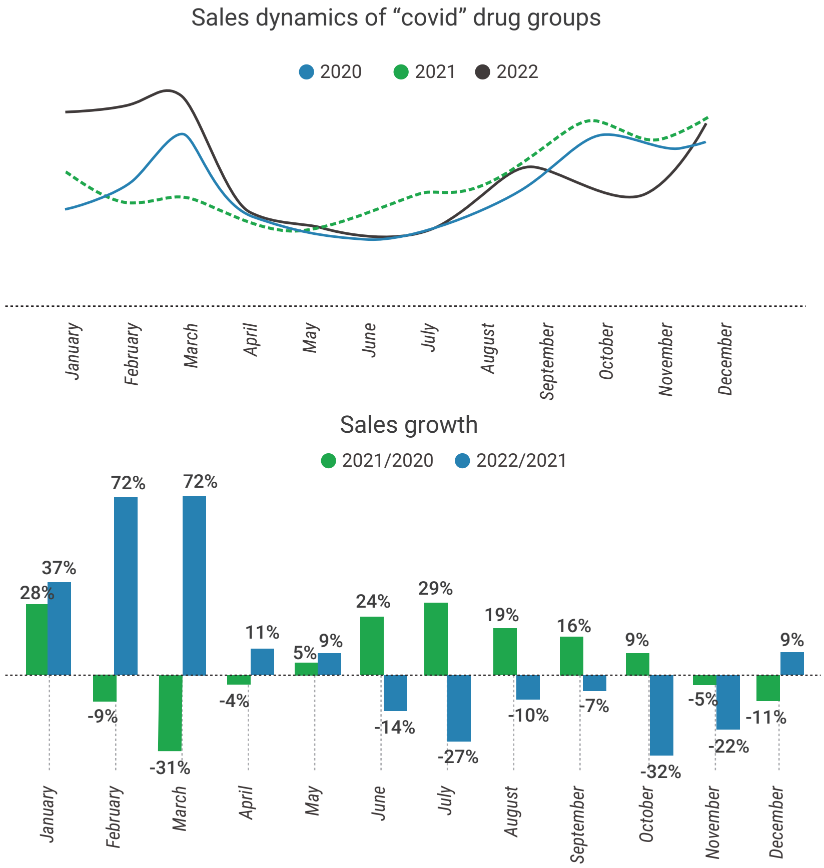
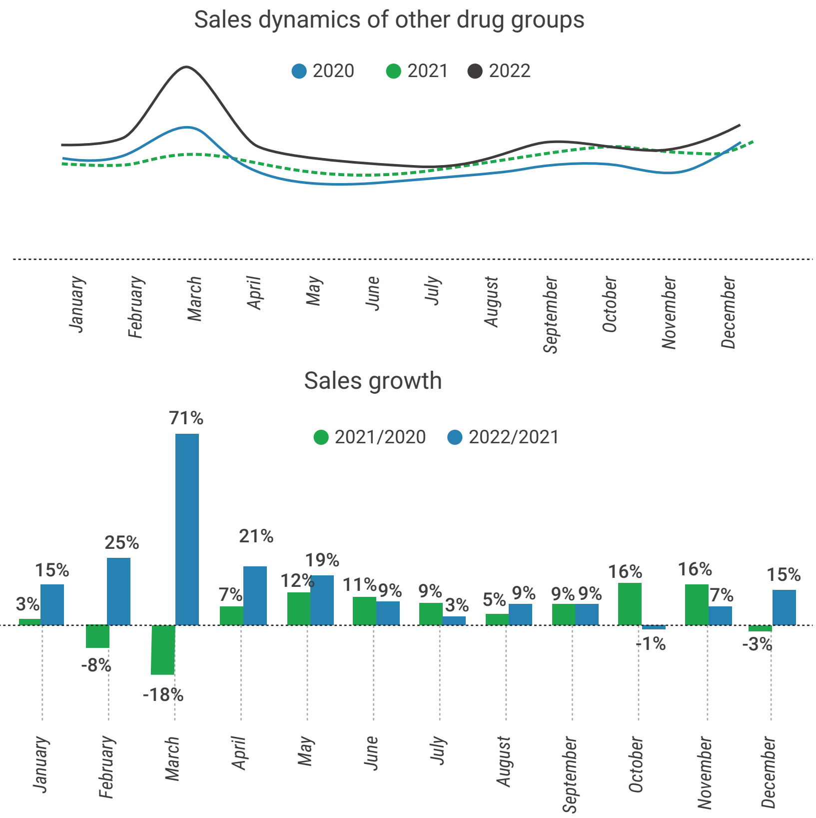


Figure 6

Seasonality of drug sales in 2022



Note: Covid-19 drugs: ANALGESICS (N02); ANTIBACTERIALS FOR SYSTEMIC USE (J01); ANTITHROMBOTIC AGENTS (B01); ANTIPROTOZOALS (P01); ANTIVIRALS FOR SYSTEMIC USE (J05).



screens. The companies that remained in the TV advertising market were expected to quickly absorb the market share of those that left. Nothing of the kind has happened yet. For one thing, TV advertising applies only to over-the-counter drugs. For another, patients are highly loyal to brands. Loyalty shifts take time. This also applies to prescription drugs. For doctors to start recommending other brands is a slow process that takes time.

However, the advantage of domestic and remaining foreign companies may be short-lived. A bill to ban television and radio advertising of over-the-counter drugs has been reintroduced in the State Duma (the lower house of the Russian parliament). The proposal is to limit such advertising to specialty television channels and specialty radio programs involving medical and pharmaceutical professionals.

Imported/localized drug sales ratio

The structure of the commercial drug market by degree of localization is shown in Fig. 7.

At year-end 2022, the share of drugs produced in Russia was 45.7% in roubles and 65.1% in packages. Compared to 2021, no rapid market transformation took place: the change in the shares was within ±1%.

Although the growing share of localized drugs is an already established trend on the drug market. Since 2018, this figure has grown from 42% to 46% in roubles. The percentage of drugs produced in Russia in packages has been consistently above 65% for the past 5 years.

Sales growth of localized drugs (+15.7% in roubles compared to 2021) has a higher rate than that of imported drugs (+14.9%). If we analyze the monthly sales trend, we can see that the localized drugs have been growing faster than the imported ones since June.

Volume sales declined by more than 2% for both groups. The sales decline in packages was driven by drugs in the low-price segment, which includes the classic "Russian" drugs, such as Ceftriaxone (-36.1%), Citramon (-23.9%), Chlorhexidine (-21.8%), etc.

The average weighted price of a localized drug (+18.1%) grew more than that of an imported one (+17.3%). Yet, it remains more than twice as low. In 2022, one package of a localized drug

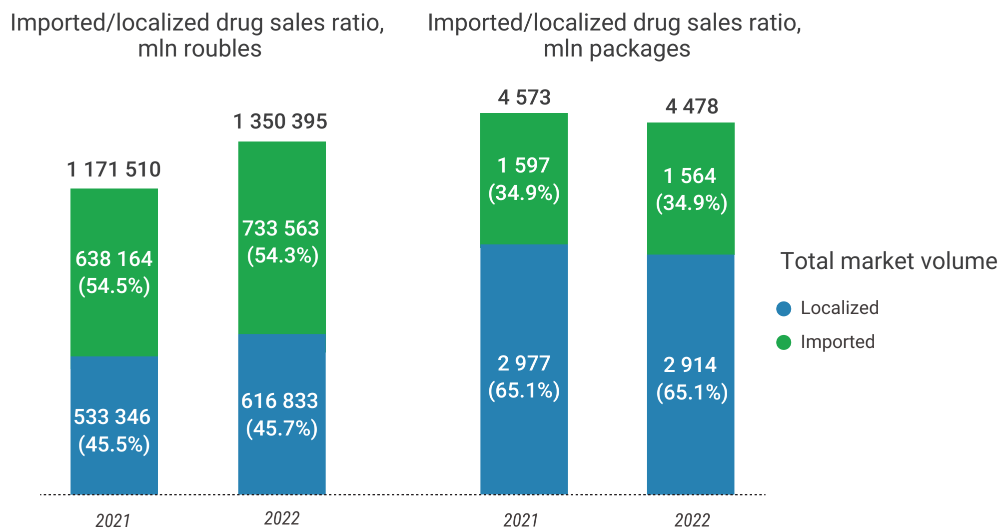


Figure 7

Imported/localized drug sales ratio, Russian retail market, 2021-2022

***Note**: Localized drugs are drugs produced in the territory of Russia.*

cost on average around 212 roubles, whereas an imported drug cost 469 roubles.

In general, the number of Russian and foreign manufacturers on the market is roughly equal (471 and 431 companies, respectively). Meanwhile, pharmacies offer more foreign brands of drugs (2,894 brands, which amounts to 7,863 SKUs). The figure for domestic drugs is 11% less - 2,586 brands (9,273 SKUs). This shows that foreign manufacturers sell more "unique" items – originator drugs and branded generics. Large quantities of Russian drugs are unbranded generics produced by several companies at once.

Rx/OTC drug sales ratio

On-line sales of OCT drugs were legalized in Russia in the spring of 2020. An important event in 2022 was the experiment of on-line sales of prescription drugs in the city of Moscow, the Moscow region and the Belgorod region. The law will take effect on March 1, 2023, and will be in force for three years.

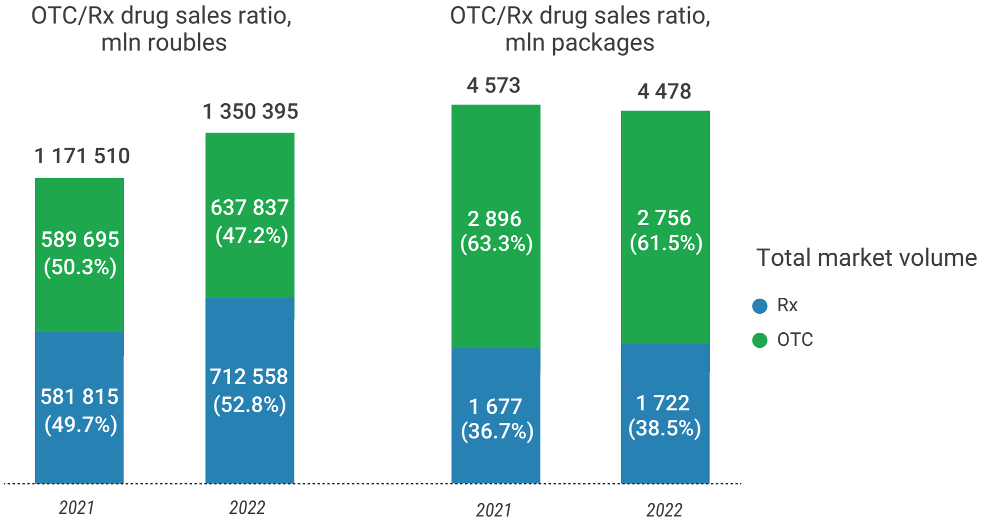
The ratio of pharmacy sales by type of dispensing is shown in Fig. 8.

Compared to the previous year, the market structure shifted in favour of prescription drugs (+3.1% in roubles, and +1.8% in packages). In value sales, the market is divided in half between prescription and over-the-counter drugs. In volume sales, the distribution of shares between drugs by type of dispensing shifted in favour of OTC drugs, which accounted for 61.5% at year-end 2022.

The dynamics over the last 5 years show a trend of the market structure shifting towards Rx drugs: compared to 2018, their percentage increased by 4.3% in roubles and 5.4% in packages. However, it should be noted that this trend may change as control over the release of prescription drugs continues to tighten. New penalties are now pending approval: pharmacists will pay a fine of up to 20 thousand roubles, companies may be fined up to 200 thousand roubles. This can significantly reduce the growth rate of Rx drugs.

Figure 8

OTC/Rx drug sales ratio, Russian retail market, 2021-2022.



Note:
Shares of Rx and OTC drugs have been calculated on the basis of the official classification according to the List of Over-the-Counter Drugs, without taking into account that Rx drugs are often dispensed in pharmacies on an unrestricted basis.

In 2022, prescription drug sales were up 22.5% in roubles and 2.7% in packages compared to 2021. The growth rate of OTC sales was much lower: +8.2% in value. And the sales in packages fell as much as 4.8%.

The average price of an Rx drug was 414 roubles, an OTC drug cost 231 roubles on average in pharmacy retail prices. Weighted average prices for both categories rose year-on-year, by 19.3% and 13.7%, respectively.

Originator/generic drug sales ratio

The ratio of pharmacy sales of originator and generic drugs is shown in Fig. 9.

The market situation in 2022 fostered the basic trends of the past years. The share of generics has been declining for the past three years. Thus, the percentage of originator drugs increased from 30.8% in 2019 to 31.3% in 2022 in roubles and from 11.4% to 13.6% in packages. Nevertheless, generics still lead the drug market, accounting for 68.7% of value sales and 86.4% of volume sales at year-end 2022.

In absolute terms, sales in roubles grew significantly for both generics and originator drugs: +14.8% and +16.4%. Volume sales of generics fell 2.7%, while volume sales of originator drugs rose 2.2%, which explains the shift in the market structure towards the latter.

The average price of an originator drug was 694 roubles per package (+13.9% compared to 2021); a generic drug was sold on average for 240 roubles per package (+18%).

Structure of retail drug sales by ATC code

The ratio of Russian pharmacy drug sales by ATC code, 1st level, is shown in Table 3.

In 2022, there were some changes in the structure of the pharmacy market by ATC code, 1st level, compared to 2021:

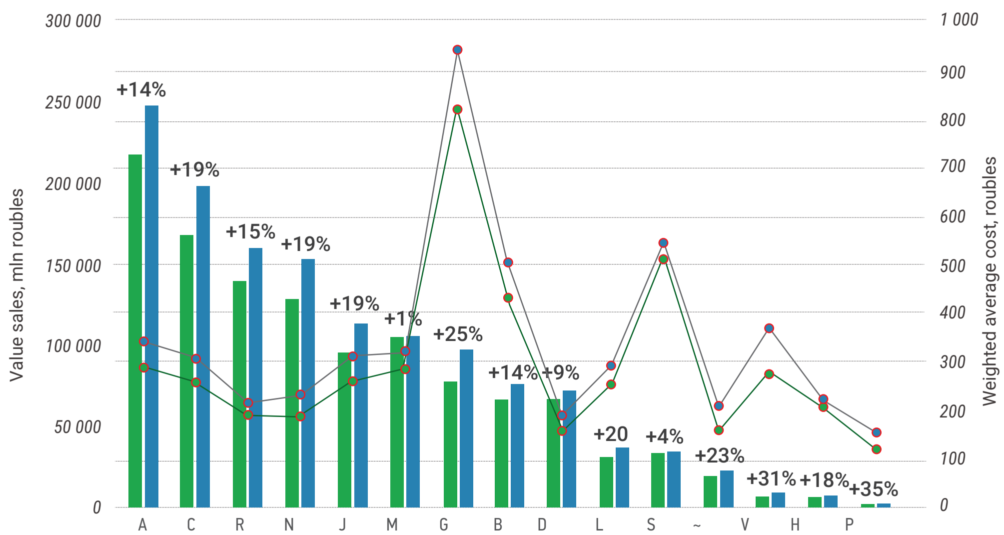


Figure 9

Originator/generic drug sales ratio, Russian retail market, 2021-2022

• musculoskeletal system drugs (+18.8%) moved up from 5th place to take over from antiinfectives for systemic use, due to a significant increase in sales;

• for the same reason, drugs used to treat the sensory organs (+20.2%) and antineoplastic and immunomodulating agents (+4.1%) swapped places.

ATC code [A] Alimentary tract and metabolism is traditionally on top (+14.2%) with a 18.4% share of value sales. The best sellers in this ATC code were the hepatoprotectors Heptral (3.1% of the group's sales) and Ursosan (2%), and the digestive enzyme drug Creon (2.1%). A substantial increase in sales was observed in the magnesium drug Magne B6 (+24.9% compared to 2021), the hepatoprotective drug Ursosan (+22.9%) and the NSAID Tantum (+20.4%). At the same time, the drugs among the top ten brands in ATC code [A] that experienced a decline were the eubiotic Linex (-24.5%), the hepatoprotector Heptral (-4.4%) and the vitamin B complex Milgamma (-3.1%).

About 13.8% of value sales for ATC code [A] fall within [A07] Antidiarrheals. The leader by sales in ATC code [A07] was Linex, with a 12.6% share in roubles. Enterosgel and Enterofuryl rank 2nd and 3rd by value with 10% and 8.1% respectively. The leader by number of packages sold is the low-cost and generally domestic Activated Carbon (25% of sales in ATC code [A07]).

ATC code [A10] Drugs used in diabetes showed the highest growth rate in 2022 in its ATC group – sales increased by 38.1% in roubles. One reason for this is the increased demand for the antidiabetic agents Saxenda (+145.9% compared to 2021), Forxiga (+124.4%), and Ozempic (+95.8%). In addition, a new drug entered the market in 2022 – Rybelsus (INN-semaglutide) produced by Novo Nordisk (year-end sales totaled 1,173 million roubles). This drug is indicated for use in adult patients 18 years of age and older with inadequately controlled type 2 diabetes mellitus to improve blood glucose control as an adjunct to diet and exercise.

Second-best by value is ATC code [C] Cardiovascular system (14.8%). The top brands of ATC code [C] are the following drugs: the angioprotector Detralex (4.6% share), the angiotensin II receptor blocker Edarbi (3.2%), and the beta-adrenergic blocking agent Concor (3.2%). The main contributors to the group's 18.6% year-on-year sales growth were the angiotensin II receptor blocker Edarbi (+81.6%), the hypolipidemic drug Rosuvastatin (+52.1%) and the antihypertensive drug Noliprel (+33.5%).

The third in the top three is ATC code [R] Respiratory system, with a 11.9% share in roubles. Sales of ATC code [R] drugs grew by 14.8%. The most notable growth was observed in ATC code [R02] Throat preparations (+26.4% compared to 2021) with the major brands. The fastest growing brands within ATC code [R02] are: the antiseptics Agisept (+77.8%) and Hexoral (+51.9%), antibiotic Grammidin (+37.5%).

The increase in value sales and average price per package for ATC codes is shown in Fig. 10. Every single group showed an increase in sales compared to 2021.

ATC codes [P] Antiparasitic products, insecticides and repellents (+35.2%), [V] Various (+30.7%) and [G] Genitourinary system and sex hormones (+25%) showed the maximum increase in 2022.

ATC code [P] Antiparasitic products, insecticides and repellents saw the largest increase in sales. A significant increase in sales was demonstrated by ATC code [P02] Anthelmintics (+38.1%), which account for 87.8% of sales in ATC code [P].

ATC codes 1st level	Sales, bln roubles	Growth in roubles	Sales, mln packages	Growth in packages
[A] Alimentary tract and metabolism	**248.5**	**14.2%**	**721.8**	**-3.3%**
[C] Cardiovascular system	**199.5**	**18.6%**	**641.8**	**0.1%**
[R] Respiratory system	**160.7**	**14.8%**	**725.8**	**0.7%**
[N] Nervous system	**154.0**	**19.2%**	**659.8**	**-3.7%**
M] Musculoskeletal system	**114.2**	**18.8%**	**367.7**	**-0.2%**
[J] Antiinfectives for systemic use	**107.2**	**1.5%**	**334.5**	**-8.0%**
[G] Genitourinary system and sex hormones	**98.0**	**25.0%**	**104.2**	**9.7%**
[B] Blood and blood forming organs	**76.6**	**14.3%**	**150.7**	**-1.2%**
[D] Dermatologicals	**72.9**	**8.8%**	**379.5**	**-8.2%**
[S] Sensory organs	**37.5**	**20.2%**	**127.5**	**5.2%**
[L] Antineoplastic and immunomodulating agents	**35.7**	**4.1%**	**65.4**	**-0.6%**
Non-ATC	**23.8**	**23.0%**	**114.1**	**-5.0%**
[V] Various	**9.9**	**30.7%**	**26.8**	**-0.2%**
[H] Systemic hormonal preparations, excluding sex hormones	**8.8**	**18.1%**	**39.2**	**14.1%**
[P] Antiparasitic products, insecticides and repellents	**3.1**	**35.2%**	**19.3**	**4.4%**

Table 3

Drug sales structure, Russian retail market, by ATC code, 2022

Note:
Non-ATC drugs, drugs not assigned ATC codes (homeopathic medicines, vegetable drugs, animal-extracted products, substances, etc.).

Within ATC code [P02], the brands with the largest increases in demand were Biltricide (+83.3%), Wormin (+50.8%) and Nemozole (+39.1%). A new drug, Albendazole, also entered the market (sales in 2022 were 129 million roubles).

Among other drugs that rank second in terms of growth rate, the high year-on-year growth was reported for the immunobiological allergen extract Staloral (+127.8%), the renal failure drug Ketosteril (+78.6%), and the antiseptic herbal remedy Zeleny Doctor Sage (+63%).

Growth in ATC code [G] Genitourinary system and sex hormones was driven by the antimenopausal drug Femoston (+58.3%), the contraceptives Qlaira (+43.8%) and Yarina (+26.5%).

In terms of volume sales, the leaders in consumption growth were ATC codes [H] Systemic hormonal preparations, excluding sex hormones (+14.1%) and [G] Genitourinary system and sex hormones (+9.7%). Meanwhile, 9 out of 15 groups had a negative year-on-year trend. The biggest drop in pharmacy sales in packages was recorded for dermatologicals (-8.2%), antiinfectives for systemic use (-8%), and non-ATC (-5%).

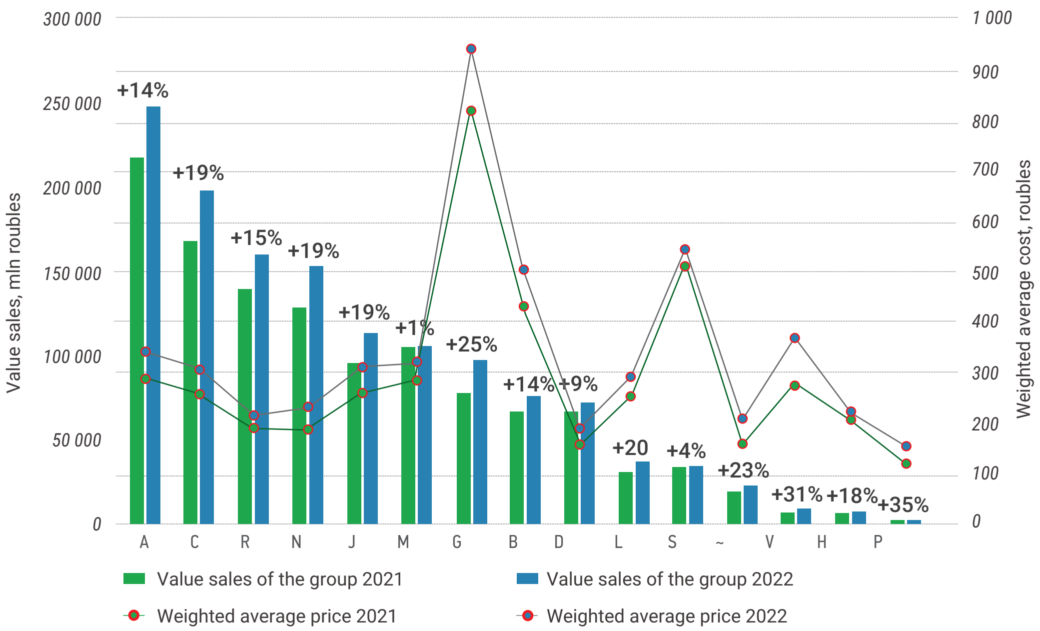
The highest weighted average price per package at year-end 2022 was 941 roubles for drugs in ATC code [G] Genitourinary system and sex hormones. The price is so high because the price per package for certain drugs in this group is 10,000 roubles and more. The most expensive drugs in the group are: the follicle-stimulating hormone Rekovelle 33.3 µg/2.16 ml solution No. 1 for injection (50.8 thousand roubles per package); the urological remedy Fertiwell 5 mg lyophilizate No. 10 to prepare solution for intramuscular injection (34.2 thousand roubles); the antimenopausal drug Melsmon 2 ml solution No. 10 for injection (32.9 thousand roubles).

A high weighted average price is observed also in ATC codes [L] Antineoplastic and immunomodulating agents – around 546 roubles, and [B] Blood and blood forming organs – 509 roubles. The weighted average price for antiparasitic products, insecticides and repellents is, on the contrary, the lowest – 161 roubles per package.

How much various ATC codes contributed to

Figure 10

Weighted increase in retail market drugs, by ATC code, 2022



the overall commercial market growth has been measured on the basis of the weighted average increase: the value showing the share of the ATC code multiplied by its growth rate (Fig. 12).

Among the groups that most of all contributed to the growth of the commercial drug market in 2022 were: [C] Cardiovascular system, [A] Alimentary tract and metabolism, and [N] Nervous system, which totaled 7.5% or 48.3% of the market growth on the whole.

Drug manufacturers on the retail market

Table 4 shows the top 20 manufacturers with the highest value sales on the commercial market in Russia in 2022.

In 2022, there were about 890 players on the Russian pharmaceutical market. Cumulatively, the top 20 companies cover 52% of the value sales of drugs. Compared to 2021, the total share of the top 20 fell by 2.4%. The ranking of manufacturers is more stable than the ranking of drugs.

Traditionally, the year-end market leader in the pharmacy segment is Bayer (4.3% in roubles), its sales in the pharmacy segment grew by 11.9%. The German corporation's portfolio comprises 60 brands sold in pharmacies. The company's maximum sales are from direct-acting anticoagulant Xarelto – its share in the company's year-end sales was 28% in roubles, the annual sales increased by 11.9%. Among the company's leading brands, the most successful were the contraceptives Qlaira (+43.8% by 2021) and Yarina (+26.5%) and the calcium-phosphorus metabolism regulator Calcemin (+30.4%). The leaders by volume sales are such best sellers as Relief, Xarelto, and Rennie.

Russian OTCPharm ranks second, being only 0.6% in roubles behind the leader. In 2022, the company's sales fell by 1.5% compared to the previous year. Russian pharmacies sell 45 of the company's brands; the most significant increase in demand was recorded for the eye drops and vision vitamins under the brand name Taufon (+134.4%). However, the biggest impact on the company's overall sales performance among the key brands was made by

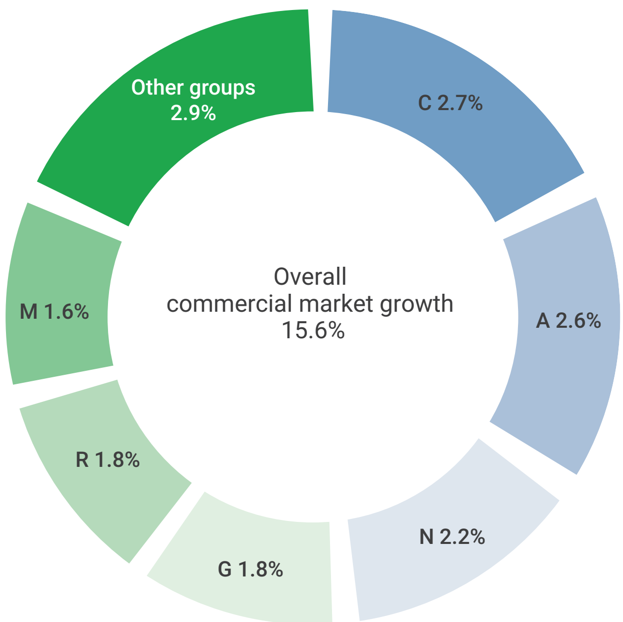


Figure 11

Weighted increase in retail market drugs, by ATC code, 2022 the group of "declining" drugs – primarily the antivirals Arbidol (-8.9%) and Amixin (-8%), the vitamin-mineral complexes Complivit (-8.1%).

The third best is Stada Corporation (3.6% share). Thanks to a 21.7% increase in sales, the company strengthened its position in the ranking to take 1st place. A number of the company's leading drugs showed notable sales growth – Edarbi (+81.6% over 2021 sales), Artra (+70%), Xefocam (+46.4%).

The maximum drop in sales among the top 20 drug manufacturers was suffered by the leader of previous years, Novartis (-10.3%; -4 lines). The negative dynamics of the pharmaceutical corporation were caused by the antibiotic Amoxiclav (-38.5%), expectorant mucolytic agent ACC (-38.4%), and the antifungal drug Exoderil (-34.4%).

Maximum growth rates were demonstrated by: the domestic manufacturer Vertex (+30.6% compared to 2021) and Servier (+23.4%). Vertex went up 2 lines thanks to the hypolipidemic agents Rosuvastatin (+98.3%) and Atorvastatin (+33.7%), and the histamine drug Betahistine (+53.9%). Servier moved up 4 lines in the ranking of top manufacturers thanks to increased demand for the antihypertensive combination drugs Triplixam (+70.7%) and Noliprel (+33.5%), and the anxiolytic drug (tranquilizer) Grandaxin (+40.4%).

Most of the ranked companies are foreign drug manufacturers. in 2022, there were 6 Russian companies in the top 20: OTCPharm ranking 2nd (3.7% in roubles), Binnopharm Group ranking 12th (2.3%), Ozon ranking 14th (2%), Pharmstandard ranking 15th (1.9%), Vertex ranking 19th (1.7%), and Valenta Pharm ranking 20th (1.6%).

In packages, as before, among the leaders are Russian and foreign companies with a large proportion of generics in their product mix. The maximum share is held by Pharmstandard (7%). Ozon makes for around 4.1% of pharmacy sales in packages. The third in the top three is Stada, with a 4% share. The top 20 ranked manufacturers hold more than fifty percent of the pharmacy market (53%) in packages, which is comparable to the concentration in value terms (52% held by the top 20 corporations).

It is worth noting the performance of Grotex (+14.9%), which jumped five places in the ranking. Among the most successful brands of the manufacturer were: the anticongestive drugs Xyloct-Solopharm (+54%) and Oxyfrine (+42.6%), and the NSAID Angidac (+40.9%).

The companies that had a significant drop in sales were Novartis (-15.1% and -4 lines), Tula Pharmaceutical Factory (-14.6% and -3 lines), and A.Menarini (-13.7% and -3 lines).

Retail market drugs

While the SKUs of drugs in the public segment remained virtually unchanged in 2022, the SKUs in pharmacies decreased by 8% to 21.6 thousand. The leaders among drugs that left the market were mostly expensive drugs used for various pathologies. The top three brands in terms of value sales were Kadcyla, Octagam, and Actinolizate. However, despite the fact that the drugs began to leave the retail segment, they continue to be present in the public segment of the pharmaceutical market.

The factors that influenced the exit of drugs from the market include the effects of sanctions and the disruption of logistics chains, which increased the cost of drug production. For example, some drugs were taken off the VED list because the production cost of these drugs exceeded their maximum selling price.

In addition, some of the drugs decreased their presence on the market. The drugs whose availability decreased most are: Hexoral 0.2% 40 ml topical aerosol No. 1 (-75.8); ACC Long 600 mg effervescent tablets No. 10 (-74.9); No-

Table 4

Top 20 drug manufacturers by value sales, 2022

Note: *"manufacturer" means the parent company that may incorporate several manufacturing sites.*

Ranking	Change compared to 2021	Manufacturer	Sales, mln roubles	Share	Growth compared to 2021
1	-	Bayer	**58 681**	**4.3%**	**11.9%**
2	-	OTCPharm	**50 298**	**3.7%**	**-1.5%**
3	+1	Stada	**48 793**	**3.6%**	**21.7%**
4	+1	Sanofi	**42 504**	**3.1%**	**6.7%**
5	+4	Servier	**41 675**	**3.1%**	**23.4%**
6	+1	Abbott	**41 038**	**3.0%**	**17.2%**
7	-4	Novartis	**39 636**	**2.9%**	**-10.3%**
8	-2	Teva	**38 612**	**2.9%**	**5.7%**
9	+2	KRKA	**37 845**	**2.8%**	**19.4%**
10	-2	GlaxoSmithKline	**36 873**	**2.7%**	**8.1%**
11	-1	A.Menarini	**32 490**	**2.4%**	**-3.6%**
12	-	Binnopharm Group	**30 861**	**2.3%**	**21.8%**
13	-	Gedeon Richter	**29 561**	**2.2%**	**19.9%**
14	+1	Ozon	**26 995**	**2.0%**	**18.3%**
15	-1	Pharmstandard	**26 262**	**1.9%**	**11.2%**
16	-	Pfizer	**25 170**	**1.9%**	**12.4%**
17	+1	Polpharma	**23 637**	**1.8%**	**10.8%**
18	-1	Johnson & Johnson	**22 863**	**1.7%**	**2.7%**
19	+2	Vertex	**22 601**	**1.7%**	**30.6%**
20	-	Valenta Pharm	**21 684**	**1.6%**	**15.8%**

Spa 40 mg tablets No. 100 (-67.6). They also include drugs that are quite familiar to Russian consumers: Amoxiclav, Smecta, Nurofen for Children, Zovirax, etc. They became ten times less available due to reduced supply from distributors.

No wonder that in 2022, the Federal Service for Surveillance in Healthcare (Roszdravnadzor) issued a list of drugs that could potentially be in shortage.

Table 6 shows the top 20 brands with the highest sales on the commercial market in Russia in 2022.

At year-end 2022, over 5,000 drug brands could be found in pharmacies. The top 20 drug brands accounted for 12.2% of the market in roubles. There are considerable changes in the ranking of the brands leading by value sales on the retail market. The anticoagulant drug Xarelto (1.2% share in roubles) of the German Bayer Corporation moved up to the first place, showing an 11.9% increase in sales compared to 2021. The previous year's leader, the domestic antiviral drug Arbidol (1.2%) from OTC-Pharm, moved down to the second place due to an 8.9% drop in sales. Another anticoagulant showing strong growth was Pfizer's Eliquis (1.1%), with sales up 15.8%. The brand ranks third.

Strong positive dynamics were demonstrated by the following drugs: +32 places for the angiotensin II receptor blocker Edarbi (+81.6% compared to 2021) produced by Stada; +19 places for the combination antimenopausal drug Femoston (+58.3%) from Abbott; +10 places for the throat drug Grammidin (+37.5%) from Valenta Pharm.

Only 5 trade names suffered a decline. The demand fell most drastically for the following drugs: the antivirals Arbidol (-8.9%) and Ingavirin (-1.9%), and the hepatoprotector Heptral (-4.4%).

The medicines that left the ranking of the key drugs were the antiviral immunostimulant Grippferon (ranked 27 in 2022), the nonsteroidal antiviral drug Voltaren (ranked 31), the eubiotic Linex (ranked 35), the expectorant mucolytic agent ACC (ranked 45), and the antibiotic Amoxiclav (ranked 54).

By packages, the leaders are the same: "age-old" cheap drugs such as Paracetamol (1.4% in packages), Citramon (1.3%), and Omeprazole (1.3%). Most of the drugs (17 brands) out of the top 20 by volume sales demonstrated negative dynamics. The highest decline rates were reported for the cephalosporin antibiotic Ceftriaxone (-30% compared to 2021), the enterosorbent agent Activated Carbon (-24.7%), and the ACE inhibitor Enalapril (-24.2%).

The highest sales growth was shown by the NSAID Ibuprofen (+25.2%) and the local anesthetic Menovazin (+10.1%). The top 20 brands account for 18% of retail sales by volume, that is their concentration is somewhat higher than by value. The weighted average price for the top 20 in packages is 93 roubles.

Vital and Essential Drugs (VED)

Vital and Essential Drugs (VED) are a list of drugs, approved by the Government of the Russian Federation for the state regulation of drug prices.

According to Government Order No. 3781-r of December 23, 2021, the VED list was expanded by 22 items to 808 drugs effective January 1, 2022. The new items include drugs for: SMA (risidiplam INN), breast cancer (talazoparib), cystic fibrosis (ivacaftor + lumacaftor), multiple sclerosis (cladribine, siponimod), multiple

Table 5

Top 20 drug manufacturers by volume sales, 2022

Ranking	Change compared to 2021	Manufacturer	Sales, mln packages	Share	Growth compared to 2021
1	-	Pharmstandard	**315**	**7.0%**	**-10.1%**
2	+1	Ozon	**184**	**4.1%**	**-0.7%**
3	+1	Stada	**178**	**4.0%**	**-1.7%**
4	-2	OTCPharm	**177**	**4.0%**	**-5.6%**
5	+1	Binnopharm Group	**143**	**3.2%**	**2.3%**
6	-1	Teva	**128**	**2.9%**	**-9.0%**
7	-	Renewal	**125**	**2.8%**	**-5.0%**
8	-	Polpharma	**106**	**2.4%**	**-8.6%**
9	+1	Dr.Reddy's	**98**	**2.2%**	**-2.6%**
10	+4	Vertex	**95**	**2,1%**	**6.5%**
11	+5	Grotex	**95**	**2.1%**	**14.9%**
12	-	Sanofi	**93**	**2.1%**	**-2.8%**
13	-4	Novartis	**92**	**2.1%**	**-15.1%**
14	-3	Tula Pharmaceutical Factory	**85**	**1.9%**	**-14.6%**
15	+2	KRKA	**84**	**1.9%**	**11.0%**
16	-3	A.Menarini	**82**	**1.8%**	**-13.7%**
17	+2	Servier	**79**	**1,8%**	**9.3%**
18	-3	GlaxoSmithKline	**77**	**1.7%**	**-8,6%**
19	-1	Abbott	**72**	**1.6%**	**-0.7%**
20	-	Johnson & Johnson	**69**	**1.5%**	**-4.2%**

Note:
"manufacturer" means the parent company that may incorporate several manufacturing sites.

Table 6

Top 20 brands by value sales, 2022

Ranking	Change compared to 2021	Brand	Sales, mln roubles	Share	Growth compared to 2021
1	+1	Xarelto	**16 247**	**1.2%**	**11.9%**
2	-1	Arbidol	**15 700**	**1.2%**	**-8.9%**
3	-	Eliquis	**14 426**	**1.1%**	**15.8%**
4	+3	Detralex	**9 081**	**0.7%**	**18.0%**
5	-1	Ingavirin	**8 460**	**0.6%**	**-1.9%**
6	+2	TheraFlu	**8 143**	**0.6%**	**10.6%**
7	-2	Nurofen	**8 091**	**0.6%**	**-1.3%**
8	-2	Heptral	**7 758**	**0.6%**	**-4.4%**
9	+1	Mexidol	**7 353**	**0.5%**	**7.8%**
10	-1	Pentalgin	**7 059**	**0.5%**	**2.1%**
11	-	Cardiomagnyl	**6 503**	**0.5%**	**3.3%**
12	+4	Nimesil	**6 461**	**0.5%**	**14,5%**
13	+32	Edarbi	**6 446**	**0.5%**	**81.6%**
14	-	Concor	**6 351**	**0.5%**	**7.3%**
15	+19	Femoston	**6 308**	**0.5%**	**58.3%**
16	+2	Lorista	**6 282**	**0.5%**	**16.1%**
17	-5	Miramistin	**6 136**	**0.5%**	**-1.0%**
18	+10	Grammidin	**6 059**	**0.4%**	**37.5%**
19	+2	Actovegin	**5 914**	**0.4%**	**13.4%**
20	+7	Yaz	**5 559**	**0.4%**	**25%**

myeloma (isatuximab, pomalidomide), chronic hepatitis B (bulevirtide), pulmonary tuberculosis (delamanid), HIV infection (bictegravir + tenofovir alafenamide + emtricitabine, doravirine + lamivudine + tenofovir) and hospital-acquired infections (polymyxin B).

The new order also included additional dosage forms for 5 drugs already on the list (pancreatin, morphine, carbetocin, phosphazide, triptorelin).

In 2022, the VED list was expanded systematically several times throughout the year.

In March, the list was updated – the drug molnupiravir, which is used to treat coronavirus-infected patients, was added to the list. Three additional dosage forms – powder, concentrate and lyophilizate – were added for the previously listed antiviral drug favipiravir (Order No. 660-r of March 30, 2022).

In August, only one new INN was added to the VED list: the single-component sorbed bifidobacterium probiotic bifidum in capsules and powder for oral administration. The drugs removed from the list were the biosynthetic penicillin group antibiotic phenoxymethylpenicillin and the diagnostic paramagnetic ionic contrast agent gadoversetamide (Order No. 2419-r of August 24, 2022).

In October, two new items of antiviral drugs – protease inhibitors – were added: nirmatrelvir in film-coated tablets and nirmatrelvir + ritonavir in film-coated tablets and their set (Order No. 2927-r of October 06, 2022).

At the end of the year, more changes were made to the list. The new items on the VED list in December were: ramipril (capsules, tablets); cefotaxime + [sulbactam] (powder to prepare solution for intravenous and intramuscular injection); tenofovir + elsulfavirine + emtricitabine (film-coated tablets); diphtheria antitoxin (dosage form is not specified); tetanus antitoxin (dosage form is not specified); pegaspargase (lyophilizate to prepare solution for intramuscular injection and infusion); calcium polystyrene sulfonate (powder to prepare suspension for oral administration). Meldonium was excluded completely. For the drugs vancomycin (powder to prepare concentrate to prepare solution for infusion and oral administration) and morphine (solution for oral administration), the dosage forms specified in brackets were added (Order No. 4173-r of December 24, 2022).

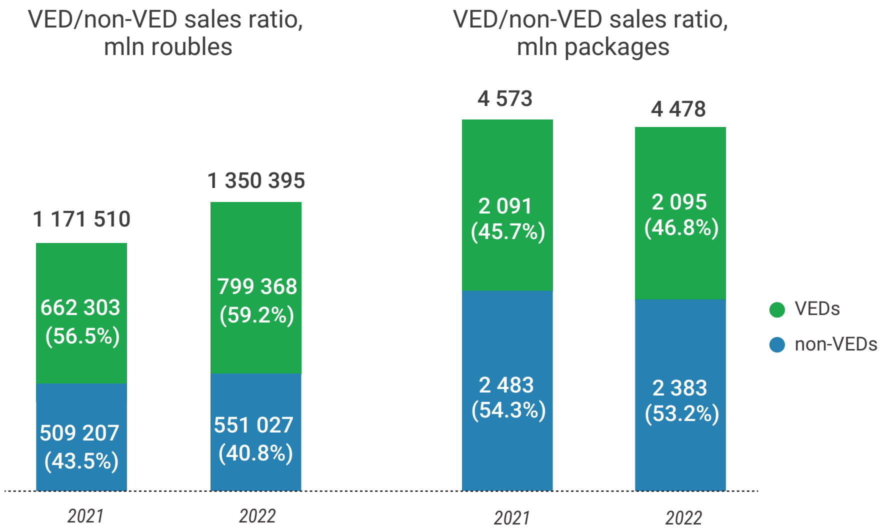


Figure 12

VED/non-VED sales ratio, 2021-2022

At year-end 2022, about 850 INNs on the VED list (2,044 brands) were reported to be sold through pharmacies. VED sales were 551 billion roubles, or 2,383 million packages (Fig. 12).

It should be noted that value sales of VEDs increased less than for the rest of the list (+8.2% for VEDs, +20.7% for non-VEDs). Volume sales of VEDs dropped by 4%, whereas volume sales of non-VEDs declined by 0.2%.

The share of localized (produced in the territory of the Russian federation) vital and essential drugs was 65.8% of volume sales and 50.4% of value sales.

At year-end 2022, the weighted average price for VEDs was 231 roubles; the price per package for localized drugs was about 177 roubles, whereas the price per package for imported ones was almost 2 times higher (335 roubles).

The average price of VEDs (231 roubles) was lower than the weighted average price for other drugs (382 roubles). It shows that the shift in sales towards expensive drugs in the VED segment was less perceptible than across the whole market.

Figure 13 shows the price index for various drug groups. In 2022, drug inflation was 7.5%, which is twice higher than in 2021 (3.7%). In 2022, inflation affected more non-VEDs and reached 12.5%. The increase in VED prices was observed in spring and early summer, while during other periods it was 1-2%. In the end, the figure was only 1% for the year.

The sales ranking for INNs on the VED list is shown in Table 7.

At year-end 2022, the top 20 INNs on the VED list were again headed by xylomethazoline under the leading brand name Snoop (Snup). Sales of drugs with this active ingredient increased by 6.2% over the previous year.

The ranking changed noticeably, but all the shifts took place within the top 20. High growth rates were reported for the hepatoprotective agent ursodeoxycholic acid (+29.4% compared

Figure 13

Price index dynamics on the retail market, 2022

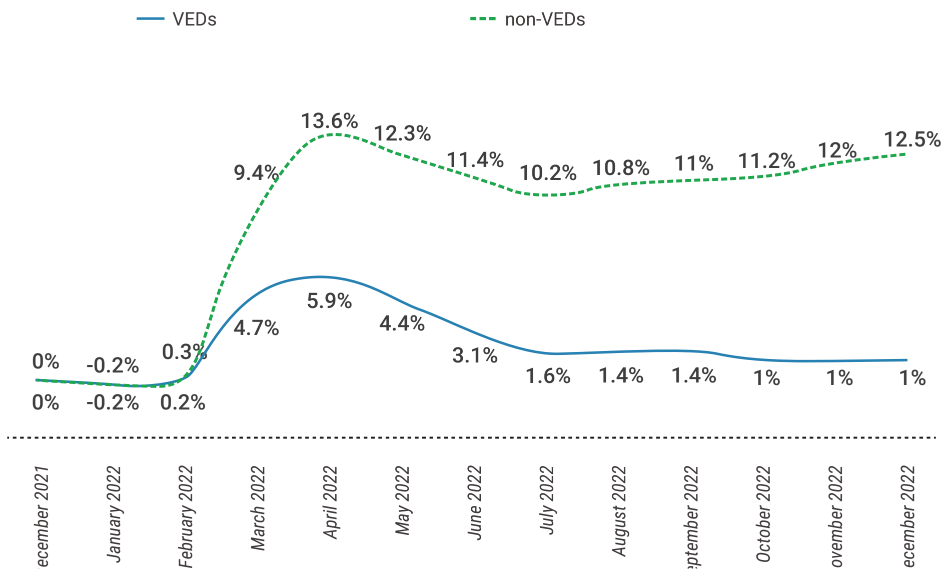


Table 7

Top 20 INNs on the VED list, by value sales, 2022

Ranking	Change compared to 2021	INN	Sales, billion roubles	Share in sales of VEDs, roubles	Leader among brands within INN
1	+1	Xylometazoline	**19.4**	**3.5%**	Snoop (Snup)
2	-1	Umifenovir	**18.4**	**3.3%**	Arbidol
3	-	Rivaroxaban	**16.2**	**2.9%**	Xarelto
4	+1	Apixaban	**14.4**	**2.6%**	Eliquis
5	-1	Ibuprofen	**13.9**	**2.5%**	Nurofen
6	+1	Pancreatin	**11.5**	**2.1%**	Creon
7	-1	Bisoprolol	**11.4**	**2.1%**	Concor
8	-	Ademetionine	**9.6**	**1.7%**	Heptral
9	+7	Ursodesoxyholic acid	**8.8**	**1.6%**	Ursosan
10	-1	Imidazolyl Ethanamide Pentandioic Acid	**8.5**	**1.5%**	Ingavirin
11	-	Atorvastatin	**8.2**	**1.5%**	Atorvastatin
12	-2	Interferon alpha-2b	**8.0**	**1.5%**	Grippferon
13	+2	Omeprazole	**7.1**	**1.3%**	Omeprazole
14	-	Losartan	**6.4**	**1.2%**	Lorista
15	+3	Ethylmethylhydroxypyridine succinate	**6.0**	**1.1%**	Mexidol
16	+3	Moxonidine	**5.8**	**1.0%**	Moxonidine
17	-5	Amoxicillin + [clavulanic acid]	**5.7**	**1.0%**	Amoxiclav
18	+2	Tamsulosin	**5.3**	**1.0%**	Omnic
19	-2	Azithromycin	**5.3**	**1.0%**	Azithromycin
20	-7	Acetylcysteine	**4.9**	**0.9%**	ACC

to 2021), the anticoagulant apixaban (+15.8%), and the centrally acting antihypotensive drug moxonidine (+15.2%). As a result, drugs with these active ingredients strengthened their positions in the ranking by moving up 7, 1, and 3 lines, respectively.

Meanwhile, there was a noticeable decrease in sales of the mucolytic agent acetylcysteine (-30%; -7 places), the antibacterial drugs amoxicillin + [clavulanic acid] (-21.7%; -5 places), and azithromycin (-19.9%; -2 places).

Price segmentation of retail market drugs

The weighted average price per package was 301.5 roubles, which is 17.7% higher than in 2021. The markup of pharmacy chains was less than 25%. Russians are buying less and less low-cost drugs, pharmacy customers are switching to higher-priced products and larger packages.

Figure 14 shows the commercial market structure and the average price per package by price segment in 2021-2022.

During the year, the market structure in roubles changed, with a shift to the higher price segment compared to the previous year. All categories, except for drugs costing "over 500 roubles" (+32.9% in roubles and +27.3% in packages) and "50-150 roubles" (+3.5% and +1.6%, respectively), showed negative sales dynamics. Due to strong growth, the share of expensive drugs increased by 7.5% in value and by 4% in volume. It should be noted that this segment has been growing year after year. There are several reasons for this, including drugs leaving the market, price increases, drug reclassifications, and changes in the size of the consumer basket.

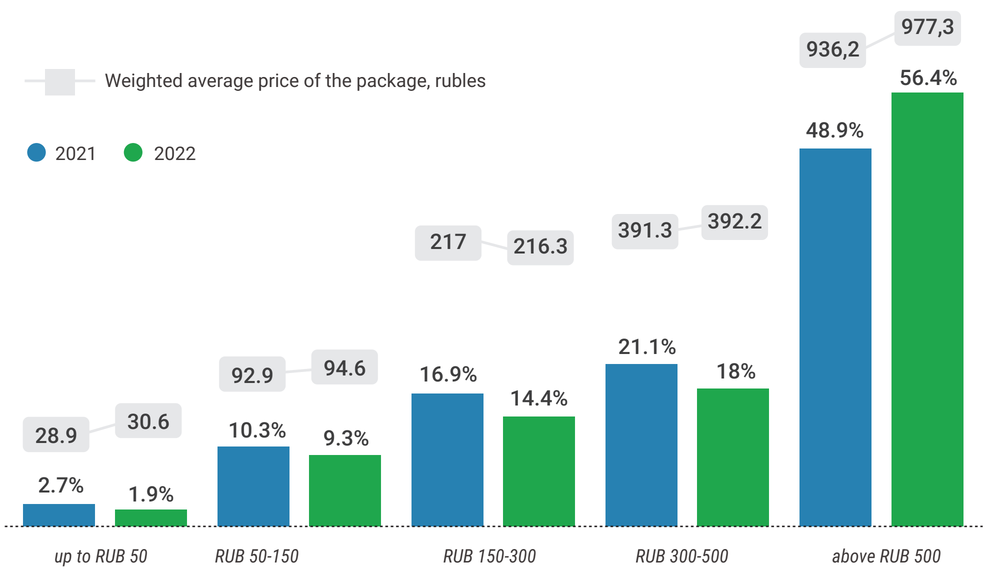
The price segment "below 50 roubles" continued to lose the lead in packages in 2022: the share decreased by 5.3% in volume and 0.8% in value due to a significant decrease in sales (-18.6% in roubles and -23.2% in packages). When measured over a number of years, the decline is more apparent: from 38.1% in packages and from 4.5% in roubles in 2018.

Price index for drugs on the commercial retail market

For an objective analysis of changes in the prices for drugs in the retail segment of the pharmaceutical market, we have studied the price index measured on the basis of a fixed list of finished pharmaceutical products.

Figure14

Retail market value sales structure by price segment, 2021-2022



In December 2022, prices rose by 7.5% compared to December 2021, while this indicator was 3.7% a year earlier.

In 2022, drug inflation was lower than the overall consumer price index reported by the Goskomstat (the State Statistics Service) (11.94%).

It should be noted that prices increased very little before the spring of 2022, and began to rise much faster in March.

Figure 16 shows the overall consumer price index and price indices for individual categories of goods and services.

According to the Federal State Statistics Service (Rosstat), the consumer price index in 2022 was 11.94%. The inflation rate in 2022 was the highest in the last few years, significantly higher than in 2016 (2016 – 5.4%; 2017 – 2.5%; 2018 – 4.3%; 2019 – 3%; 2020 – 4.9%; 2021 – 8.4%). Analysts at the Central Bank of the Russian Federation predict that inflation in 2023 will be around 6%. Meanwhile, the government's key indicator is 4%. At year-end 2022, the budget deficit was 2.3% of the GDP (3.35 trillion roubles). Unplanned growth in fiscal spending is the main risk of accelerating inflation in 2023.

According to the Rosstat, the highest growth was in prices for services – by 13.2%, which is 2.6 more than in the previous year (5% in 2021).

Overall, non-food prices increased by 12.7% in 2022, while food prices were up 10.3%. The lowest increase was in petrol prices (less1%).

New drugs on the retail market

In 2022, 330 new drug brands (240 INNs) entered the retail pharmaceutical market. At the end of the year, the sales of new drugs totaled 3.85 million roubles or 6.8 million packages, which is 0.3% and 0.2% of the total pharmacy sales of all drugs by value and volume, respectively. The weighted average price per package of new drugs was 566 roubles. Compared to 2021, there was an increase in the sales of new drugs on the commercial market by almost 4 times in roubles and 3 times in packages, the weighted average price per package was 31% higher.

New items include 91 brands of imported drugs, 240 brands of domestic drugs, and 4 brands of localized drugs. This allows us to conclude that the growth rate of the market share of domestic drugs in the retail drug segment is increasing, including through the launch of new products on the market. The ratio of sales in roubles and in packages for new drugs is almost identical to the ratio for the retail market as a whole: imported and domestic drugs account for 47% and 53% of value sales and 13% and 87% of volume sales, respectively.

Half of the new brands are prescription drugs. Rx drugs account for 69% of the value sales of new items, but OTC drugs have the advantage in volume sales – 64.4% of the volume sales of new items.

Most of the top 20 are new drugs from Russian companies (13 items). This list also includes two originator drugs from foreign companies – Rybelsus and Arlevert. As a rule, originator drugs rarely make it to the top of the rankings due to consumer conservatism.

Only 13 out of 330 new brands are originator drugs, representing approximately 34% of the total value sales of new products (4%, excluding the Rybelsus brand).

Among the new drugs that entered the Russian

Figure15

Change in prices for drugs on the Russian retail market, 2022

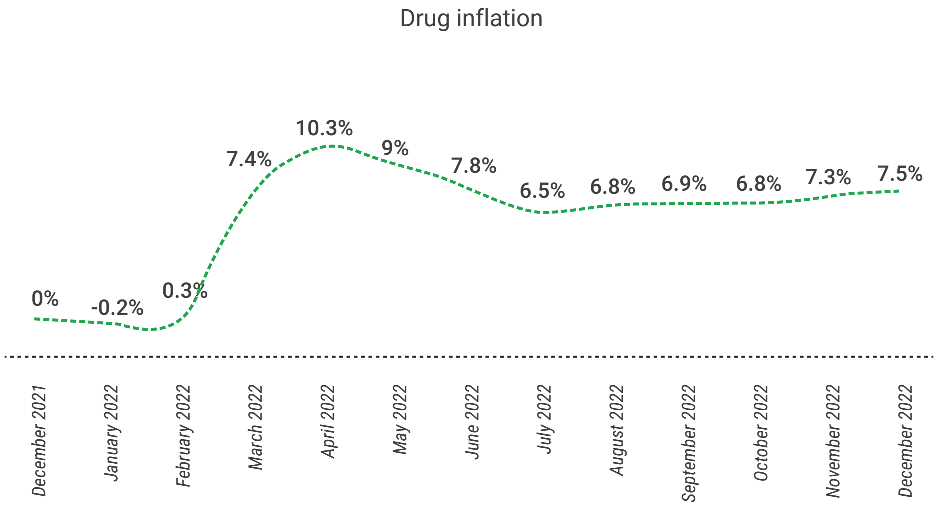
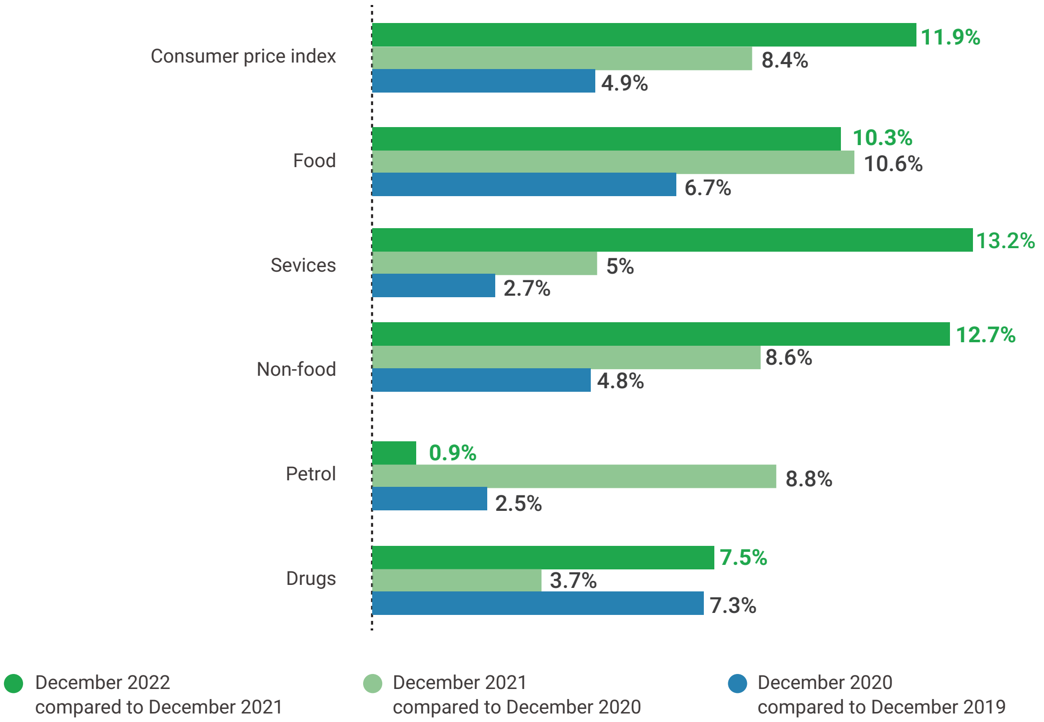


Figure 16

Consumer price index in Russia



market in 2022, the best performance in terms of retail value sales was shown by Novo Nordisk's Rybelsus brand. This is the first time that a drug has exceeded 1 billion roubles in sales on the Russian retail market in the first year after its launch. The originator drug contains the active ingredient semaglutide, which is a glucagon-like peptide-1 (GLP-1) receptor agonist used in the treatment of type 2 diabetes and obesity. Rybelsus is the world's first GLP-1 receptor agonist to be administered orally (previously, all drugs in this class were injected). The low weighted average price compared to similar drugs offered in injectable form (the weighted average price per package of the Rybelsus brand was 8,494.42 roubles in 2022) and the convenience of taking the drug led to strong sales of all new drugs on the retail market.

Bayer's Kyleena ranked second. Its sales were 129 million roubles. Kyleena is an intrauterine therapeutic system with the active ingredient levonorgestrel that provides contraception for up to 5 years. Today, the market for intrauterine devices consists of several SKUs, two of which are owned by Bayer (Kyleena and Mirena).

The third place is taken by the drug Modelax made by Promomed with sales of 128 million roubles. Modelax is a laxative used topically, which makes it safe and suitable for children from the first days of life, as well as for women during pregnancy and breastfeeding.

Promomed launched seven new brands in 2022, three of which were among the top 20 new products in terms of value sales. These are the laxative Modelax (line 3), the antiviral drug Esperavir (line 5), and the brand Brainmax (line 19), which is used in the combination therapy of acute and chronic cerebral circulation disorders.

It should be noted that even two years after the appearance of coronavirus infection, the pharmaceutical market does not stop updating drugs for COVID-19. Promomed launched Esperavir, a drug that reduces the risk of hospitalization and deterioration. The Esperavir brand is based on the active ingredient molnupiravir, which can suppress several COVID-19 strains, including Omicron. A total of 13 new drugs for treating viral infections were launched in 2022, accounting for 7% of the total new retail drug market by value.

The pharmaceutical market faced a number of challenges in 2022, including the cessation of clinical trials in Russia by foreign companies. It poses the risk that in the medium and long term, there will be a shortage of innovative originator drugs because they cannot be registered. As a result, fewer new originator drugs are expected in 2023, and the market will generally shift to lower-cost generics and biosimilars. Therefore, the growth in the weighted average price of a new drug on the retail market will be slower (or negative).

The situation on the pharmaceutical market in 2022 opens opportunities for Russia to intensively develop its own innovative pharmaceutical production facilities and invest more in research centers.

Table 8

Top 20 new brands by value sales on the commercial market, 2022

Ranking	Brand	Manufacturer	Sales, million roubles	Date of appearance in pharmacies
1	Rybelsus	Novo Nordisk	**1 173**	February 2022
2	Kyleena	Bayer	**129**	January 2022
3	Modelax	Promomed	**128**	February 2022
4	Raphamin	Materia Medica	**118**	January 2022
5	Esperavir	Promomed	**100**	March 2022
6	Zenon	Sanofi	**85**	March 2022
7	Flustop	Profit Medica	**79**	April 2022
8	Arlevert	A. Menarini	**79**	February 2022
9	Albendazole	Binnopharm Group	**72**	April 2022
10	Glycine + Melatonin	Evalar	**71**	May 2022
11	Aquasivin	Troitsky Iodine Plant	**64**	June 2022
12	Diacerein	Severnaya Zvezda	**64**	January 2022
13	Strocolin	Profit Pharm	**61**	July 2022
14	Albendazole	Jodas Expoim	**54**	August 2022
15	Moxonidine	Binnopharm Group	**54**	May 2022
16	Oftrix	Grotex	**45**	March 2022
17	Spasmastop	Yuzhpharm	**41**	January 2022
18	Dolocox	Dr.Reddy's	**37**	February 2022
19	Brainmax	Promomed	**36**	June 2022
20	Rimanal	World Medicine	**34**	August 2022

3. Drug reimbursement programme (DRP)

The provision of reimbursed drugs to citizens remains an important part of government social support. The allocated funding in 2022 continued to grow (+19.7% compared to 2021), as did the share of the subsidized segment in the total volume of the pharmaceutical market, from 12.6% in 2021 to 13.5% in 2022.

The provision of drugs to benefit-entitled social categories is financed from budgets at different levels:

- at the federal level – under two programmes, the Essential Drug Coverage (EDC) and the High-Cost ICD.
- at the regional level – purchases regulated by Order No. 890 of the Government of the Russian Federation dated July 30, 1994 "Concerning the State Support for the Development of the Medical Industry and the Enhancement of Provision of the Population and Health Care Institutions with Medicines and Medical Products", as well as purchases of orphan drugs, which are subject to the regulatory and legislative acts of the subjects of the Russian Federation.

Previously, each sub-programme had its own list of drugs to be procured, but since 2021, all lists except for the High-Cost ICD have been eliminated. Now benefit-entitled social categories receive free medicines within the scope of the VED list, which is reviewed at least once a year and amended as necessary. In 2022, the VED list was expanded systematically several times throughout the year. As for regional programmes, the list of drugs is approved annually by the respective regional governments..

Most of the federal funds are allocated for the "High-Cost ICD" sub-programme. Between 2018 and 2022, the number of adult and paediatric patients with high-cost ICD diseases increased by almost 50%, from 158,000 to 233,000, including 15,000 children. Now it covers 14 codes and drugs under 46 INNs.

Government Order No. 3781-r of December 23, 2021 expanded the 2022 High-Cost ICD list by 4 new drugs needed by patients with multiple sclerosis (the purchases of cladribine (INN) in 2022 amounted to 718 million roubles), multiple myeloma (pomalidomide – 753 million roubles, ixazomib – 591 million roubles) and haemophilia (efmoroctocog alfa – 327 million roubles).

The government budgeted 66.96 billion roubles for the 14 High-Cost ICD state programme in 2022 and another 66.96 billion roubles for the same programme in the 2023-2024 planning period. Actual purchases of high-cost ICD drugs in 2022 were over budget. In 2022, 76 billion roubles was spent on the High-Cost ICD programme, 15.5% more than in the previous year. Volume purchases were 4.3 million packages (-1.8% compared to 2021). The total value of the 14 High-Cost ICD commitments increased as the patient base and the range of drugs expanded. Therefore, there is "always" a shortage of funds for the programme.

Based on the processed applications from the regions for 2023 and given the new four INNs included in the list, the total value of the needed drugs could reach 87.8 billion roubles, which is much higher than the budgeted amount. The programme therefore needs to be reformed.

Up to 30% of all the drugs procured under the 14 High-Cost ICD programme are for children. In 2022, the government improved the process for funding such purchases. Patients aged 18 years and older will be provided with drugs funded from the budget allocated to the Ministry of Health. Whereas drugs for children and adolescents will be covered by the budget allocated to the Krug Dobra (Circle of Kindness) Foundation (for more information on the Foundation, please see the section "Drug purchases for HCI needs"). The new procedure will take effect on January 1, 2023.

The government approved the lists of drugs for 2023. Initially, it had planned to add 3 items to the list of drugs for the High-Cost ICD programme, but in the end none of them were included.

The Essential Drug Coverage (EDC) is regulated by Federal Law № 178-FZ of July 17, 1999 "On State Social Assistance" and applies to 9 categories of citizens: the disabled, disabled children, disabled war veterans, World War II participants, combat veterans, and others.

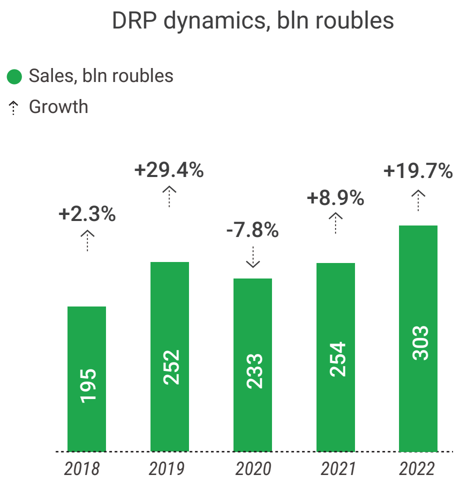
The rate of allowance for beneficiaries of this social service is set each year. On February 1, 2022, the government raised the monthly rate of financial assistance for benefit-entitled social categories by 78.1 roubles to 1,007.9 roubles (Government Order No. 841 of May 9, 2022). The funds are used to purchase medical devices and drugs for these social categories and special food for disabled children.

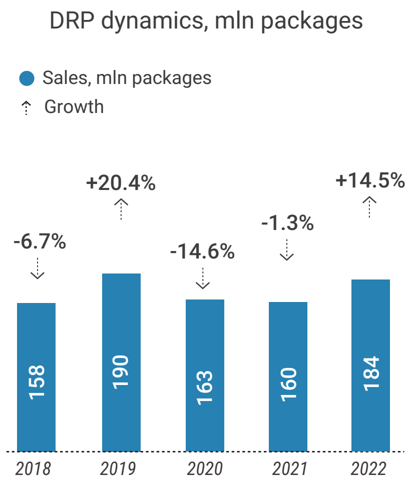
The monthly rate is usually indexed every year. In 2023, the government will change the way it is calculated: the rate will be increased proportionately to the rise in consumer prices.

The amount of funding for the EDC programme remained virtually unchanged in 2022 compared to the previous year, at 43.9 billion roubles (-0.2%). Decline was observed in volume terms, the number of purchased packages was 9.5% lower than in 2021, and in the end the segment shrank to 60.6 million packages.

Figure 17

Drug Reimbursement Programme dynamics, 2018-2022





Regional benefit programs are regulated by the laws of the subjects of the Russian Federation. The DSM Group estimates that the regional programme is comparable in scope to the federal programme, and has even exceeded it in the last three years. The regional segment is growing largely due to increased funding for orphan diseases.

The scope of the regional benefits exceeds that of the federal benefits. In 2022, the drugs purchased were worth 183.5 billion roubles (+27.7% compared to 2021), which makes 118.6 million packages (+33.3%).

The government is trying to optimize and facilitate access to free drugs for the benefit-entitled social categories by developing and testing various schemes. For example, a pilot project was launched in Moscow in 2022: reimbursed drugs are dispensed by electronic prescriptions in commercial pharmacies. The register currently lists 340 such pharmacies of 13 commercial pharmacy chains. A person can pick up the prescribed drug just by showing the QR code of the prescription on the screen of their mobile device or in the printed coupon obtained from the information desk of the polyclinic. The pilot initiative applies to Moscow residents entitled to regional benefits.

The Belgorod region was the first region in the Russian Federation to offer home delivery of reimbursed drugs. Once the paperwork is complete, your drugs will be delivered to your home within five days.

From 2023, benefit-entitled social categories will be able to buy drugs, medical devices and medical foods in a commercial pharmacy using an electronic certificate with a doctor's prescription. This system has been tested on the purchase of rehabilitation equipment since the summer of 2022. The state payment instrument is linked to a MIR bank card, and payment can be made only for drugs, medical devices and medical foods according to the digital record. The person will have a guaranteed provision of a drug with the active ingredient specified in the prescription. He or she may choose to buy a more expensive equivalent drug of a different brand by paying the extra cost out of pocket. This is the first step towards introducing a co-payment system that has been discussed for many years.

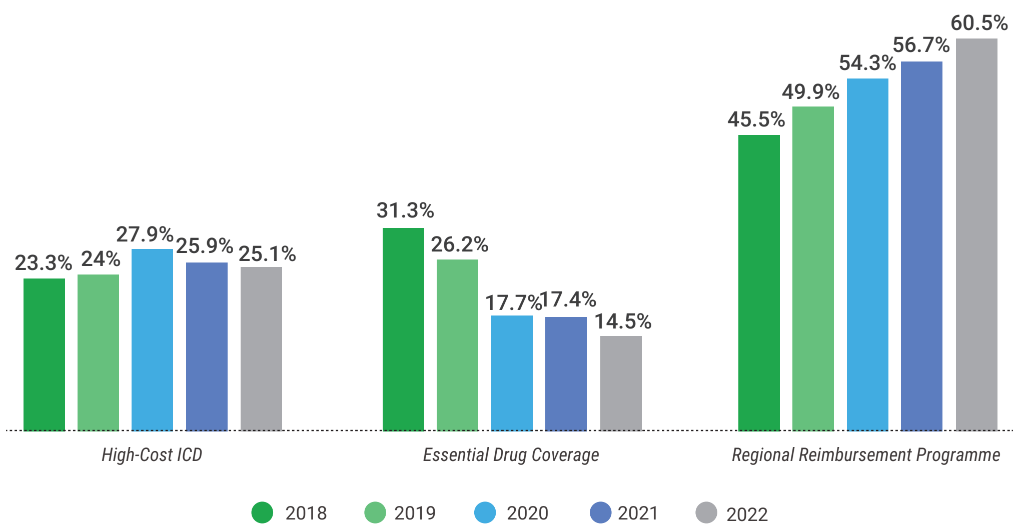
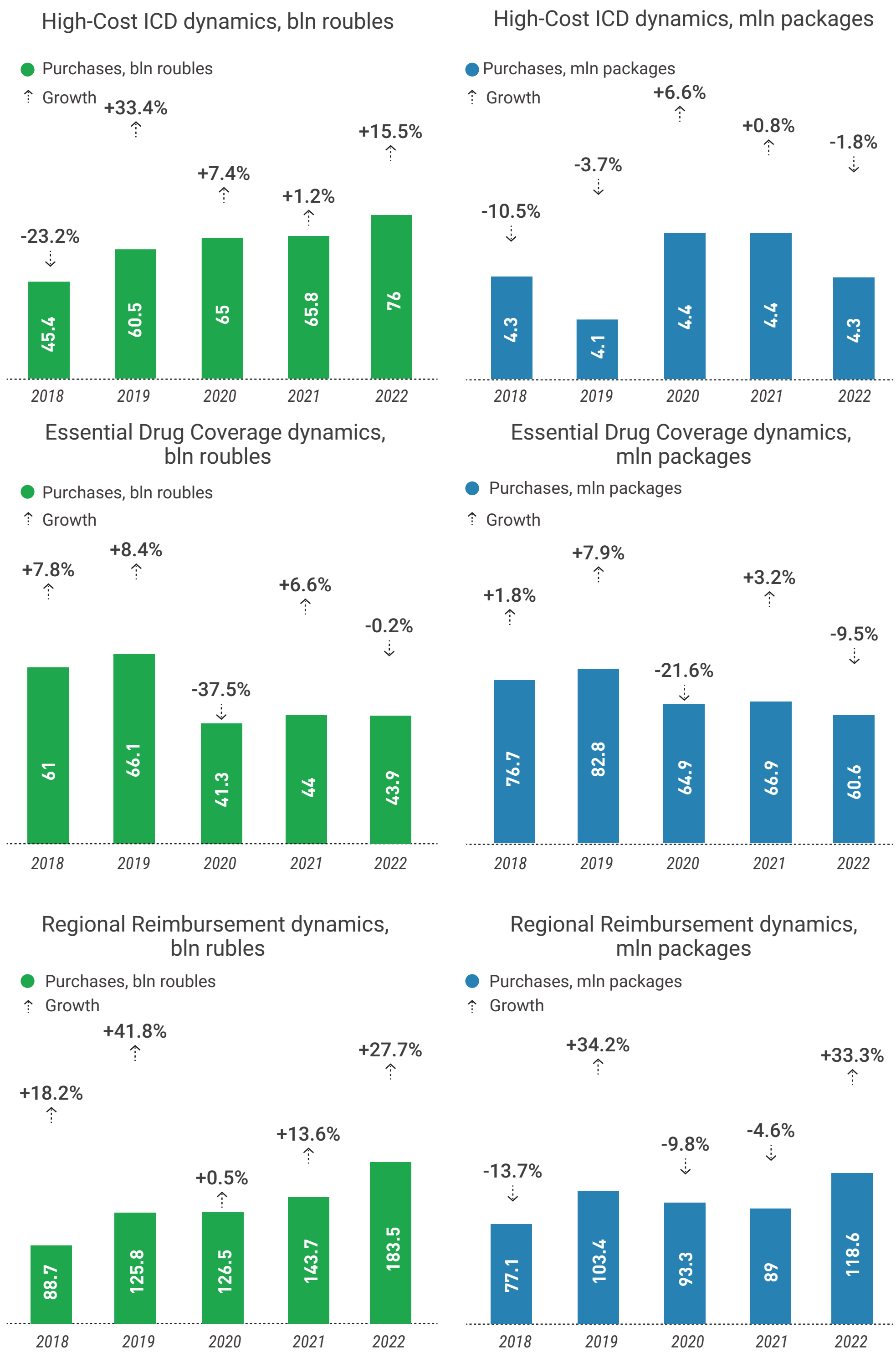


Figure 18

Proportion of costs under High-Cost ICD, Essential Drug Coverage and Regional Reimbursement programmes in the total value of spending in the subsidized drug segment, 2018-2022

Figure 19

Dynamics of costs under reimbursement programmes, 2018-2022



At year-end 2022, the total volume of drug purchases for benefit-entitled social categories was 183.6 million packages worth 303.4 billion roubles. Value purchases for the subsidized segment of the pharmaceutical market increased by 19.7% compared to 2021. The volume of purchased packages also increased, by 14.5%. The analytical data show payments and supplies under contracts performed in 2022.

Looking at each reimbursement programme separately, we can see a trend in the market towards an increase in the share of regional reimbursement, which now accounts for 60.5% of the total subsidized segment. The shares of High-Cost ICD and EDC segments decreased in 2022 to 25% and 15%, respectively.

Imported/localized drug ratio in drug reimbursement

Drug reimbursement programmes largely procure expensive originator drugs, most of which are imported. In 2022, we can see that the share of foreign drugs in total purchases increased by 3.4% in roubles and amounted to 66% by the end of the year. In terms of volume, however, the structure of purchases changed in favour of localized drugs: their share increased from 75.1% to 80.3% during the year (Fig. 19).

In absolute terms, consumption of drugs made in Russia increased by 9% in roubles and by 22% in packages. The cost of purchasing imported drugs was also 26% higher than in 2021 in roubles, while the volume of purchased packages, on the contrary, decreased by 10%.

So, in monetary terms, the localized to imported drug ratio remained in favour of imported ones. In 2022, they accounted for 66% in value terms; drugs made in Russia had a share of only 34%.

Excluding foreign drugs made in Russia, domestic drugs would have accounted only for 25.9% in roubles. Thus, the process of "localization" drives the indicator up by 8.1%.

According to the 2022 data, the price of a localized drug was about 699 roubles and the price of an imported drug was 5,543 roubles.

The ratio of sales of imported and localized drugs under 14 ICD Codes, Essential Drug Coverage and Regional Drug Reimbursement programmes is shown in Fig. 21.

In the DRP corresponding to high-cost codes, the share of localized drugs in roubles increased significantly by 11% compared to 2021, reaching 67.6%. This is the segment where imported drugs hold the highest share in packages (51.4%), which decreased by 3% during the year.

Under the Essential Drug Coverage programme, the share of imported drugs increased by less than 1% and amounted to about 53.2% in roubles. In packages, localized drugs held about 84% of the market (in 2021, their share was somewhat smaller – 82.6%).

In regional benefit programmes, imported drugs prevail in terms of value (68.5%, with their share remaining at the level of the previous year); in packages, localized drugs account for about 80% (+9% compared to 2021).

Below are the top 10 INNs (out of the top 100 by sales in roubles), with respect to which a noticeable shift from imported to localized drugs was observed.

Three INNs (interferon beta-1a, salmeterol + fluticasone and sunitinib) entered the ranking, with a significant increase in the share of drugs produced in Russia, which were already the leading INNs in terms of volume purchases in 2021.

We should also mention the INN valsartan + sacubitril, which entered the "import substitution" ranking of active ingredients after Novartis localized the production of the chronic heart failure drug Uperio at its plant in St Petersburg. During the year, the share of localized drugs under this brand increased by 9%.

For the second year in a row, the drugs everolimus (leader in 2022 with a 52% increase in the share of localized drugs) and interferon beta-1a (+20%) made the ranking.

The ranking includes drugs in the following therapeutic groups: cardiology (valsartan + sacubitril); neoplasms (sunitinib, methotrexate, everolimus); obstructive airway diseases (salmeterol + fluticasone, beclomethasone + formoterol, budesonide + formoterol) diabetes mellitus (biphasic insulin aspart); immune system disorders such as rheumatoid arthritis and

Figure 20

Imported/localized drug purchases ratio, 2022

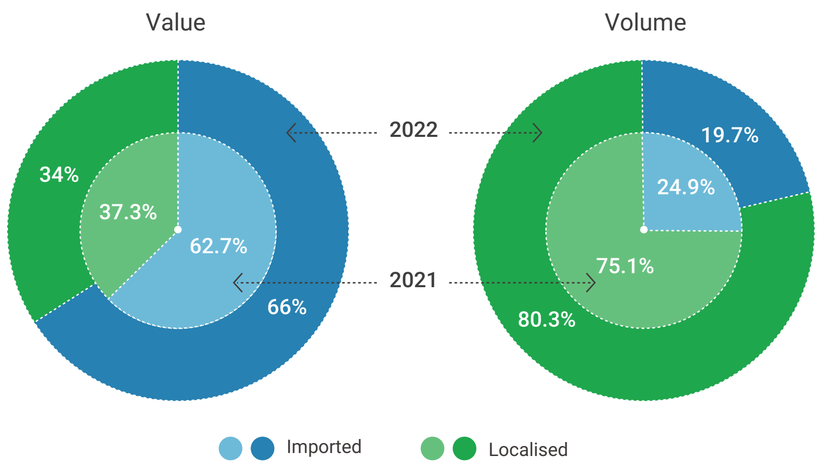
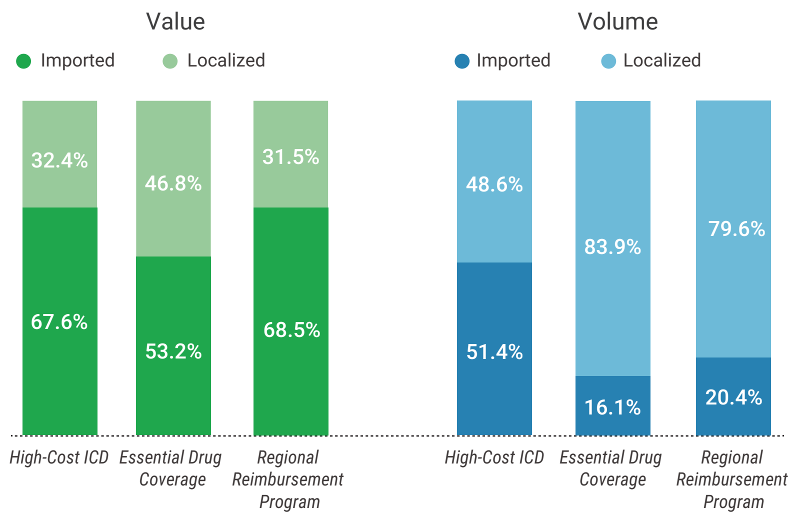


Figure 21

Imported/localized drug purchases ratio under sub-programmes, 2022



psoriasis (etanercept), multiple sclerosis (interferon beta-1a).

Rx/OTC drugs ratio in drug reimbursement

Drug reimbursement programmes offer mainly Rx drugs that are prescribed strictly according to indications.

In 2022, Rx drugs accounted for 99.3% in value terms (virtually no change compared to 2021), and for 92.4% (-0.8%) in volume terms.

Structure of sales of drugs under drug reimbursement programmes (DRP) by ATC codes

The ratio of drug purchases in Russia under the DRP by ATC code, 1st level, in 2022 is shown in Table 9.

The ATC code ranking in terms of sales under the DRP is quite stable. In value terms, the market is fairly highly concentrated – the top three ATC codes account for 80.1% of the market.

ATC code [L] Antineoplastic and immunomodulating agents remains the most funded category under the DRP. In 2022, around 45.4% of the total public funds were spent on purchasing these drugs. This is the most high-priced drug group in the DRP – the average weighted price per package was 13,939.8 roubles. Costs of their purchases increased in roubles by 22.3% compared to 2021. At the same time, their purchases in packages dropped significantly – by 10.9%. There was a switch to generics in the volume purchases. In 2022, Russian Generium's immunosuppressant Elizaria (INN-Eculizumab) ranked first, accounting for 8.9%, its purchases grew by 25.7%. Second- and third-ranking are Bristol-Myers Squibb's immunosuppressant Revlimid (INN-Lenalidomide), and Johnson & Johnson's protein kinase inhibitor Imbruvica (INN-Ibrutinib). The drugs account for approximately 6% and 4% of the value purchases in ATC code [L].

The purchases of the second-ranking ATC code are half the leader's. In 2022, the second place belongs to ATC code [A] Alimentary tract and metabolism (19.3% in roubles). Compared to the previous year, the purchases of the group's drugs increased by 17.4% in roubles and by 25.6% in packages. About 73.7% of this category belong to drugs used in diabetes [A10]. In 2022, the leader in this sub-group in terms of value sales was Sanofi's Toujeo SoloStar (INN-insulin glargine). AstraZeneca's drug Forxiga (INN-dapagliflozin) and Boehringer Ingelheim's Jardiance (INN-empagliflozin) ranked second and third, respectively.

The third-ranking is ATC code [B] Blood and blood forming organs (15.5%). In 2022, ATC code [B] demonstrated a 22.8% growth in value terms. In packages, its purchases decreased by 11%.

In the DRP structure in 2022, the first of the top five ATC codes was code [L] Antineoplastic and immunomodulating agents. The share of the 5 key codes grew by 1% in value terms, reaching around 88.4%. The highest growth of sales was observed in ATC code [R]: over the year, the code's share also grew significantly, from 4.2% to 4.7%. Drugs for respiratory diseases are sold primarily under Regional Drug Reimbursement and Essential Drug Coverage programmes.

Let us see how much money is spent under DRP for the treatment of main disease groups. For this purpose, we correlated drugs with indications. This resulted in the following ranking of DRP costs by disease (Table 11).

For several years in a row, the top-ranking are drugs used to treat malignant tumours since oncology has been recently set as a priority area. The leader accounts for 24.9% of the value purchases of the entire DRP segment. 82% of drugs are dispensed under the Regional Drug Reimbursement programme. In 2022,

Table 9

Top 10 INNs in terms of import substitution, 2022

INN	Share of localized drugs in roubles		Share growth	Leader in 2021 (manufacturer)	'Shift' drug in 2022 (manufacturer)
	2021	2022			
Everolimus	**23%**	**75%**	**+52%**	**Afinitor** (Novartis)	**Nikolimus** (Pharmasyntez)
Budesonide + formoterol	**34%**	**80%**	**+46%**	**Symbicort** (AstraZeneca)	**Respiforb** (Rus Biopharm), **Formisonide** (Nativa (Spektr))
Beclomethasone + formoterol	**0%**	**31%**	**+31%**	**Foster** (Chiesi Farmaceutici)	**Respicomb Air** (Rus Biopharm)
Interferon beta-1a	**50%**	**70%**	**+20%**	**Teberif** (Biocad)	**Teberif** (Biocad)
Etanercept	**1%**	**18%**	**+17%**	**Enbrel** (Pfizer)	**Etanercept** (Rus Biopharm)
Biphasic insulin aspart	**0%**	**13%**	**+13%**	**Novomix** (Novo Nordisk)	**Rinfast** (Geropharm)
Salmeterol + fluticasone	**71%**	**82%**	**+11%**	**Respisalf** (Rus Biopharm)	**Respisalf** (Rus Biopharm)
Sunitinib	**60%**	**70%**	**+10%**	**Sunitinib** (Nativa (Spektr))	**Sunitinib** (Nativa (Spektr), Promomed Rus, Repart)
Valsartan + sacubitril	**68%**	**78%**	**+9%**	**Uperio** (Novartis)	**Uperio** (Novartis)
Methotrexate	**44%**	**54%**	**+9%**	**Metoject** (Medac)	**Methotrexate** (Pharmpotrebsoyuz, Pharmasyntez)

Table 10

Drug purchases structure, by ATC code, DRP market, 2022

ATC codes 1st level	Value purchases, mln roubles	Share in value terms	Volume purchases, mln packages	Share in volume terms
[L] Antineoplastic and immunomodulating agents	**137 713.3**	**45.4%**	**9.9**	**5.4%**
[A] Alimentary tract and metabolism	**58 507.0**	**19.3%**	**60.8**	**33.1%**
[B] Blood and blood forming organs	**46 951.2**	**15.5%**	**12.0**	**6.5%**
[R] Respiratory system	**14 124.0**	**4.7%**	**18.3**	**10.0%**
[J] Antiinfectives for systemic use	**10 902.1**	**3.6%**	**3.7**	**2.0%**
[N] Nervous system	**9 174.3**	**3.0%**	**19.3**	**10.5%**
[C] Cardiovascular system	**8 883.7**	**2.9%**	**49.9**	**27.2%**
[M] Musculoskeletal system	**7 206.3**	**2.4%**	**3.5**	**1.9%**
[H] Systemic hormonal preparations, excluding sex hormones	**4 944.7**	**1.6%**	**2.1**	**1.1%**
[V] Various	**2 972.3**	**1.0%**	**0.9**	**0.5%**
[D] Dermatologicals	**840.8**	**0.3%**	**0.3**	**0.1%**
Препараты без указания АТС-группы	**505.1**	**0.2%**	**0.1**	**0%**
[S] Sensory organs	**404.0**	**0.1%**	**2.1**	**1.1%**
[G] Genitourinary system and sex hormones	**252.3**	**0.1%**	**0.6**	**0.3%**
[P] Antiparasitic products, i nsecticides and repellents	**18.8**	**0%**	**0.1**	**0%**

Table 11

DRP costs ranking by disease, in value terms, 2022

Disease	Purchases, mln roubles	Growth compared to 2021	Share		
			High-Cost ICD	Essential Drug Coverage	Regional Drug reimbursement
Oncological diseases	75 627.8	30.1%	9%	9%	82%
Immunologic diseases	62 085.5	14.0%	61%	9%	31%
Diseases of blood and blood forming organs	46 856.4	23.5%	47%	13%	41%
Diabetes mellitus	45 138.9	18.7%	-	23%	77%
Gastrointestinal diseases	15 064.7	15.0%	51%	11%	38%
Respiratory diseases	14 124.0	33.7%	10%	22%	68%
Diseases caused by various infectious agents	10 910.1	5.5%	-	10%	90%
Nervous disorders	9 174.3	9.2%	-	32%	68%
Musculoskeletal disorders	7 206.3	-0.5%	-	16%	84%
Cardiovascular diseases	6 880.6	9.4%	-	31%	69%
Hormonal disorders	4 944.7	10.1%	4%	35%	61%
Other	4 082.6	7.6%	-	43%	57%
Skin diseases	840.8	123.5%	-	14%	86%
Eye diseases	402.4	20.3%	-	15%	85%
Male and female reproductive disorders	60.7	22.3%	-	22%	78%

this group showed a positive growth of 30.1% over the previous period.

Drugs for the treatment of immunologic diseases rank second, their purchases also increased, by 14%. Most of costs fall within the High-Cost ICD segment (61%).

In 2022, the third place belongs to drugs used to treat diseases of blood and blood forming organs, which were dispensed mainly under the 14 ICD Codes programme (47% in roubles).

The group of drugs for the treatment of skin diseases (+123.5%) rose more than the others in the ranking due to the increase in purchases of the interleukin inhibitor Dupixent (+136.6%). This brand is purchased mainly through the regionally subsidized segment.

Manufacturers in the DRP segment

Table 12 shows the top 20 manufacturers by value consumption in DRP in 2022.

In 2022, drugs under the Drug Reimbursement Programme were purchased from 400 manufacturers. Only 34 companies are involved in the High-Cost ICD programme; 245 participate in the Essential Drug Coverage schemes; regionally subsidized drugs are purchased from 388 companies. This is due to the fact that lists of drugs under High-Cost ICD programmes are legislatively regulated whereas other schemes offer benefits according to the needs of each patient.

There are significant changes in the ranking: only 2 companies managed to maintain their last year's positions. The ranks of the others changed. In 2022, Johnson & Johnson climbed to the top spot with a 7.4% share, its sales increased by 45.5% over the year. The range of drugs purchased under subsidized and reimbursement programmes comprised 29 brands. There was an increase in sales of 8 out of the 10 key brands of the company. The most purchased drugs were the antineoplastic – antiandrogen Erleada (+225% compared to 2021), the monoclonal antibody Tysabri (+144.6%), and the antiplatelet agent Upbravi (+115.2%). At the same time, purchases of the antipsychotic (neuroleptic) Rispolet (-2.2%) and the antiviral [HIV] drug Evipler (-2%) decreased.

Last year's leader, the Russian company Generium (6.7% of reimbursed drugs in roubles) moved down to second place. Purchases of drugs from the manufacturer's portfolio increased by 10.6% compared to 2021. The bioengineering company intends to produce equivalents of expensive imported originator drugs. The government pur-

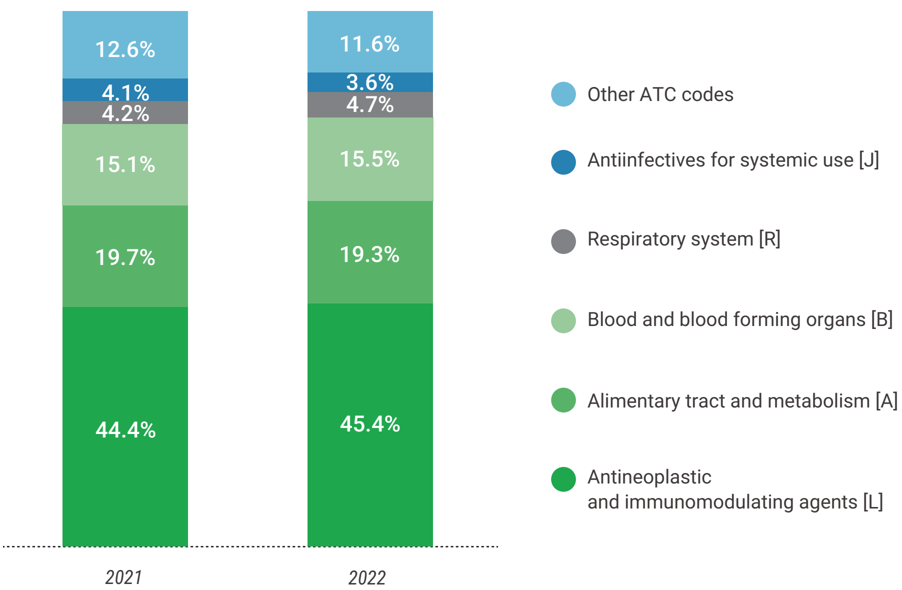


Figure 22

DRP ratio of value purchases by ATC code, 2022

Table 12

Top 20 drug manufacturers by DRP consumption, 2022

Ranking	Change compared to	Manufacturer	Purchases, mln roubles	Share	Growth compared to 2021
1	+1	Johnson & Johnson	22 464	7.4%	45.5%
2	-1	Generium	20 453	6.7%	10.6%
3	-	Novartis	18 013	5.9%	31.0%
4	+2	AstraZeneca	16 472	5.4%	53.7%
5	+2	F.Hoffmann-La Roche	15 950	5.3%	73.1%
6	-2	Sanofi	13 769	4.5%	10.3%
7	-2	Bristol-Myers Squibb	11 235	3.7%	-6.5%
8	+2	Pfizer	11 208	3.7%	26.3%
9	-	Biocad	10 029	3.3%	11.4%
10	-2	Novo Nordisk	9 814	3.2%	7.4%
11	+2	Boehringer Ingelheim	8 884	2.9%	42.0%
12	-1	Bayer	8 640	2.8%	15.6%
13	-1	Baxter	8 129	2.7%	9.0%
14	+6	Takeda	8 075	2.7%	110.5%
15	+1	Astellas Pharma	7 394	2.4%	49.3%
16	-1	GlaxoSmithKline	7 358	2.4%	33.5%
17	-3	Pharmasyntez	5 572	1.8%	-9.7%
18	+6	AbbVie	5 310	1.8%	48.0%
19	+2	Amgen	4 756	1.6%	24.4%
20	+2	Geropharm	4 240	1.4%	12.5%

chases about 9 drug brands from the company. Sales growth was mainly driven by increased purchases of the anti-inflammatory anti-bronchoconstrictor Genolar (+1669.9% compared to 2021), the haemostatic agents Nonacog Alfa (+1222%) and Coagil (+62.1%). Purchases of the company's flagship drug, the immunosuppressant Elizaria, increased by 25.7%. The haemostatic agent Octofactor (-55.5%), the cytokine Infibeta (-6.8%), and the immunobiological allergen Diaskintest (-5.2%) showed a negative trend.

Ranking third in 2022 is Novartis with a share of 5.9%. The manufacturer's sales for the year grew by 31%. The company's portfolio in the subsidized segment continued to shrink: over the year, the number of purchased brands decreased from 76 to 72. The drugs in greater demand were the immunosuppressant Erelzi (+785.3% compared to 2021) for treatment of rheumatic diseases and psoriasis; Kajendra (+317.8%) for treatment of multiple sclerosis; and Uperio (222.1%) for chronic heart failure and essential arterial hypertension. However, purchases of the immunosuppressant – monoclonal antibodies Ilaris – fell by 3.2% compared to the previous year.

The manufacturer that gained in the ranking most of all was Japanese Takeda (+6 position lines; +110.5% compared to 2021), its portfolio includes only 15 brands. Significant year-on-year increases were achieved by: Takhzyro (+717.4%) for the treatment of hereditary angioedema; Gattestive (+613%) for the treatment of patients with short bowel syndrome at age 1 and older; and the leading brand Elaprase (+400.4%) for the long-term treatment of patients with Hunter syndrome (mucopolysaccharidosis type II, MPS II).

At year-end 2022, four Russian manufacturers entered the top 20 by value sales due to the import substitution scheme.

Table 13 shows the rating of manufacturers participating in the 14 ICD Codes, Essential Drug Coverage and Regional Drug Reimbursement programmes.

The Russian company Generium came out on top in the 14 ICD Codes programme; top-rated in the Essential Drug Coverage and Regional Drug Reimbursement programmes were the foreign companies Novartis and AstraZeneca. Several Russian manufacturers participate in each of the sub-programmes; most Russian manufacturers are found among the top 20 drug manufacturers in the Essential Drug Coverage segment (8 companies) and in the Regional Drug Reimbursement segment (5 companies). In the High-Cost ICD segment, the top 20 manufacturers included 4 Russian companies – Generium, Biocad, Mir-Pharm and Pharmasyntez.

Drugs in the DRP segment

Table 13 shows the top 20 brands in terms of value purchases under the DRP programme in 2022. The top 20 brands accounted for 30.9% of value purchases in 2022, up 0.5% year-on-year.

The ranking of drugs changed even more than the ranking of the top 20 companies during the year. Only the flagship drugs Elizaria and Revlimid maintained their ranking spots.

The first place is held by the new drug of 2019 – immunosuppressant Elizaria (+25.7% compared to 2021) produced by the Russian company Generium. The second place in the value ranking is still held by the foreign immunosuppressant Revlimid (-2.9%), produced by Bristol-Myers Squibb. The third place is taken by Johnson & Johnson's protein tyrosine kinase inhibitor Imbruvica (+27.3% and +3 places).

So, there was a major reshuffle in the 2022 ranking. Seven of the top 20 drugs are new entrants. The most successful among the ranked drugs are:

- Takeda's Elaprase (+92 spots) for long-term treatment of patients with Hunter syndrome;
- F. Hoffmann-La Roche's monoclonal antibody Hemlibra (+32 spots) for the prevention

Table 13

Structure of value purchases under the DRP by price segment, 2022

Ranking	High-Cost ICD		Essential Drug Coverage		Regional Drug Reimbursement	
	Manufacturer	Purchase volume, mln roubles	Manufacturer	Purchase volume, mln roubles	Manufacturer	Purchase volume, mln roubles
1	Generium	**13 506**	Novartis	**3 208**	AstraZeneca	**14 284**
2	F.Hoffmann-La Roche	**8 955**	Novo Nordisk	**2 968**	Novartis	**13 201**
3	Johnson & Johnson	**8 855**	Sanofi	**2 577**	Johnson & Johnson	**12 053**
4	Bristol-Myers Squibb	**8 212**	Bayer	**2 380**	Sanofi	**9 947**
5	Baxter	**6 498**	AstraZeneca	**2 188**	Pfizer	**9 357**
6	Biocad	**5 807**	Boehringer Ingelheim	**2 128**	Novo Nordisk	**6 846**
7	Takeda	**4 759**	Pfizer	**1 833**	Generium	**6 842**
8	Octapharma	**3 334**	Johnson & Johnson	**1 555**	Boehringer Ingelheim	**6 756**
9	Novartis	**1 604**	Pharmstandard	**1 405**	GlaxoSmithKline	**6 756**
10	CSL Behring	**1 520**	Geropharm	**1 174**	Bayer	**6 260**
11	Catalent	**1 518**	Rus Biopharm	**1 115**	F.Hoffmann-La Roche	**6 167**
12	Astellas Pharma	**1 360**	Pharmasyntez	**1 105**	Astellas Pharma	**5 415**
13	Sanofi	**1 245**	Biocad	**1 031**	AbbVie	**4 525**
14	Cinnagen	**1 240**	Protek	**1 022**	Amgen	**4 340**
15	Mir-Pharm	**1 085**	F.Hoffmann-La Roche	**827**	Pharmasyntez	**3 746**
16	Grifols	**1 033**	Ipsen	**818**	Biocad	**3 191**
17	Kedrion	**1 014**	AbbVie	**773**	Takeda	**3 103**
18	Pharmasyntez	**721**	Canonpharma Production	**763**	Geropharm	**3 066**
19	Merck KGAA	**718**	Ozon	**687**	Ipsen	**2 869**
20	Dr.Reddy's	**406**	Fresenius	**626**	Rus Biopharm	**2 855**

and reduction of bleeding in adults and children with haemophilia A;

- AbbVie's cancer drug Venclexta (+31 spots) for the treatment of chronic lymphocytic leukaemia, small lymphocytic lymphoma and acute myeloid leukaemia;
- Johnson & Johnson's monoclonal antibody Tysabri (+30 spots), used for multiple sclerosis.

The weighted average price of the top 20 brands was 11,736 roubles per package. The most expensive drug was the protein tyrosine kinase inhibitor Imbruvica in capsule form, with a weighted average price of about 426,000 roubles per package. By contrast, the oral antidiabetic Forxiga was the cheapest of the top twenty drugs (2,376 roubles).

Most of the leading drugs belong to ATC code [L] Antineoplastic and immunomodulating agents (12 brands). Second comes ATC code [A] Alimentary tract and metabolism (5 brands). The third-ranking in this respect is ATC code [B] Blood and blood forming organs with 3 brands.

Most of the ranked brands (12 brands) are drugs dispensed mainly under the regional reimbursement programme. Involvement in the regional reimbursement programme does not exclude release of drugs under High-Cost ICD or Essential Drug Coverage schemes. That is why top brand rankings correlate by segment.

DRP price segmentation

In 2022, the average price per package under the DRP programme increased by 4.5% over the year to around 1.7 thousand roubles. Within the sub-programmes, the most expensive drugs are in the High-Cost ICD segment: on average, the government spends 18,000 roubles per package (+17.6% compared to 2021). The price of regionally subsidized drugs fell by 4.2% to 1,547 roubles. The lowest price is for drugs purchased under the Essential Drug Coverage programme: 725 roubles (+10.2%).

The structure of drug purchases under the DRP is shown in Figure 23.

The most significant increase in purchases for all programmes was reported for the most expensive drugs in the price range "over 50,000 roubles": +42.7% in roubles – for the High-Cost ICD segment; +47.7% – for the Essential Drug Coverage segment; +77.2% – for the Regional Drug Reimbursement segment.

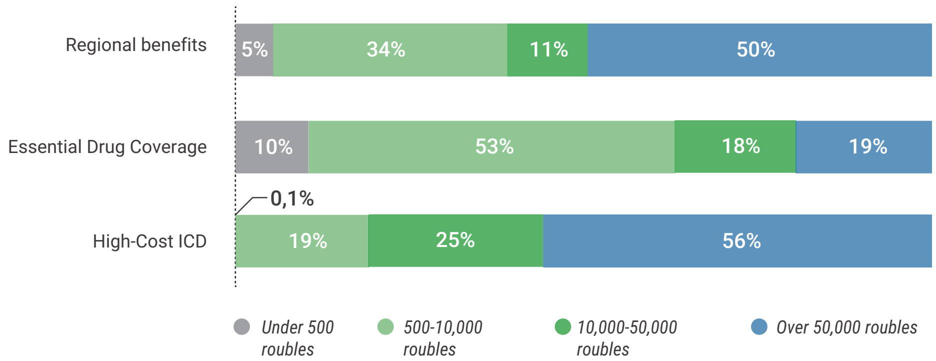


Figure 23

Structure of value purchases under the DRP by price segment, 2022

Table 14

Top 20 brands by value purchase in DRP, 2022

Ranking	Change compared to 2021	Brand	Manufacturer	Purchase volume, mln roubles	Share	Growth compared to 2021
1	-	Elizaria	Generium	**12 253**	**4.0%**	**25.7%**
2	-	Revlimid	Bristol-Myers Squibb	**8 422**	**2.8%**	**-2.9%**
3	+3	Imbruvica	Johnson & Johnson	**5 965**	**2.0%**	**27.3%**
4	-1	Toujeo SoloStar	Sanofi	**5 789**	**1.9%**	**0.1%**
5	-1	Xarelto	Bayer	**5 756**	**1.9%**	**18.2%**
6	+5	Xtandi	Astellas Pharma	**5 218**	**1.7%**	**59.9%**
7	+7	Linparza	AstraZeneca	**4 785**	**1.6%**	**92.6%**
8	+32	Hemlibra	F.Hoffmann-La Roche	**4 563**	**1.5%**	**246.9%**
9	+4	Darzalex	Johnson & Johnson	**4 559**	**1.5%**	**79.3%**
10	+5	Forxiga	AstraZeneca	**4 345**	**1.4%**	**82.8%**
11	+1	Ocrevus	F.Hoffmann-La Roche	**4 154**	**1.4%**	**46%**
12	+92	Elaprase	Takeda	**3 541**	**1.2%**	**400.4%**
13	+7	Jardiance	Boehringer Ingelheim	**3 343**	**1.1%**	**76.6%**
14	-4	Levemir	Novo Nordisk	**3 313**	**1.1%**	**-1.7%**
15	-10	Advate	Baxter	**3 263**	**1.1%**	**-31.4%**
16	+16	Risarg	Novartis	**3 043**	**1%**	**89.9%**
17	+30	Tysabri	Johnson & Johnson	**3 029**	**1%**	**144.6%**
18	+4	Teberif	Biocad	**3 015**	**1%**	**69.8%**
19	+12	Tagrisso	AstraZeneca	**2 773**	**0.9%**	**70.2%**
20	+31	Venclexta	AbbVie	**2 752**	**0.9%**	**137%**

Table 15

Top 20 brands by DRP purchase volume under High-Cost ICD, Essential Drug Coverage and Regional Drug Reimbursement programmes, 2022

Ranking	High-Cost ICD		Essential Drug Coverage		Regional Drug Reimbursement	
	Brand	Purchase volume, mln roubles	Brand	Purchase volume, mln roubles	Brand	Purchase volume, mln roubles
1	Revlimid	**8 212**	Xarelto	**2 032**	Elizaria	**6 476**
2	Elizaria	**5 707**	Toujeo SoloStar	**1 498**	Imbruvica	**5 734**
3	Hemlibra	**4 463**	Levemir	**1 067**	Xtandi	**4 720**
4	Ocrevus	**4 034**	Eralfon	**693**	Linparza	**4 531**
5	Darzalex	**3 847**	Tresiba	**651**	Toujeo SoloStar	**4 291**
6	Elaprase	**3 525**	Forxiga	**644**	Xarelto	**3 724**
7	Advate	**3 258**	Octreotide	**636**	Forxiga	**3 701**
8	Teberif	**3 015**	Fiasp	**567**	Jardiance	**2 969**
9	Tysabri	**2 931**	Simponi	**548**	Risarg	**2 857**
10	Feiba	**2 356**	Enbrel	**509**	Nplate	**2 685**
11	Plegridy	**2 078**	Respiforb	**506**	Venclexta	**2 685**
12	Infibeta	**1 833**	Eliquis	**506**	Tafinlar	**2 490**
13	Octofactor	**1 661**	Xtandi	**498**	Tagrisso	**2 425**
14	Coagil	**1 524**	Brilinta	**478**	Jaakafi	**2 305**
15	Naglazym	**1 518**	Vargatef	**477**	Galvus	**2 285**
16	Tigeraza	**1 449**	Pradaxa	**467**	Levemir	**2 246**
17	Advagraf	**1 360**	Dalibra	**464**	Itulsi	**2 218**
18	Ilaris	**1 323**	Galvus	**445**	Evrysdi	**2 105**
19	Vilate	**1 290**	Atorvastatin	**425**	Revolade	**2 065**
20	Cinnovex	**1 240**	Apidra	**419**	Spinraza	**1 888**

4. Volumes of purchases of drugs for needs of HCI

Neither the COVID-19 pandemic nor the economic sanctions of 2022 have changed the national healthcare agenda. The implementation of digital technologies, specifically, Big Data, artificial intelligence, Internet of Things, and telemedicine heralds the emergence of new methods and approaches to the prevention, diagnosis and treatment of diseases.

As part of healthcare digitalization in Russia two major cross-sectoral projects have been initiated: creating a single digital framework for collaboration of healthcare institutions in the healthcare system on the basis of the Uniform State Health Information System, whose conceptual design was approved back in 2011, and developing medical platform solutions of the federal level (Vertically Integrated Medical Information System (VIMIS)). Also, the strategy for the digital transformation of the industry encompasses two strategic initiatives: The National Digital Platform "Health", and Personal Medical Assistants.

In 2023 and 2024, the Ministry of Health of Russia will implement a pilot project for the remote monitoring of patients with the use of high-technology equipment and services within the framework of the social and economic development initiative "Personal Medical Assistants". As part of the pilot project, diabetic and hypertensive patients will be provided with diagnostic devices, and the recorded data will be exported to the digital platform and handled afterwards by medical specialists from two health centres of the National Medical Research Centre of Cardiology named after Academician Ye. Chazov of the Ministry of Health of Russia, and the National Medical Research Centre for Endocrinology of the Ministry of Health of Russia.

There are high expectations for the promotion of telemedicine in Russia. In the recent years, remote consultations, dietology and psychology have been steadily gathering pace. The market offers a variety of services: Yandex.Health, Sber Health, Doktor Ryadom, Online Doctor, My Doc, ONDOC, TeleMed, SOGAZ-Telemed, Medved.Telemed, Yasno – a service offering video consultations by psychotherapists, and many others.

At the end of 2022, the cash implementation of the national project "Healthcare" was 96%. The budgetary performance was most complete under the project on fighting cancer (98.2%, 185.18 billion roubles expended out of 188.52 billion, the most expensive federal project). The year's worst-performing are the projects on fighting heart diseases (94.7%, 24.2 billion roubes out of 25.6 billion) and for creating a single digital framework in the healthcare system on the basis of the Uniform State Health Information System (90.8%, 13.36 billion roubles out of 14.72 billion).

On the whole, by the end of 2022 the federal budget was utilized with a deficit. So, the funding of certain budget items for the next year is expected to be reduced.

In 2023, the federal spending on the healthcare system in Russia will amount to 1,451.9 billion roubles (against 1,234.6 billion roubles in 2022; the federal expenditures on the healthcare system in 2022, finalized in the consolidated report on the budget expenditure for November, made for 1,498.6 billion roubles). The amounts budgeted for the target period are: in 2024 – 1,474.7 billion roubles, and in 2025 – 1,486.8 billion roubles. According to the adopted budget, the most expensive will be the federal project on fighting cancer: in 2023, the government will spend 154.8 billion roubles on its implementation (in 2022, 189.6 billion roubles were allocated for the project).

By the end of 2022, 550 million packages of drugs worth 592 billion roubles in wholesale prices were purchased for needs of HCI (the analytical data reflect payments and supplies under contracts performed in 2022). Compared with 2021, hospitals expended 1.3% more of public funds. The volume of purchased packages dropped off – by 32.8%.

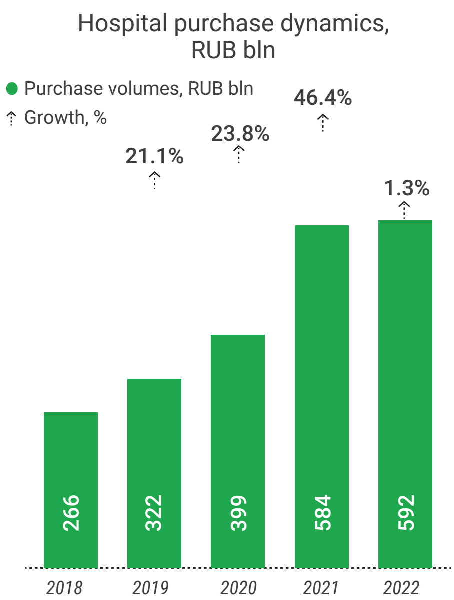
It must be said that purchases of drugs triggered by the spread of the coronavirus infection contribute to but are not the only driver for the dynamics of the hospital segment. The segment capacity in 2022 was also conditioned on the funding of the already existing programmes.

The programme on **fighting cancer** has been in place already for many years, and allocations for purchases of appropriate drugs are growing incessantly. In 2021, 136.9 billion roubles were expended on drug purchases; in 2022, as much as 160.1 billion roubles were spent. The 17% increase in the financing is, among other things, owing to the appearance of more advanced drugs and changes in the treatment profiles.

As is reported by the Ministry of Health, there are about 4 million oncology patients in Russia today, and around 600,000 new cases emerge every year. Detection is improving thanks to the consolidation of the basic infrastructure and the creation of conditions for advanced diagnostics. In the last 4 years of the implementation of the federal project on fighting cancer, mortality from neoplasms has reduced by 4.4%, within-one-year mortality rates have declined by 13.5%.

The largest drop was in the funding of purchases of Covid-19 drug groups - by 22% against the previous year, and this is no less than 32 billion roubles.

The analysis of the month-by-month dynamics shows that from the summer purchases of Covid-19 drugs in the public segment of



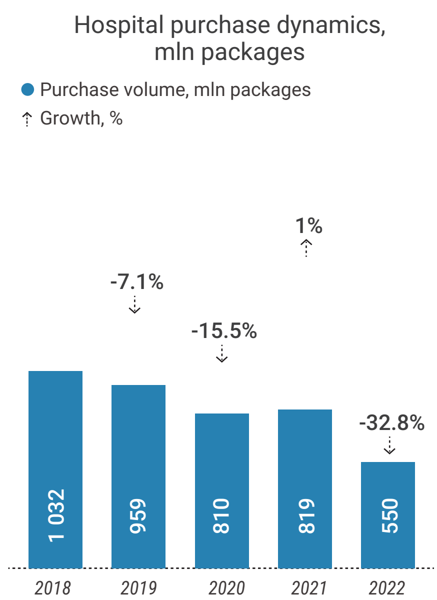


Figure 24

Hospital purchase dynamics, 2018-2022

the pharmaceutical market are notably less than in 2021 (Fig. 26). The drugs were heavily purchased in the 1st quarter. But then the incidence rates started declining sharply, the stocks of the already purchased drugs remained and were used to provide medical care.

Over the year, purchases under the federal target programme on the provision of drugs to persons infected with the human immunodeficiency virus and hepatitis (+10%), the project on fighting CVD, and the National Preventive Vaccination Schedule (+16%) increased at double-digit rates compared with the previous year.

In 2023, 17.5 billion roubles will be allocated for the federal project on **fighting heart diseases**, which is distinctly less (by 32%) than a year earlier (in 2022: 25.6 billion roubles).

In 2022, the vaccine against the rotavirus infection failed to be put on the National Preventive Vaccination Schedule; the schedule in unlikely to include the chickenpox vaccine in 2023, either, though these timings were envisaged by the time frames for the Development Strategy for Immunoprophylaxis through to 2035, approved by the government in 2021. The rotavirus vaccine was not put on the schedule because Russian manufacturers have not yet made the vaccine, and only domestically made vaccines can be used in the national preventive vaccination. In this connection, the government is going to update the strategy schedule and set new timings. Pharm Aid plans to localize in Russia the production of the rotavirus vaccine.

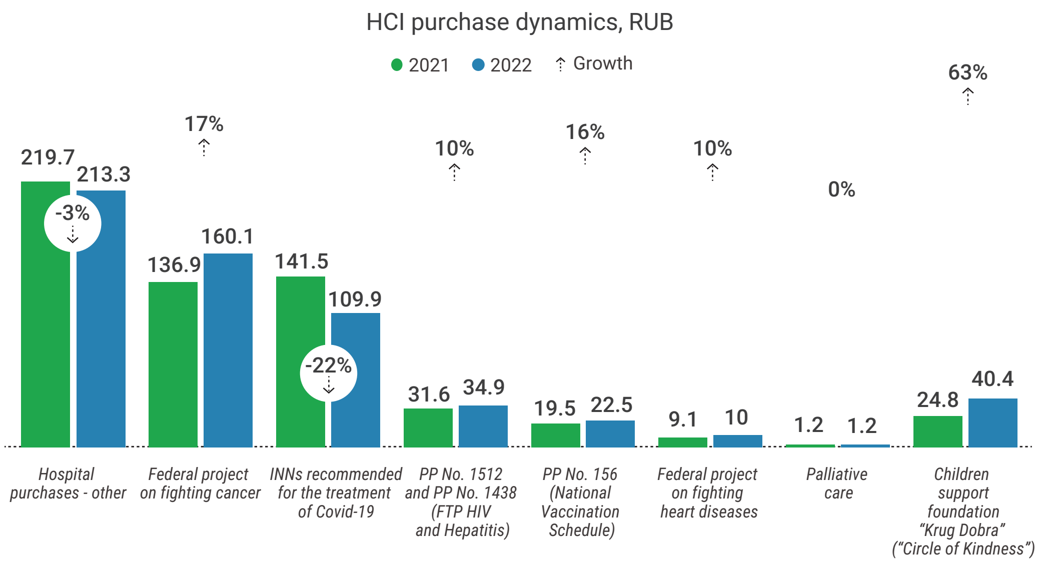
As for the positive dynamics of purchases under the National Vaccination Schedule, it is mainly due to a substantial increase in the consumption of the influenza vaccine Sovigripp.

Over the year, the funding allocations for palliative care remained the same, 1.2 billion roubles.

The highest growth is in purchases for the **"Krug Dobra" ("Circle of Kindness")** foundation (+63%), established in 2021 at the initiative of the president. The capacity of the performed contracts placed by the foundation is not yet significant for the hospital sector – only 40.4 billion roubles at the year-end. In 2023, the foundation's purchases are expected to be worth nearly 80 billion roubles, i.e. two times more. In 2023, the "Krug Dobra" foundation for support of children will receive from the federal budget a grant in the form of a subsidy for around 41 billion roubles.

Figure 25

Hospital purchase dynamics, by programme, billion roubles



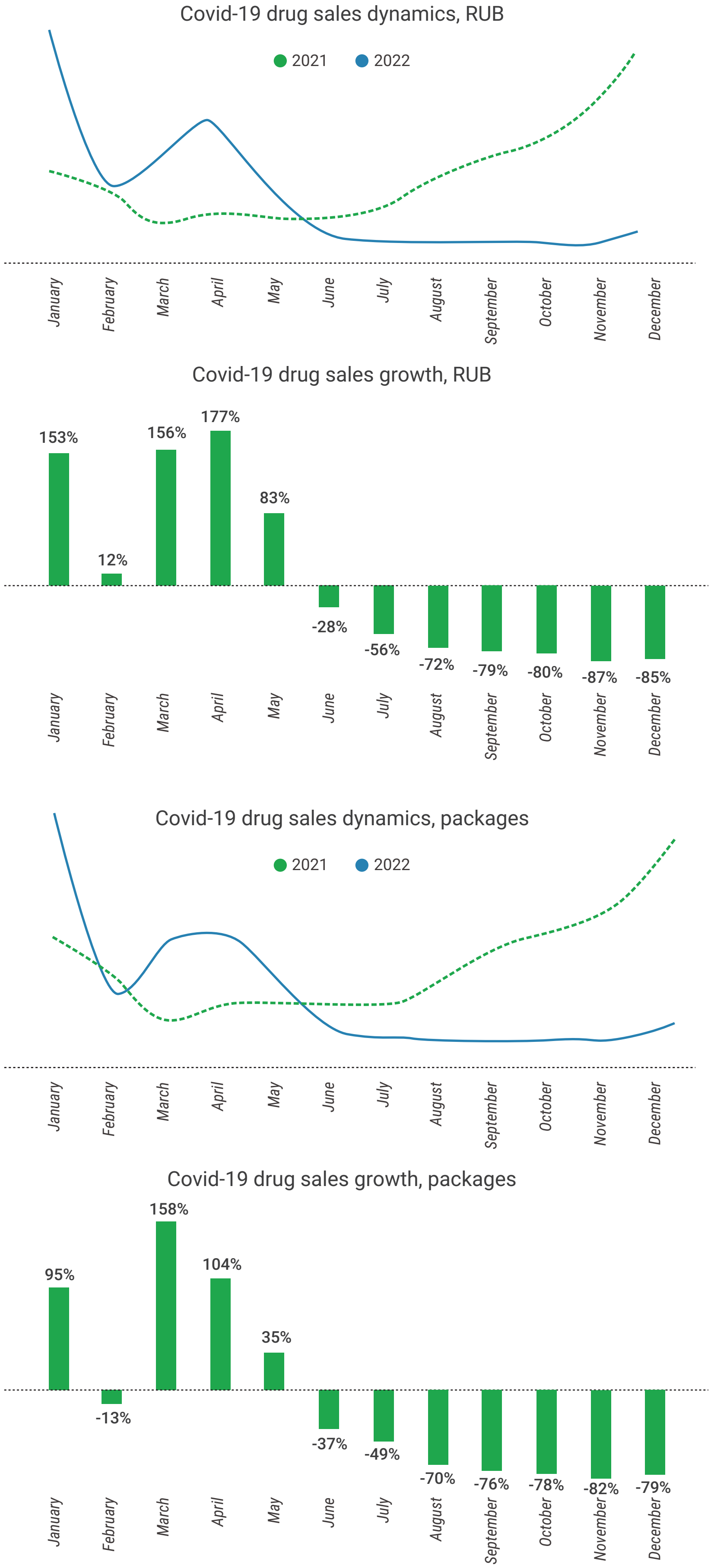


Figure 26

Seasonality of purchases of Covid-19 drug groups in the public segment of the pharmaceutical market, 2021-2022

From 1 January 2023, a new, refined procedure will be put in place to regulate the public funding of the purchases of drugs for children and adults with orphan diseases under the 14 ICD Programme. Patients aged 18 years old and above will be provided with drugs out of the public funds allocated to the Ministry of Health. Children and teenagers will be provided with drugs at the expense of the budgetary allocations for the "Krug Dobra" foundation.

Moreover, the foundation has volunteered to be responsible for providing medical care in 2023 to children with severe, life-threatening diseases for another year after they come of age. In 2023, 258 teenagers under the care of the "Krug Dobra" foundation have turned or will turn 18 years old.

To improve the efficacy of care for children, the foundation is also planning to sign in 2023 agreements for cooperation with all regions of Russia. The first region to sign the agreement was the Moscow region.

The list of diseases, for which the foundation is already offering support, continues expanding, and now covers 61 ICD codes. In 2022, 15 ICD codes were added to the list; and at the beginning of 2023, two more diseases were added – external auditory canal atresia and microtia. There are 59 drugs and medical products on the list of purchases for the foundation. As at February 2023, medical care has been or will be provided under approved requests already to more than 5,000 children.

The foundation continues supplying children with spinal muscular atrophy (SMA) with the necessary drugs, including Zolgensma, which is currently the most expensive drug out of the three purchased by the foundation (purchases in 2022 were worth 5.5 billion roubles).

Yet, Zolgensma is only second by purchase volumes. Most of the money was spent on buying Evrysdi (8.9 billion roubles), third comes Spinraza (4.2 billion roubles).

Swiss Roche is localizing in Russia its Evrysdi (INN-risdiplam) used to treat spinal muscular atrophy (SMA). The process of localization has already started on the Dobrolek production site in Moscow (GC PharmEco). Localized in Russia, the drug will be offered for sale in July 2023.

The Russian bio-tech company Biocad has applied to the Ministry of Health for conducting a clinical trial of the first Russian original gene therapy drug named ANB-4 to treat SMA. The trial is scheduled to be completed in June 2031.

2023 is planned to be the year of the launch of the federal project on **fighting diabetes**: the project aims to refine the approaches to the treatment of the disease. 10 billion roubles of public funds have already been reserved for the project. In particular, the allocated funds will include revenues from excise taxes on sugary drinks, introduced as from 1 July 2023.

According to Rosstat (the Federal State Statistics Service), over 5 million people have been officially registered in Russia as having diabetes. However, according to the National Medical Research Centre for Endocrinology, the number of patients with diabetes is much higher – around 10 million people. Russia currently ranks 5th in the world by the number of patients with diabetes aged from 20 to 79 years old. In the last 10 years, patient mortality has increased two-fold, and average life expectancy has decreased (with Type 1 diabetes – by 4 years, with Type 2 diabetes – by 1 year).

Imported/localized drugs ratio

In 2022, purchase volumes in the HCI segment in money shifted in favour of imported drugs. Over the year, the share of foreign-made drugs grew by 3.6% in roubles, to 52.8%. Yet, in packages advantage was gained by localized drugs: up to 84.6% (1 percentage point up).

Purchased packages and expended amounts in the category of localized drugs dropped by -5.9% in roubles and -32% in packages. The purchases decreased mostly on account of the decline in the consumption of the following brands: the monoclonal antibody Artlegia (-62.0% against 2021), and the antivirals against the novel coronavirus infection Areplivir (-38.1%) and Coronavir (-32.7%). Among the drugs made in Russia, high growth rates were demonstrated by the influenza vaccine Sovigripp (+142.7%), the antiviral [HIV] Tivicay (+57.9%), and the antiviral Remdeform (+50.2%) to treat COVID-19 in adult patients with pneumonia requiring supplemental oxygen.

Despite a 36.8% drop in sold packages, purchases of imported drugs grew by 8.8% by value. The growth in sales of imported drugs was mostly on the account of purchases of the monoclonal antibodies Keytruda (+189.5% against 2021) and Tecentriq (+146.1%), and the tissue repair stimulating agent Translarna (+167%).

At the end of 2022, the average weighted per package price of an imported drug was 3,683 roubles, which is 72.3% more than a year earlier. The average price of localized drugs grew by 38.4%, yet, coming to 601 roubles per package it is still far behind (almost 6 times) the price of imported drugs.

The leaders among foreign manufacturers that now are producing drugs in Russia are GlaxoSmithKline (25.3%), AstraZeneca (14.6%), and Merck & Co (13.1%). Most of localized drugs are antimicrobials and drugs acting on blood and blood forming organs.

Though in 2022 more funds were allocated for imported drugs, the process of import substitution continues. Below are the top 10 INNs with a maximum rate of shift to localized drugs from the top 100 by purchase volumes (these INNs account for 73% of all hospital purchases in money).

The INNs put on the list in 2022 differed from those listed in 2021. Only 4 INNs (human normal immunoglobulin, dalteparin sodium, nadroparin calcium and fulvestrant) remained in the ranking for a second year in a row. So, each year the import substitution trends cover more and more nomenclature items.

Two INNs are in the ranking by the growth of the share of localized drugs: a year earlier, the best-seller among them was a Russian drug (highlighted in green); the growth was due to increased purchase volumes or to the fact that several other domestic drugs were added to the procurement list.

Another INN worth mentioning is the pneumococcal vaccine that was ranked among active substances by import substitution owing to the increased purchases of Pfizer's already localized

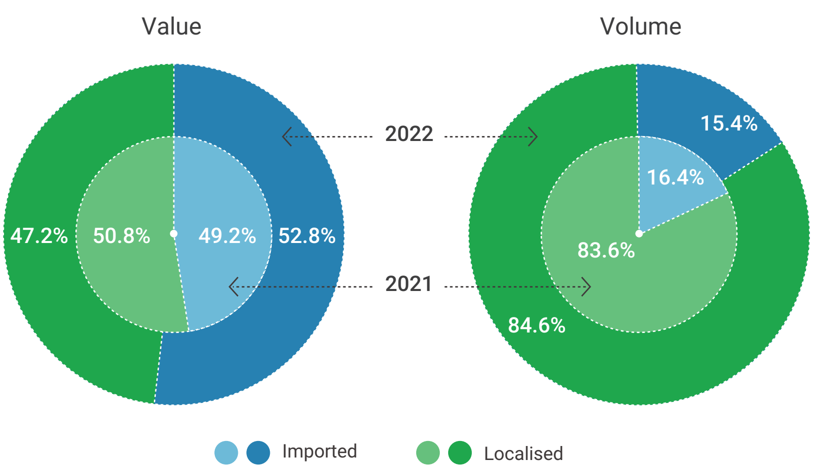


Figure 27

HCI segment structure by localization degree, 2021-2022

Prevenar (manufactured in the Moscow region at Petrovax Pharm production facilities). Over the year, the share of the localized drugs under this brand grew by 7%.

Among new INNs that got into the top 100 in 2022 were:

- the antiviral molnupiravir to treat coronavirus: 6 drugs were purchased – Merck & Co's imported Lagevrio (MSD), and localized Alario brands from R-Pharm, Molnupiravir made by as many as several manufacturers (Valenta Pharm, Geropharm and Mirpharm), and Esperavir from Promomed Rus;
- the protein tyrosine kinase inhibitor selumetinib used in monotherapy to treat symptomatic, unresectable plexiform neurofibromas (AstraZeneca's Koselugo brand);
- the monoclonal antibody against the coronavirus S protein regdanvimab (Celltrion Healthcare's Regkirona brand);
- the monoclonal antibody against SARS-CoV-2 sotrovimab (GlaxoSmithKline's Sotrovimab brand).

According to the data for 2022, localized drugs exceed 90% in 812 INNs out of 2,027 INNs purchased by hospitals. And there are still 773 INNs in which imported drugs prevail (accounting for over 90% in purchases); 50 of them are in the top 100 by volume. Among the most intensive INNs represented only by imported drugs remain: the monoclonal antibodies pembrolizumab and nivolumab, and risdiplam to treat SMA — these three INNs account for 7.6% of hospital purchases.

Price segmentation

The structure of HCI purchases by price segments is shown in Figure 28.

In 2022, the price structure of hospital purchases noticeably changed. The high-price segment of "more than RUB 500" grew by 3.6% in roubles and by 4.6% in packages. All other categories declined in the volume of purchases of drugs for HCI. The biggest decline was in drugs priced from 150 to 500 roubles: their share shrank from 7.7% to 5.8% over the year. However, in packages this price segment grew by 2%. So, priority was given to more expensive drugs.

As before, in packages the largest segment is that of drugs priced of up to 50 roubles: it accounts for 39.3%. In 2022, the share of this price segment notably dropped – by 4.7% compared with 2021. As before, among the most purchased are INN-Sodium chloride drugs (31.6% of the physical volumes of drugs priced "less than RUB 50"). Purchases of sodium chloride significantly dropped – by 42.7% in packages.

The structure in packages changed in favour of the "RUB 150-500" segment (+2%) due to the increased purchases of Omeprazole (+2,942.2%); in favour of the "more than RUB 500" segment (+4.6%) – owing to purchases of vaccines against diphtheria, pertussis, poliomyelitis, tetanus and infections caused by Haemophilus influenzae type B (+75.1%), influenza vaccines [inactivated] (+50.4%), and the antiviral for HIV, Lopinavir + Ritonavir (+61.6%).

The highest share among imported drugs is held by drugs priced over 500 roubles: 97.8% (Figure 26). Among localized drugs, the share of the price segments «less than RUB 50» (1.9%), «RUB 50-150» (2.7%) and «RUB 150-500» (10.3%) is insignificant; the highest rate of sales accounting for 85% was also in the segment «more than RUB 500".

In the segments where the price per package is up to 500 roubles the difference between the weighted average price for imported and for localized drugs is not so perceptible whereas in the largest segment of drugs "priced over 500 roubles" the difference between Russian and foreign drugs is still fairly marked: almost three-fold.

Structure of sales of drugs by ATC codes

The ratio of hospital purchases in Russia at the end of 2022, by ATC codes, 1st level, is shown in Table 16.

The ranking of drugs in the HCI segment by ATC codes is much different from that on the commercial market. The TOP 2022 ranking differs from the ranking of the previous year.

Over the year, purchases of drugs from [J] Anti-infectives for Systemic Use grew by 25.7 billion roubles. As a result, by the market share the group moved closer to the leader – antineoplastic agents. Once again, the reason for that is the demand for antiviral drugs and vaccines. Compared with 2021, the volume of purchases in [J05] Antivirals for Systemic Use and [J07] Vaccines noticeably increased – by 41.8% and 23.5% respectively. A significant decline in purchases was for antibacterials for systemic use (ATC code [J01]): their sales dropped by 38.4% (-16.9 billion roubles).

High dynamics among the ten key INNs from [J] was demonstrated by: the multicomponent vaccine against diphtheria, pertussis, poliomyelitis, tetanus and infections caused by Haemophilus influenzae type B (+74% against 2021); the antivirals for HIV, raltegravir (+67.6%), dolutegravir (+57.9%), and lopinavir + ritonavir (+46.6%); the drug to treat the novel coronavirus infection in adults with pneumonia requiring supplemental oxygen, remdesivir (+65.1%).

In 2022, two new INNs appeared in the top ten. During the year, purchases of drugs with the molnupiravir active substance by HCI were worth 12.5 billion roubles. The antiviral is rec-

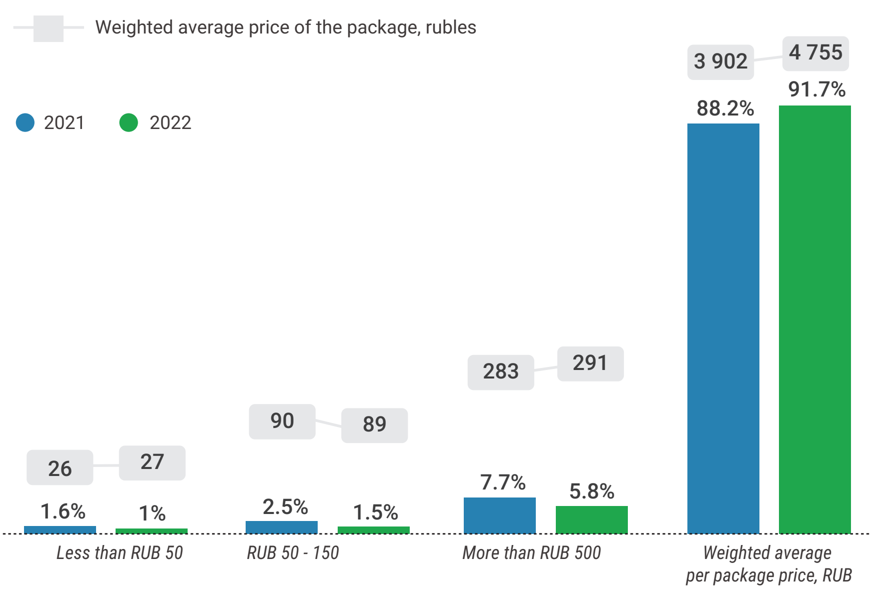


Figure 28

Structure of hospital purchases, by price segments, by value, 2021-2022

Table 16

Top 10 INNs in terms of import substitution, by value, 2022

Ranking	INN	Share of localized drugs, roubles 2021	Share of localized drugs, roubles 2022	Share growth	Top-selling drug (manufacturer), 2021	'Shift-to' drug (manufacturer), 2022
1	Fulvestrant	**15%**	**47%**	**+32%**	**Faslodex** (AstraZeneca)	**Fazotikad** (Biocad), **Fulvesan** (Pharmasyntez)
2	Nadroparin calcium	**33%**	**58%**	**+24%**	**Fraxiparine** (Aspen Pharma)	**Elmaparin** (Grotex), **Nadroparin calcium** (GosNIIOKhT), **Detrombin** (Protek)
3	Darunavir	**77%**	**99%**	**+22%**	**Darunavir** (Pharmasyntez)	**Kemeruvir** (Pharmasyntez)
4	Trastuzumab	**48%**	**59%**	**+11%**	**Herceptin** (F.Hoffmann-La Roche)	**Herticad** (Biocad)
5	Albumin human	**28%**	**38%**	**+11%**	**Albumin** (Octapharma)	**Albumin** (Nacimbio)
6	Iohexol	**12%**	**22%**	**+9%**	**Omnipaque** (Ge Healthcare)	**Ringaskan** (Pharmasyntez), **Iohexol** (Binergia)
7	Bevacizumab	**88%**	**96%**	**+9%**	**Avegra** (Biocad)	**Avegra** (Biocad)
8	Pneumococcal vaccine	**69%**	**76%**	**+7%**	Prevenar (Pfizer)	Prevenar (Pfizer)
9	Human normal immunoglobulin	**34%**	**41%**	**+7%**	**Privigen** (CSL Behring)	**Human immunoglobulin** (Nacimbio), **Immunovenin** (Nacimbio), **Gabreglobine** (Immuno-Gem)
10	Dalteparin sodium	**28%**	**33%**	**+5%**	**Fragmin** (Pfizer)	**Daltep** (Pharmasyntez)

ommended for treatment profiles and is used to treat mild and moderate forms of COVID-19 in adults, including forms with an increased risk of progression to severe Covid that do not require supplemental oxygen.

7.7 billion roubles were expended on the purchases of the virus-neutralizing monoclonal antibody against SARS-CoV-2 Tixagevimab + Cilgavimab (AstraZeneca's Evusheld brand). The drug was registered in Russia as late as at the end of 2022. The drug is prescribed to treat all COVID-19 forms, in combination with or without using antivirals, in patients who are subject to high risks of severe illness and suffer from concurrent diseases (for example, immunodeficiency, diabetes, chronic cardiovascular diseases, obesity, etc.). The drug was added in the 17th update of the Provisional Guidelines on the Prevention, Diagnosis and Treatment of the Novel Coronavirus Infection (COVID-19).

A reverse trend is with the drugs acting on blood and blood forming organs – [B] group dropped by value by 26.5% compared with the previous year. Sales declined for nine out of ten key INNs. The heaviest drop was in the purchases of the anticoagulants Heparin Sodium (-49.9%), Enoxaparin Sodium (-46%), and Dalteparin Sodium (-33.3%).

The 48.8% growth in the purchase volumes by value in ATC [R] Respiratory System was largely due to the demand for ivacaftor + lumacaftor (the Orkambi brand from American Vertex Pharmaceuticals) used in the treatment of cystic fibrosis. The drug was purchased by the "Krug Dobra" foundation for its patients.

In the last few years, [L] Antineoplastic and Immunomodulating Agents are on top in the hospital purchases segment (a 35.7% share by value), thus demonstrating a noticeable increase in purchases by 2.8% (purchases of drugs in this category grow every year since 2013). The growth in the sales in [L] was mainly due to the increased purchases of [L01] Antineoplastic Agents (+19.6% in roubles), specifically, the monoclonal antibodies Keytruda (+189.5%) and Erbitux (+142%) from Merck & Co, and Tecentriq (+146.1%) from F.Hoffmann-La Roche. In volume terms, purchases of antineoplastic and immunomodulating agents were observed to decline: -19.2%.

Manufacturers in the hospital purchases segment

Table 18 shows the ranking of the top 20 manufacturers in the HCI segment at the end of 2022; it is much different compared with the

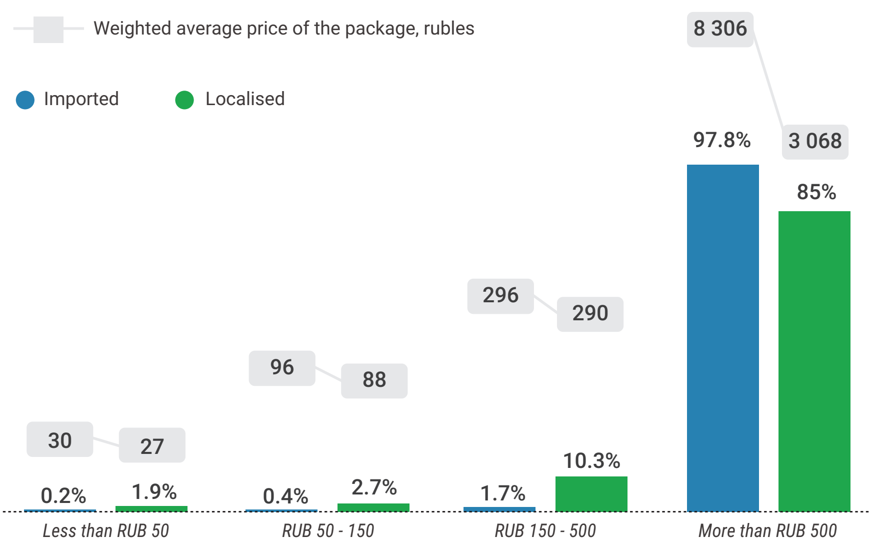


Figure 29

Structure of hospital purchases, by price segments, imported and localized drugs, by value, 2022

Table 17

Hospital purchase structure, by ATC code, 2022.

ATC code 1st level	Value, bln roubles	Share in value terms	Volume, mln packages	Share in volume terms
[L] Antineoplastic and Immunomodulating Agents	211.7	35.7%	24.3	4.4%
[J] Antiinfectives for Systemic Use	196.5	33.2%	181.6	33.0%
[B] Blood and Blood Forming Organs	63.3	10.7%	129.4	23.5%
[M] Musculoskeletal System	31.8	5.4%	13.7	2.5%
[A] Alimentary Tract and Metabolism	20.7	3.5%	42.8	7.8%
[N] Nervous System	16.4	2.8%	53.3	9.7%
[V] Various	15.3	2.6%	12.4	2.3%
[R] Respiratory System	12.6	2.1%	16.0	2.9%
[S] Sensory Organs	6.7	1.1%	3.3	0.6%
[C] Cardiovascular System	6.2	1.0%	37.5	6.8%
[H] Systemic Hormonal Preparations, Excluding Sex Hormones	4.3	0.7%	12.5	2.3%
[D] Dermatologicals	3.3	0.6%	20.8	3.8%
[G] Genitourinary System and Sex Hormones	2.1	0.3%	2.3	0.4%
Non-ATC	1.3	0.2%	0.2	0.0%
[P] Antiparasitic Products, Insecticides and Repellents	0.0	0.0%	0.2	0.0%

previous year, both in terms of manufacturers as well as in terms of their positions. The top 3 manufacturers are companies with a high proportion of drugs for the treatment of oncological diseases.

Public funds spent in 2022 on purchases of Merck & Co's drugs totalled 41.3 billion roubles, which is 90.4% more than a year earlier. As a result, the manufacturer moved 4 position lines upward and got on the top. The major contribution to the growth was from ATC [L] drugs (+168.8%). All in all, the company supplies 58 drug brands to hospitals. The fastest-growing brands in the top 10 are: Keytruda (+189.5%), Erbitux (+142%), and Isentress (+67.6%).

Russian Biocad moved up to rank second: the company's purchases grew only by 4.4% against 2021. Over the year, HCI purchased 38 brands that substitute for foreign-made equivalents under the import substitution programme. The highest growth in the hospital expenditures was for antineoplastic Forteca (+115.1%), Avegra (+36.9%), and Herticad (+28.8%).

F.Hoffmann-La Roche (+23.9%) remained the year-end third. The company's hospital portfolio includes 41 brands. F.Hoffmann-La Roche's best-seller is Evrysdi for the treatment of spinal muscular atrophy (SMA) in adults and children. Other 11 key brands belong to [L]. All in all, 12 basic drugs account for around 98.9% of the volumes purchased from the Swiss corporation.

There are 6 domestic manufacturers in the top 20 by value of hospital purchases: Biocad (2nd), Pharmasyntez (4th), Nacimbio (7th), R-Pharm (9th), Promomed Rus (12th), and ChemRar Group (19th). The top performers among the Russian manufacturers were Promomed Rus (+46.1%) and Nacimbio (+40.1%). Promomed Rus supplies over 130 brands to hospitals; over the year, 19 more brands appeared in the company's portfolio. 97% of the company's sales by value are antivirals and antibiotics. In 2022, HCI purchased the manufacturer's main drug to treat COVID-19, Esperavir (INN-Molnupiravir) for around 9.6 billion roubles; purchases of the antiretroviral Ritonavir made at the end of the year for 288.6 million roubles. The fastest-growing in the top ten were the antibacterials Cefoperazone+Sulbactam (+53%), Cefotaxime (+32%), and Meropenem (+13.6%).

Among Nacimbio's major drugs, a noticeable increase in the purchase volumes was observed for the diphtheria and tetanus toxoid Anatoxin (+1,526.1%), immunoglobulins Covid-Globulin (+690.2%) and Human Immunoglobulin (+224.4%), and the influenza vaccine Sovigripp (+142.7%). In 2022, the company's hospital portfolio comprised, all in all, 63 brands.

A decline in the purchases compared with 2021 was observed for six manufacturers from the ranking. The heaviest decline was seen with R-Pharm (-43.5%), Eli Lilly (-23.9%), and Pfizer (-14.7%).

Drugs in the hospital purchases segment

Table 19 shows the top 20 brands in the HCI segment at the end of 2022. The top 20 brands in hospital purchases account for 31.2% – 1.7% more than in the previous year.

The ranking changed drastically: in 2022, only one drug from the top 20 retained its 2021 position – the interleukin inhibitor Ilsira.

The leader at the end of 2022 was Merck & Co's Keytruda (+189.5%, +9 position lines over the year). Monoclonal antibodies are among the latest achievements in pharmacology, they are a new class of targeted action drugs. The

Table 18

Hospital purchase structure, by ATC code, 2022

Note: *«manufacturer» means the parent company that may incorporate several production sites.*

Ranking	Change against 2021	Manufacturer	Purchase volume, mln roubles	Share	Growth to 2021
1	+4	Merck & Co	**41 287**	**7.0%**	**90.4%**
2	-1	Biocad	**36 772**	**6.2%**	**4.4%**
3	-	F.Hoffmann-La Roche	**36 417**	**6.1%**	**23.9%**
4	-	Pharmasyntez	**30 869**	**5.2%**	**19.2%**
5	+5	AstraZeneca	**24 752**	**4.2%**	**67.1%**
6	+1	Swixx Biopharma	**20 483**	**3.5%**	**3.4%**
7	+6	Nacimbio	**18 794**	**3.2%**	**40.1%**
8	+4	Novartis	**18 531**	**3.1%**	**37.7%**
9	-7	R-Pharm	**18 408**	**3.1%**	**-43.5%**
10	+1	GlaxoSmithKline	**18 408**	**3.1%**	**32.3%**
11	-5	Pfizer	**17 786**	**3.0%**	**-14.7%**
12	+4	Promomed Rus	**17 630**	**3.0%**	**46.1%**
13	-5	Bayer	**17 468**	**2.9%**	**-11.5%**
14	-5	Sanofi	**15 680**	**2.6%**	**-7.0%**
15	-	Johnson & Johnson	**12 691**	**2.1%**	**2.6%**
16	+7	AbbVie	**8 675**	**1.5%**	**36.7%**
17	+29	PTC Therapeutics	**7 937**	**1.3%**	**167.0%**
18	-1	Eli Lilly	**7 335**	**1.2%**	**-23.9%**
19	+11	ChemRar Group	**6 858**	**1.2%**	**38.1%**
20	-	Amgen	**6 726**	**1.1%**	**-14.7%**

Table 19

Top 20 brands in the HCI segment by value, 2022

Ranking	Change against 2021	Brand	Purchase volume, mln roubles	Share	Growth to 2021
1	+9	Keytruda	**21 493**	**3.6%**	**189.5%**
2	-	Ilsira	**15 277**	**2.6%**	**2.3%**
3	+1	Opdivo	**14 821**	**2.5%**	**23.3%**
4	+7	Tivicay	**10 628**	**1.8%**	**57.9%**
5	new	Esperavir	**9 618**	**1.6%**	**new**
6	+19	Sovigripp	**9 386**	**1.6%**	**142.7%**
7	+5	Evrysdi	**8 877**	**1.5%**	**40.9%**
8	-7	Artlegia	**8 196**	**1.4%**	**-62.0%**
9	+9	Remdeform	**8 139**	**1.4%**	**50.2%**
10	+35	Translarna	**7 937**	**1.3%**	**167.0%**
11	new	Evusheld	**7 724**	**1.3%**	**new**
12	+16	Perjeta	**7 645**	**1.3%**	**112.1%**
13	+3	Avegra	**7 424**	**1.3%**	**36.9%**
14	+15	Kadcyla	**7 403**	**1.3%**	**109.2%**
15	-7	Xarelto	**7 367**	**1.2%**	**-18.4%**
16	+10	Pentaxim	**6 804**	**1.1%**	**77.1%**
17	-11	Coronavir	**6 527**	**1.1%**	**-32.7%**
18	+33	Tecentriq	**6 489**	**1.1%**	**146.1%**
19	-10	Sodium Chloride	**6 463**	**1.1%**	**-20.8%**
20	+431	Orkambi	**6 420**	**1.1%**	**3455.8%**

concentrate for solution for infusion Keytruda is purchased by HCI for patients with malignant neoplasms. The drug is used to treat a pool of tumours: melanoma, non-small cell lung cancer (NSCLC), head and neck cancer, classical Hodgkin lymphoma (cHL), urothelial carcinoma, and others.

Ilsira, an immunosuppressant by Russian Biocad, ranks 2nd (+2.3%): the drug is used in the treatment of rheumatoid arthritis and in the pathogenic therapy for the cytokine release syndrome in case of severe forms of the novel coronavirus infection. The drug is in the form of a solution for subcutaneous injection.

Opdivo by Swixx Biopharma moved over the year one position line upward to rank third among the brands, having increased its purchase volumes by 23.3%. The antineoplastic is used to treat melanoma, NSCLC, renal cell carcinoma, cHL, and other tumours.

As before, the coronavirus has its impact on the hospital market. New drugs to treat the viral infection are being released. In the top 20, there are two new drugs that were not purchased in the previous year: Esperavir (ranking 5th) and Evusheld (ranking 11th); both drugs are used to treat the novel coronavirus infection.

The clinical trial of MIR-19 designed to treat COVID-19 was completed in 2022. The drug is in the form of a throat or nasal spray for inhalation or intranasal administration. The drug started to be purchased only at the end of the year: the sales made for 9.5 thousand packages for more than 33 million roubles.

The highest growth dynamics was demonstrated by Orkambi (+3,455.8%) used to treat cystic fibrosis in children aged 6 and more years old, purchased by the “Krug Dobra” foundation. The drug is manufactured by Vertex Pharmaceuticals.

Four drugs from the top twenty dropped in sales: the monoclonal antibodies Artlegia (-62%), the antiviral Coronavir (-32.7%), the rehydrating and solvent agent Sodium Chloride (-20.8%), and the anticoagulant Xarelto (-18.4%).

The ranked drugs are: monoclonal antibodies to treat malignant tumours – 6 brands; antivirals against COVID-19 – 4 brands; vaccines – 2 brands; drugs used in the treatment of rheumatoid arthritis and in the pathogenic therapy for the cytokine release syndrome in case of severe forms of COVID-19 – 2 brands; anticoagulants – 1 brand; drugs used to treat cystic fibrosis – 1 brand; drugs used to treat Duchenne muscular dystrophy (DMD) – 1 brand; drugs to treat SMA – 1 brand; HIV antivirals – 1 brand; rehydrating and solvent agents – 1 brand.

Besides high-cost imported drugs, the top twenty include also the low-cost rehydrating and solvent agent Sodium Chloride (-20.8%, -10 position lines). Despite a major decline in the purchases of Sodium Chloride (-41.7% in packages), in 2022 the drug remains on top in packages, accounting for 14.2% of all purchases in the hospital segment. 35 manufacturers are marketing drugs under this brand. The leaders in 2022 were Eskom, Mosfarm, and Kelun-Kazpharm.

5. Dietary Supplements

Over the last few years, the Russian DS market has seen radical changes. The changes have been caused by the coronavirus pandemic that made consumers pay more attention to their health and disease prevention, the development of the online trade segment with the extension of existing product lines, and changes in the audience categories consuming supplements (the average category consumer age has dipped). All this contributes to the fast growth of this market segment and, at the same time, makes it most promising for launching new product items for sales.

This trend became particularly visible after remote sales of DS were officially authorized. Before 2020, it was prohibited to sell DS online. DS were allowed to be sold at pharmacies, pharmacy stores and kiosks, specialized stores selling health foods, and food stores. From January 2021, DS and vitamins were allowed to be sold online. It brought into being a great number of Websites offering a variety of supplements. In consequence, a critical problem of 2022 was the appearance of counterfeit and fake dietary supplements, and the inspections revealed an increased number of non-conformities in the segment.

For example, for the first six months of 2022 the Centre for Strategic Research (CSR) reports that:

- Nearly a quarter (24%) of the dietary supplements (DS) sold online are not officially registered;
- Substances not authorized for use in Russia or EAEU countries were found in 19% of products;
- In 17% of cases, the supplement description misled the consumer promising unrealistic time for feeling the desired result or effects;
- The most common non-conformity was that the prescribed product information was missing in the product cards.

The volume of "unsafe" products increased by 40% against the previous year. In this context, revision and, in some cases, even tightening of the existing regulations on the trading of dietary supplements, are of crucial importance. There are a number of initiatives at issue, which can be potentially implemented.

One of them is the enactment of the draft law for the out-of-court blocking of Web pages offering for sale unsafe products classified as DS. The law can take effect from 1 September 2023. At the moment, online sales channels widely offer for sales DS that have not been properly assessed for their quality conformity; the mix of products offered as DS is much wider than the list of officially registered DS. As a countermeasure, traditional marketplaces started demanding (on a forcibly voluntary basis) that sellers present certificates of the state registration of products (DS) and introduced an automatic check of the uploaded documents by means of integration with the DS certificate register maintained by ECE. For example, Wildberries started doing it in October 2022, which reduced sales of supplements in this marketplace because many items failed the checks.

A more effective instrument to control trading of DS will be labelling. The pilot project was launched back in May 2021, but the completion deadlines are yet being postponed. According to the most recent data, the project is expected to be completed by 28 February, and from 1 April 2023 DS labelling will become mandatory for everyone. As at February 2023, there are 4,495 pilot project participants. Remote sales of dietary supplements with the "Chestny Znak" code are one of the milestones of the pilot project on labelling, which is currently underway in Russia. 2022 saw the first online sales of labelled DS. A labelled batch of Uniforce's Omega 3-6-9 was offered to Ozon clients.

DS manufacturers (1,157 companies) are a little more numerous than drug producers (893 companies). And there are only about 240 companies that produce both drugs and DS. It means that most manufacturers must get ready for labelling from scratch. It should be mentioned that the Ministry of Industry and Trade is willing to offer DS manufacturers concessional loans for the purchase of equipment for the labelling system. Loans can amount to 50 million roubles at 1% for two years.

Besides the mandatory labelling deadlines, there are also deadlines for submission of information about trading volumes and withdrawal of DS from circulation: from 1 September 2023 — for retailers, from 1 November of the same year — for wholesalers for purposes of volume/SKU accounting, and from 1 March 2025 — for wholesalers for purposes of item-by-item accounting.

In most cases, when counterfeit supplements or supplements not authorized for use in Russia are detected, such products are imported ones. Among other things, this is due to the differences in the legislative framework that makes it possible to classify products as dietary supplements. In response to this, the Russian authorities are considering banning imports of DS from unfriendly countries – 90% of the currently imported products come from unfriendly countries.

Anyway, famous manufacturers and foreign marketplaces were already forced to leave the Russian market because of the geopolitical situation. In 2022, foreign companies that were independently selling dietary supplements (not through the commercial segment of the pharmaceutical market) started having big problems with promoting and selling their products, and some of them totally suspended their business. For example, now it is impossible to order products from iHerb because the Website of the American marketplace is blocked. Amway and Herbalife stopped importing products from abroad and are closing their pickup outlets.

Russian consumers remain appealing for foreign companies all the same, and foreign businesses keep looking for a way to sell their products. Yandex.Market started selling products of iHerb own brand. California Gold Nutrition vitamins are offered on the Website in the "Health Products" category.

Dietary supplements are one of the most popular categories for the appearance of own brands. Over a few years, their share grew multi-fold. In 2022, own brands already account for around 12% of pharmacy sales in roubles and 18% in packages. Own brands are demanded because this category helps pharmacies to boost profits in today's challenging economic environment. Generally, the markup on DS is higher than the markup on drugs, yet, seeking to maintain competitive prices and to attract customers, pharmacies have to lower the markup on this product group: in 2022, the markup on DS was 26.5%. Compared with 2021, the figure dropped by 6%, and with 2018 – by 10%. At the same time, the markup on dietary supplements promoted as own brands is higher – at the end of 2022, it was about 60%.

That is why, supply on the market for own brands keeps growing. Every chain starts offering the best-selling items under its own brand.

In 2022, even the private medical company Invitro announced launching a line of dietary supplements under its own brand. The company sells six types of DS that can be bought at any medical office (over 1,800), the Invitro online store, and also in marketplaces. Suppliers are the Russian manufacturers Kvadrat-C and Skalny. The line of dietary supplements is part of a large-scale Invitro own brand promotion project. At the moment, the company's products can be found in the following categories: hygiene, self-tests, medical products, and cosmetic products.

Sber Eapteka offered consumers its own line of DS under the Love Botanica brand. The e-pharmacy's supplements brand includes eight names, with Vitamin C and D, and also special complexes — sedatives, weight loss complexes, and others.

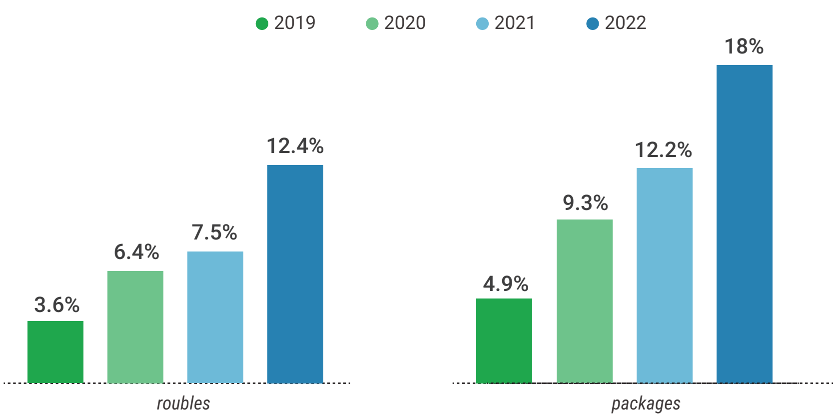
The eCom segment continues growing rapidly: own Websites of pharmacy chains, pharmacy marketplaces (Apteka.ru, Zdravcity.ru, Asna.ru), pharmacy integrators (Uteka, 009, Aptekamos), and traditional marketplaces (Ozon, Yandex). Among the main types of pharmacy products, the DS category holds the highest share in eCom – 17.7% of the total capacity of the pharmacy market for dietary supplements at the end of 2022.

Traditional marketplaces most commonly offer consumers a wider choice of supplements. That is why pharmacy sales ranks are different from marketplace ranks. For example, the first-ranking by sales in Ozon is Solgar. Top-ranked are manufacturers such as GLS, Pharmaceuticals, Natrol, and Maxler. At the same time, Evalar that has maximum volumes in pharmacy sales of DS ranks only second, with revenues 2 times lower than the leader's.

Thanks to the popularity and the expansion of the product offering, the DS category is one of the few demonstrating positive dynamics in packages. The spread of the coronavirus infection, specifically, in 2020-2021, accounts for the popularity of DS with Vitamins D3 and C. In 2022, the number of novelties in these categories keeps growing though the sales growth is not so notable as it used to be. For example, the volumes of offered DS with Vitamin C have grown by 36% but sales dropped by 16%. The Vitamin D3 group is still growing +61% in SKU and +18% in money, but the focus of supply is shifting onto new categories. In 2022, the collagen DS range increased by 63%, and turnovers

Figure 30

Own brands in pharmacy sales of DS



in value terms grew by 59%. Amid tension and stress, the high-capacity group of sedative and mild hypnotic DS (N02B) became even more popular: nearly 100 new names appeared, and sales grew by 17%. The magnesium DS group is also growing: by 68% in roubles (today, about 280 DS names of the category can be found in pharmacies).

The pharmacy channel remains the most stable one. In 2022, the capacity of the commercial market for dietary supplements was 105 billion roubles and 364 million packages. In the last four years, the market for food supplements has been growing at double-digit rates. In particular, in 2022 the market grew by 19.8% compared with the previous year.

In 2022, the peak was observed in the 1st quarter that made for around 30.7% of the annual turnover in roubles. The highest growth against 2021 was in March (+74.7% in roubles to the 3rd month of the previous year) and in February (+38.6% to February 2021).

In 2022, the consumer paid on average 288 roubles per package of DS (retail price), which is 19.2% more than a year earlier. The DS weighted average cost for pharmacies is roughly 226 roubles .

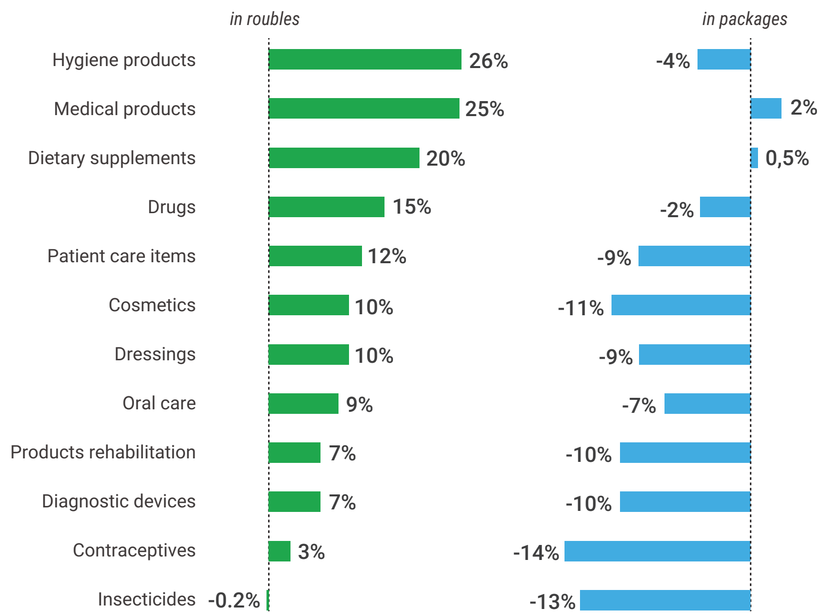
Customers switched to more expensive supplements and the prices grew. It had a significant impact on the sales structure by price categories. A considerable sales growth was witnessed by the high-price segment (+33.1% in roubles, and +25.8% in packages). As a result, the DS market structure in terms of the price categories changed giving predominance to supplements priced over 500 roubles – the share of this supplement group grew by 6.1% in value and by 3.8% in volume. As a result, high-cost food supplements brought in more than half the revenues for pharmacies (a 60.6% share in roubles), compared with only 39.6% in 2018.

Second in size on the market are supplements at «RUB 300-500» (a 17.2% share in roubles). The share of this segment dropped over the year by 3.3% in roubles.

Cheap supplements are still the most highly demanded by Russian customers, despite a drop in their sales by 5.8% in roubles and by 13.8% in packages. In consequence, products

Figure 31

Dynamics of sales of the main product groups in 2022 against 2021



“below RUB 50” are being gradually pushed off the shelves: in 2022, their share shrank by 5.1% to 30.5% of sold packages. Due to the low value in roubles, the lower segment hardly goes beyond 3% (-0.7% in comparison with 2021). Hematogen and Ascorbic Acid brands account for around 40% of the sales in packages in the «below RUB 50» segment.

The highest share of own brands is in the “RUB 150-300” segment (about 23% of the sales volumes in the price category, both in roubles and in packages). This segment also grew to 2021 by 11.4% in roubles, and by 11.8% in packages. The top brands in this price segment are Vitamir and Evalar.

The changes in prices for dietary supplements have been analyzed by using the Laspeyres price index. One of the reasons for the rise in the weighted average prices was the DS inflation rate. In 2022, DS prices in roubles grew by 12%, 2.5 times more than in 2021. Most of all, the prices rose in May-April 2022. By contrast with drugs, prices for which started going down since the summer, the rate of inflation for dietary supplements remained high throughout the year.

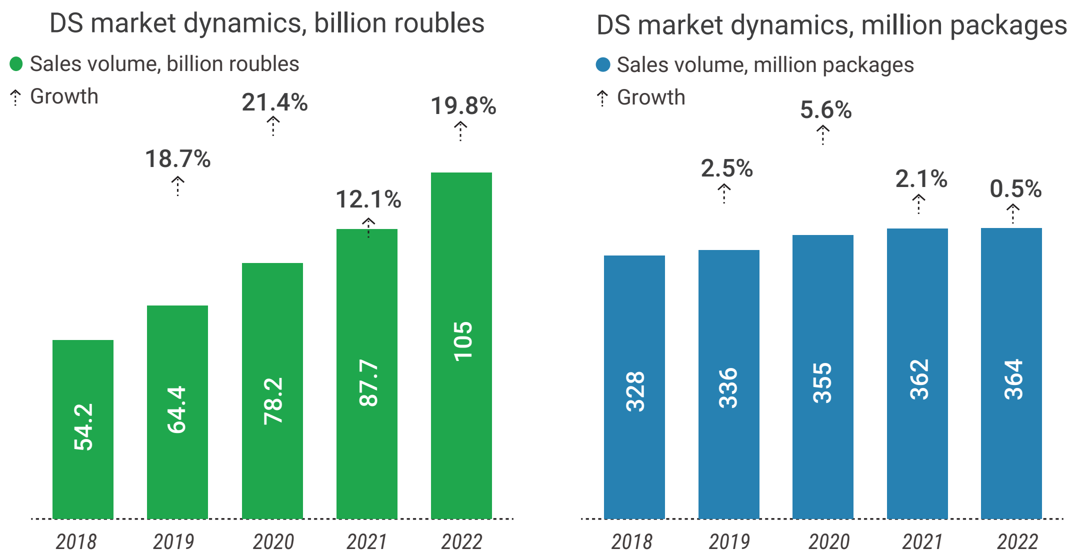


Figure 32

Dynamics of DS pharmacy sales in Russia, 2018-2022

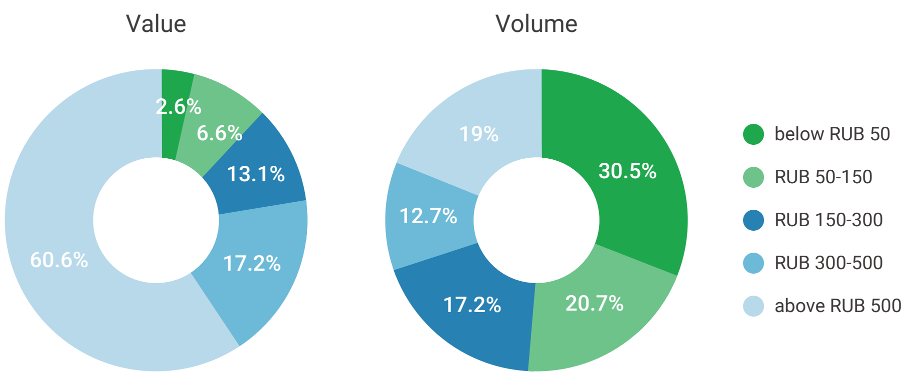


Figure 33

DS Sales Structure by Price Segments in 2022

DS are marketed by manufacturers as nutritional supplements helping to prevent various diseases. The DS classifier by effect (developed by DSM) contains 16 chapters, most of which have the 2nd sub-level, and some – the 3rd.

Over the year, the ranking somewhat changed. [W] – DS for slimming and cleansing dropped in sales by 6%, went 3 position lines down and lost to groups that had notably grown by consumption volumes, specifically, DS supporting the immune system function (+34.4%); DS affecting sensory organs (+23.5%); and DS affecting the urinary system (+55.6%).

Multi-purpose supplements of group [V] DS affecting the whole body (a 32.3% share in roubles) are traditionally the most in-demand on the market. Compared with 2021, sales in this DS group grew by 19.2%. The main DS brands in group [V] are: Solgar (15.4% in the group's sales in roubles) from the same-name corporation, and Dr. Reddy's Femibion (6.1%).

BAs before, ranking second is [A] DS affecting the digestive system (19.5%), its sales grew by 16.3%. The most demanded in this group are PharmaMed's Bac-Set (13.2% in the group's sales in roubles), and Russian Binnopharm Group's Maxilac (11.2%).

The third-ranking is [N] DS affecting the central nervous system function (9.4%), also with positive sales dynamics: +20.2% The group is headed by Russian Evalar's supplements — Evalar Glycine (7.9% in the group's sales in roubles) and The Calming Formula (7.2%).

14 groups demonstrated positive dynamics. The maximum growth rates were observed in the following groups:

- the highest growth in sales was in DS affecting the urinary system (+55.6%): sales of the [U] group brands such as Urephron, Renalis and Uronext grew by 273.6%, 172% and 138%, respectively;
- dietary supplements affecting the hematopoietic system (+43.7%) rank third by the annual growth rates: the group's sales grew mostly thanks to VitaFerr (+1,005.2%), Vitamir (+161.8%) and PL (+148.5%);
- DS for treatment of respiratory organs conditions (+35.9%): the positive dynamics in Group [R] was thanks to Mikfetin (+2,546.5%), Consumed (+750.5%), and Loriotabs (+209%).

The heaviest drop in sales, by 6%, was observed in [W] – DS for slimming and cleansing, which used to be highly demanded. Sales of the weight-loss supplements such as Reduxin (-22.4%), Turboslim (-18.3%) and Flying Swallow (-11.9%) measurably dropped in 2022.

Figure 34

Change in DS prices on the Russian pharmacy market

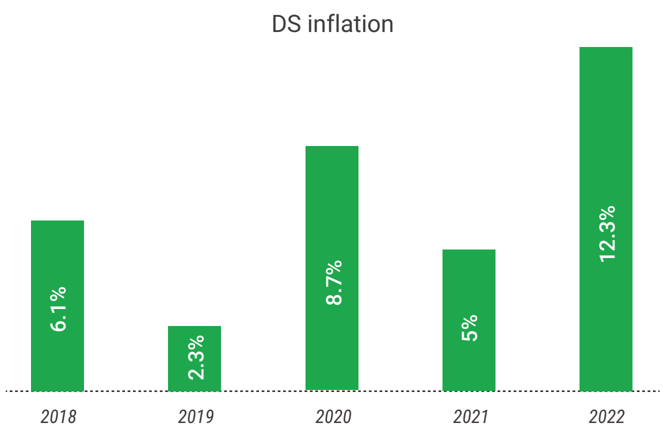


Table 20

Sales ranking by the DS classifier chapters, 2022

Ranking	Change against 2021	Group	Sales volume, mln roubles	Share	Growth to 2021
1	-	[V] DS affecting the whole body	**33 892**	**32.3%**	**19.2%**
2	-	[A] DS affecting the digestive system	**20 421**	**19.5%**	**16.3%**
3	-	[N] DS affecting the central nervous system function	**9 900**	**9.4%**	**20.2%**
4	-	[M] DS used for treatment of skeletal system conditions	**7 947**	**7.6%**	**19.6%**
5	-	[G] DS affecting the reproductive system	**7 653**	**7.3%**	**17.6%**
6	-	[C] DS supporting cardiovascular system functions	**4 858**	**4.6%**	**16.9%**
7	-	[R] DS for treatment of respiratory organs conditions	**4 417**	**4.2%**	**35.9%**
8	-	[D] DS for treatment of various skin and hair conditions	**3 358**	**3.2%**	**18.6%**
9	-	[B] DS affecting hematopoietic system	**2 657**	**2.5%**	**43.7%**
10	+1	[I] DS supporting the immune system function	**2 411**	**2.3%**	**34.4%**
11	+1	[S] DS affecting sensory organs	**2 001**	**1.9%**	**23.5%**
12	+1	[U] DS affecting the urinary system	**1 846**	**1.8%**	**55.6%**
13	-3	[W] Slimming and cleansing DS	**1 722**	**1.6%**	**-6.0%**
14	-	[T] DS used in case of poisoning and intoxication	**941**	**0.9%**	**-1.7%**
15	-	[H] DS affecting the endocrine glands function	**807**	**0.8%**	**20.1%**
16	-	[J] DS used to treat conditions caused by bacteria, viruses and fungi	**155**	**0.1%**	**1314 groups demonstrated positive dynamics. The maximum growth rates were observed in the following groups: 5%**

TOP 20 DS brands leading in sales volumes on the Russian market

At the end of 2022, pharmacies offered over 3,200 DS brands (around 13.8 thousand SKUs) from 1,157 manufacturers. More than 500 new brands emerged on the market over the year. Earlier, it was easy for novelties to get to the top in rankings thanks to their adequate promotion; now, it is more difficult to launch «attractive» products.

The most successful "novelty" was the Krispofun brand (own brand of the Planeta Zdorovya pharmacy chain): at the end of the year, it ranked 116th (sales volume: 169.3 million roubles). The line offers 6 various product names. The most in-demand are Krispofun Night sedative and mild hypnotic supplements, and Krispofun Cysto used for treatment of various urinary diseases.

Several significant changes can be seen in the ranking of the top 20 brands leading by sales value. Also the positions of the top three brands changed. As a year earlier, the first-ranking are Evalar dietary supplements from the same-name manufacturer (12.7%), with a variety of products. 5% behind by the market share, the second-ranking is the Solgar line of dietary supplements from the same-name company, which affect the whole body and its individual systems. Ranking third is PharmaMed's multi-probiotic Bac-Set (2.6%) to restore the normal intestinal microflora.

There is one novelty in the ranking: the synbiotic Bificin from Spectrum. Having increased its sales by 167.6%, the brand moved up by 33 position lines to rank 20th.

Prominent growth was demonstrated by two more brands. Various-purpose Vitamir products (from Kvadrat-C) strengthened their ranking by moving 3 position lines upwards, having increased in sales by 101.7% compared with the previous year. The VTF brand from VTF Corporation moved two position lines upwards (+54%).

The DS market is dominated by products manufactured in Russia. Russian DS account for 80.8% of sales in volume and for 55.7% in value. In roubles, the market structure changed in favour of Russian dietary supplements (their market share grew by 1.2%), whereas in pack-

Figure 35

DS sales dynamics by classifier chapters, roubles

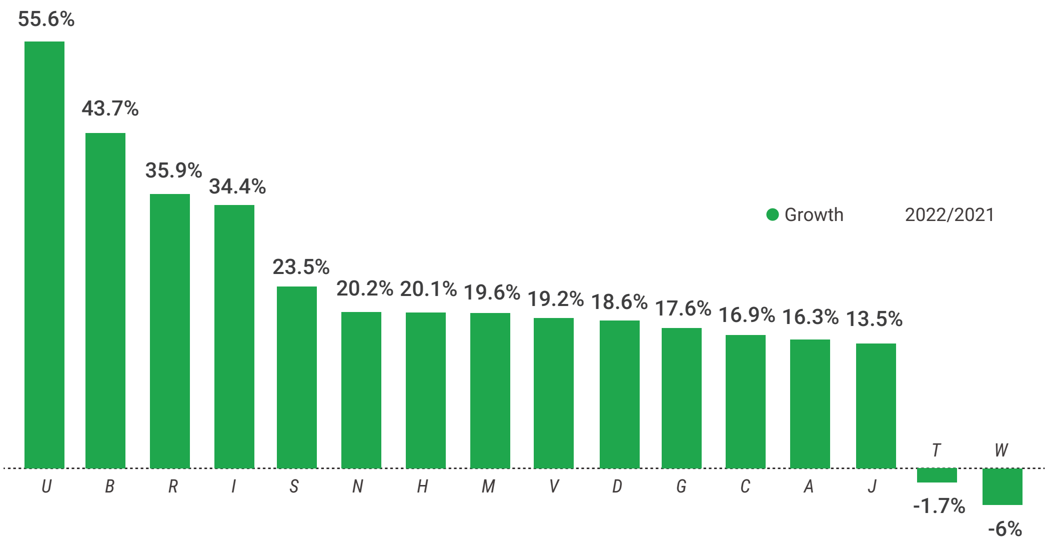


Table 21

TOP 20 DS brands in Russia in 2022

Ranking	Change against 2021	Brand	Sales volume, mln roubles	Share	Growth to 2021
1	-	Evalar	**13 345**	**12.7%**	**-4.2%**
2	-	Solgar	**8 103**	**7.7%**	**32.3%**
3	+2	Bac-Set	**2 758**	**2.6%**	**31.5%**
4	-	Doppelherz	**2 433**	**2.3%**	**4.1%**
5	-2	Maxilac	**2 289**	**2.2%**	**-4.3%**
6	+3	Vitamir	**2 140**	**2.0%**	**101.7%**
7	-	Femibion	**2 063**	**2.0%**	**11.4%**
8	-2	Detrimax	**1 893**	**1.8%**	**-1.7%**
9	-1	Vitrum	**1 498**	**1.4%**	**3.8%**
10	+2	VTF	**1 348**	**1.3%**	**54.0%**
11	-1	Vitamishki	**1 040**	**1.0%**	**8.9%**
12	+1	Natures Bounty	**981**	**0.9%**	**16.5%**
13	+4	Mirrolla	**919**	**0.9%**	**38.3%**
14	-	Elevit	**858**	**0.8%**	**11.2%**
15	+4	Phytomucil	**848**	**0.8%**	**31.6%**
16	-1	Hematogen	**794**	**0.8%**	**11.0%**
17	+3	Bud’ Zdorov!	**775**	**0.7%**	**34.1%**
18	-7	Supradyn	**758**	**0.7%**	**-14.8%**
19	-1	Artra	**709**	**0.7%**	**8.0%**
20	+33	Bificin	**689**	**0.7%**	**167.6%**

ages, on the contrary, the share of imported DS rose over the year from 18.7% to 19.2%. Given the political and economic situation, the share of Russian manufacturers will continue growing in future.

In absolute terms, both categories grew in sales in value: sales of imported supplements grew in 2022 against 2021 by 16.7%, sales of Russian supplements – by 22.3%. In packages, sales of Russian dietary supplements dropped by 0.2%, sales of imported supplements grew by 3.4%.

In 2022, the average per package price of a Russian DS was 199 roubles (+22.6% against 2021), which is 3 times less than the per package price of an imported supplement – 666 roubles (+12.8%).

The leaders among foreign DS manufacturers are USA (40.7%), Germany (17.6%) and India (7.2%). The most popular American DS are Solgar supplements, by Solgar. The leaders among German manufacturers are Queisser Pharma (Doppelherz DS line) and Stada (Vitrum and Artra brands). The top-ranking among Indian manufacturers are Dr. Reddy's (Femibion and Bion DS) and Sun Pharmaceutical (Neotravisil).

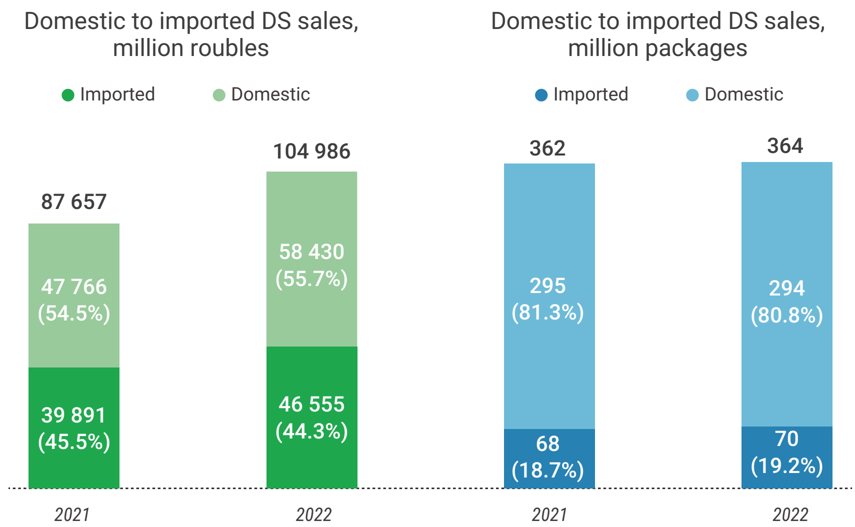
TOP 20 DS manufacturers, leading in sales volumes on the Russian market

DS manufacturers' concentration on the pharmacy market is quite high – the TOP 20 companies hold 60% of the market.

For many years, Evalar, a Russian company, has remained the market leader (13.6% in roubles). In 2022, it saw a 0.3% increase in sales volumes but the manufacturer's market share shrank by 2.6%. The positive dynamics of the company's performance was thanks to the increased consumption of Helinorm, a metabiotic to lower Helicobacter pylori and maintain the balance of the gastrointestinal microflora (+65.7% to 2021), the Anti-Age nutraceuticals to mitigate ageing (+13.7%), and Evalar Indol Forte DS affecting the female reproductive system (+11.9%). On the contrary, sales of effervescent Evalar Vitamin C (-26.8%), Turboslim weight loss supplements (-18.3%), and The Calming Formula supplements to normalize CNS activations and inhibitions (-10.7%) dropped. Today, Evalar's portfolio comprises 496 various DS product names, grouped in 95 one-brand product lines. Each year, the company launches new products on the market.

Figure 36

Domestic to imported DS sales, 2021-2022



In 2022, pharmacies started offering about 130 new DS in terms of dosage forms. The best-selling novelty is the heart health supplement Korrstat Cardio AD-Minus Tab. No. 40. The DS sales were worth 31.8 million roubles.

Evalar is actively using all possible channels to sell its products: besides retail pharmacy channels, the company is developing its own Evalar offline pharmacies, online pharmacies (asevalar.ru), a marketplace (Fitomarket.ru) integrated in Yandex and SberMegaMarket, and an online store (shop.evalar.ru). Also, Evalar collaborates extensively with major marketplaces. As a result, the company's eCom share grew over the year from 11% to 15%.

Stable performance is observed also with foreign manufacturers selling their products through pharmacies. American Solgar (7.7%) ranks second, having significantly increased its seals (+32.3% to 2021). The company has only one brand, Solgar, which is a series of dietary supplements with various action spectra: from supplements to maintain the gastrointestinal balance to supplements supporting the central nervous system. Eight of the company's ten major product names grew in sales volumes. The highest growth was observed in products recommended by the manufacturer as an additional source of magnesium – Solgar Magnesium Citrate (+103.1% to 2021), of iron – Solgar Gentle Iron (+45.1%), and Solgar Multi I, a complex with Vitamins of Group B (+40.6%). One of the DS groups in the manufacturer's portfolio is declining in sales: Solgar Zinc Picolinate (-13.3%) and Solgar Ester-C Plus Vitamin C (-4.5%).

PharmaMed (5.4%) with its major supplement Bac-Set (a 48.5% share in the manufacturer's sales) ranks third, having increased its sales volumes by 25.2% in roubles. The company's portfolio comprises 9 brands. All dietary supplements, except for kids vitamins Kids Formula, grew in sales volumes. The growth in sales was boosted most of all by the increased demand for the dietary supplement for men's

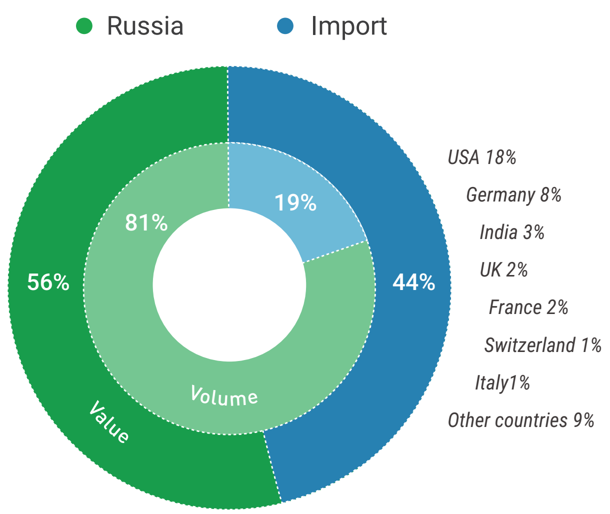


Figure 37

Domestic to imported DS sales, by countries, 2022

Table 22

TOP 20 DS Manufacturers in Russia in 2022

Note: *«manufacturer» means the parent company that may incorporate several production sites.*

Ranking	Change against 2021	Manufacturer	Sales volume, mln roubles	Share	Growth to 2021	Online segment in the company's sales
1	-	Evalar	**14 290**	**13.6%**	**0.3%**	**15%**
2	-	Solgar	**8 103**	**7.7%**	**32.3%**	**37%**
3	-	PharmaMed	**5 690**	**5.4%**	**25.2%**	**19%**
4	-	Kvadrat-C	**4 979**	**4.7%**	**57.3%**	**3%**
5	+5	VTF	**3 223**	**3.1%**	**60.0%**	**4%**
6	-	Unipharm	**3 027**	**2.9%**	**4.5%**	**23%**
7	-2	Stada	**2 964**	**2.8%**	**0.9%**	**18%**
8	-	Queisser Pharma	**2 439**	**2.3%**	**4.4%**	**23%**
9	-	Dr.Reddy's	**2 336**	**2.2%**	**15.4%**	**21%**
10	-3	Binnopharm Group	**2 293**	**2.2%**	**-4.3%**	**10%**
11	+4	Mirrolla	**2 155**	**2.1%**	**106.4%**	**5%**
12	-1	Bayer	**1 739**	**1.7%**	**1.0%**	**20%**
13	+28	Apteka Servis Plus	**1 601**	**1.5%**	**331.2%**	**5%**
14	-1	Bausch Health	**1 440**	**1.4%**	**2.5%**	**10%**
15	-3	OTCPharm	**1 349**	**1.3%**	**-14.0%**	**17%**
16	-	Polaris	**1 313**	**1.3%**	**39.0%**	**8%**
17	-3	Laboratoires Ineldea	**1 138**	**1.1%**	**-7.2%**	**8%**
18	+6	VP Laboratory	**1 026**	**1.0%**	**71.7%**	**7%**
19	-2	The Bountiful Company (NBTY)	**986**	**0.9%**	**16.6%**	**32%**
20	+6	Akvion	**873**	**0.8%**	**46.6%**	**36%**

health SpermActin Forte (+33.4% to 2021), Phytomucil against constipation, for weight loss, to reduce cholesterol and to treat poisoning (+31.6%), and the multi-probiotic Bac-Set to restore the intestinal microflora (+31.5%).

It must be said that distinctly positive dynamics is demonstrated by manufacturers with a high share of own brands in their portfolio: Kvadrat-C (+57.3%), VTF (+60%), Mirrolla (+106.4%), and Polaris (+39%). Most of the profits gained by Russian Mirrolla came from the Mirrolla line of dietary supplements (42.6% in the company's sales; +38.3% against 2021). The maximum growth rates were in the brands Superum, Rikuan Zinc, and Sodium Picosulfate.

The negative dynamics in sales of OTCPharm (-14%) was mostly due to the decline in the sales of Junivit to treat micronutrient deficiency (-93.1%), Magnelis affecting the central nervous system functions (-77.4%), and Asvitol chewable tables with ascorbic acid (-31.1%).

6. Cosmetics

KUnlike the pharmaceutical market, the cosmetics market has been more affected by the February 2022 events. Cosmetics do not fall into the category of socially important products, so the "exit" of global brands from Russia as a result of sanctions is probably an expected development. Meanwhile, only the US has imposed legislative restrictions on the sale of cosmetics to Russia, while the EU has restricted the purchase of cosmetics from Russia in the eighth package of sanctions, but has not banned their imports.

Estee Lauder Companies Inc, LVMH, L'Oreal Paris and the Shiseido Group all ceased deliveries and sales in March. Another global giant, the US company Procter & Gamble (Gillette, Pantene, Head & Shoulders, Old Spice), decided to stop advertising and investing in the Russian market, but to continue selling everyday health, hygiene and personal care products. The UK's Unilever (Rexona, Dove, AXE, Camay, Sunsilk, Timotei) also suspended exports to Russia, although its plants in St Petersburg, Yekaterinburg, Omsk and Tula will continue to operate. Johnson & Johnson, the US holding company that owns such brands as O.B., Carefree and Johnson's, announced that it would stop shipping its products. French retailer Sephora's online and offline stores, which exclusively sold Rihanna's Fenty Beauty and Fenty Skin brands, vegan beauty products KVD Beauty and make-up artist Huda Kattan's Huda Beauty brand, also closed.

The range of products on offer across all segments of the perfume and cosmetics market has shrunk by an average of 25% since the end of February.

Of course, foreign cosmetic products can be brought in as parallel imports: The Ministry of Industry and Trade (Minpromtorg) does not prohibit the sale of products imported in this way (although there are a number of brands that are excluded), but the plan is that they can only be legally imported into Russia under licence from the rights holder. However, retailers themselves are not keen on bringing in goods as parallel imports: there are image costs, they can ruin relationships with brands, which may affect their future partnerships, and it is not always financially viable.

Clearly, these are all opportunities for the growth of domestic cosmetics production, but as elsewhere, companies have faced logistical difficulties. The Russian cosmetics industry purchases about 5,000 raw materials used in cosmetics production from abroad. Although most supply channels have been diverted to India and China, dependence on imports of raw materials from the EU remains high. As a result, many domestic cosmetics manufacturers are changing the formulations and the range of their products.

In addition to changes in the product range, the cosmetics market has also undergone a structural change: the eCom segment has grown significantly. Since the beginning of 2022, traditional grocery retailers and online services have started to sell cosmetics. In February, Samokat, an express delivery company, spun off a separate online store, Samokat Beauty. In March, the supermarket chain Lenta opened its first perfume and cosmetics 'shop-in-shop' in partnership with Rive Gauche. In June, the online hypermarket Vprok.ru Perekrestok, part of X5 Group retail group, launched an online cosmetics store.

Perfume and cosmetics chains are also turning their attention to the pharmacy market, creating additional competition not only for pharmacies but also for the brands sold in them. In December 2021, L'Etoile launched a project to develop its retail pharmacy business. There are now six outlets operating under this label, although there were plans to open 21 pharmacies by the end of 2022.

In addition, Yekaterinburg's perfume and professional cosmetics chain Gold Apple (Russian: Zolotoe Yabloko) opened its own shop-in-shop pharmacy in 2022. The first pharmacy was launched in May in the Bolshoy department store in Yekaterinburg.

All of these trends are not helping to increase sales of pharmacy cosmetics as consumers are turning to other channels. Over the past few years, we have seen a negative trend in sales in packages. At year-end 2022, pharmacies sold 148.5 million packages (-10.8% compared to 2021).

Value sales reached 50 billion roubles. Pharmacy customers spent 10.4% more than a year earlier. This is the highest rate in the last few years. The main contributor to the strong cosmetics sales was demand for selective cosmetics, which grew by 16.4% in value terms.

Comparing monthly sales with those of the previous year, we can see that the main increase was in March (+59% compared to March 2021). Excluding March, the growth rate of pharmacy cosmetics sales would have been only 5%.

At year-end 2022, the share of cosmetics in pharmacy sales was the third largest (after drugs and dietary supplements).

Every year pharmacies expand their range of cosmetic products, both through the introduction of new brands and the expansion of existing product lines. In 2022, Russian pharmacies sold over 2,400 different brands of cosmetics (24,600 SKUs). Manufacturers offered consumers more than 260 new brands. Among the most successful brands were: 110th place – Enlu Lab private label cosmetics (Maryvery), a series of face care products; 142nd place – Artelar cosmetic gels for sprains, bruises and inflammatory joint diseases (Apteka Service Plus private label); 158th place – Malinia London mass market cosmetics (Maryvery), a series of products for problem hair and thin and dry skin. These brands made it into the top 200 by value sales because their total sales in the analysed period exceeded 194 million roubles.

Cosmetics rank high in terms of the eCom share of total cosmetics sales. The overall

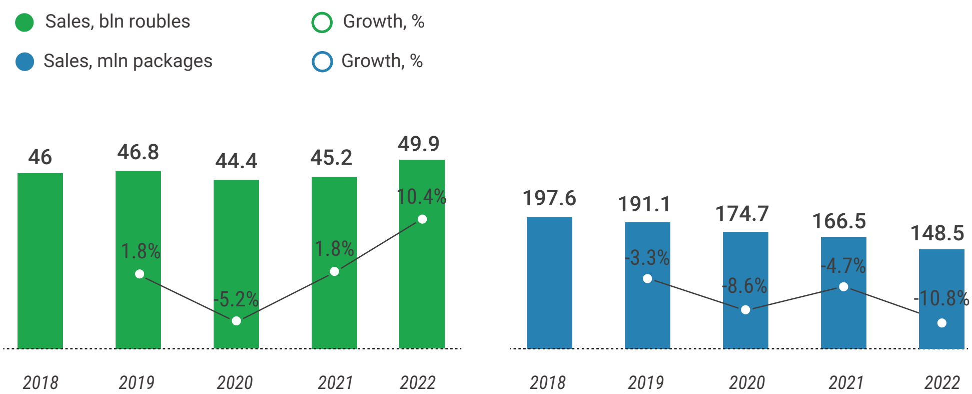


Figure 38

Pharmacy cosmetics sales dynamics in Russia, 2018-2022 share of cosmetics ordered via online pharmacies in 2022 was 15% or 7.5 billion roubles, 4% higher than in 2021 (a 53% increase for the online segment). Selective cosmetics, which are mainly available in pharmacies (such brands as La Roche-Posay, Vichy, Bioderma, etc.), are more frequently booked online – their share is 18.6%. This is because consumers actively use online shopping sites to find the best price. Premium cosmetics have the highest weighted average cost per package (1,163 roubles), so price sensitivity is higher in this category.

However, pharmacy eCom sales of cosmetics are nowhere near the levels of other channels. For example, Ozon alone sold about 11 billion roubles worth of cosmetics in 2022. Interestingly, the leader of this online service (as in pharmacies) is the La Roche-Posay brand. In second place is the ARAVIA brand, which is not available in pharmacies. Librederm, which ranks fourth in pharmacies, is only eighth on Ozon.

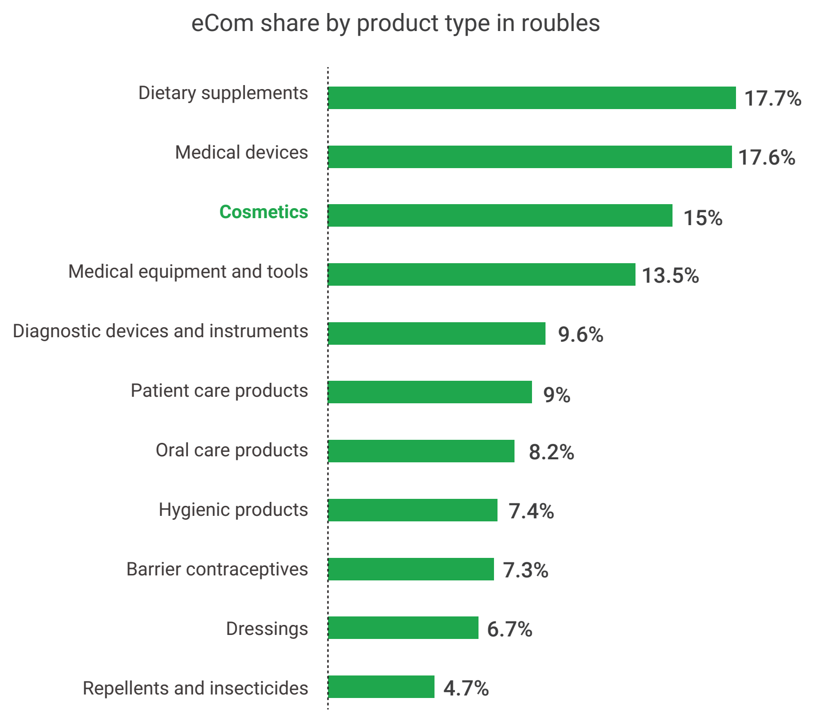
An important development for the cosmetics market is the antiseptic labelling pilot project, which ran in Russia from August 1, 2021 to August 31, 2022 and was extended to February 28, 2023 to ensure a gradual transition of the industry to the new regulations. From 1 April 2023, digital labelling may become mandatory for cosmetic hand hygiene products that have antimicrobial activity.

Cosmetic products can be classified according to various criteria: price, intended use, age and social group, activity or indication. **DSM Group** conducted an analysis and proposed its own classification of cosmetic products according to their purpose, activity and price. Cosmetic products sold through pharmacy chains were divided into three key groups:

Selective cosmetics (premium and luxury) are luxury, upmarket products with specialised lines that are clearly differentiated and designed for specific skin or hair conditions (e.g., La Roche-Posay, Vichy, Bioderma brands).

Figure 39

Online sales of basic pharmacy product groups as a percentage of total sales, 2022



These are usually high-priced products.

Therapeutic (active) cosmetics are products used for the treatment and prevention of specific diseases, containing biologically active substances (these include brands such as Alerana, Loshadinaya Sila (Horsepower), 911 Vasha Sluzhba Spaseniya (911 Your Emergency Service), etc.).

Mass market cosmetics are affordable skin, hair and nail care products sold in both pharmacies and other retail outlets (Johnsons, Nivea, Floresan, etc.).

During the year, the market structure shifted in favour of selective cosmetics, whose share increased by 1.9% to 37.1% in roubles and by 1.1% to 10.7% in packages. In absolute terms, growth was also one of the strongest, with a 16.4% increase in value sales. However, volume sales are 1.1% lower than in 2021. The highest growth rates among the top 20 luxury cosmetics brands were reported for smaller brands Herbal Essentials (+1740.3% in roubles), 8.1.8 Beauty Formula (+221.1%) and Eucerin (+93.7%).

Active (therapeutic) cosmetics remain the most popular segment, accounting for half of all cosmetics sales. This is why therapeutic cosmetics play the key role in the overall performance of the pharmacy cosmetics market: +7.2% in roubles and -11.5% in packages. Its size decreased by 0.4% in volume and 1.3% in value. During the year, pharmacies sold 977 active cosmetics brands produced by 491 companies (4,900 SKUs). These products can be marketed as something in between non-pharmaceutical and pharmaceutical products, and demand for this category of cosmetics is driven by low price policies.

Sales of mass market cosmetics are on the decline. It should be noted that pharmacies are not the main distribution channel for mass market cosmetics. Due to a significant drop in sales, the share of this type of cosmetics decreased by 1.5% in value and 2.3% in volume. Although mass market cosmetics account for 31.1% of sales in packages, their share in roubles is only 14.4%, as this sub-segment is dominated by low-priced products. Most sales of this group of products in pharmacies are either impulse purchases or purchases in addition to medicines.

Sales of private label cosmetics are growing rapidly (+59.3% in roubles and +25.9% in packages). However, at the end of the year, private label products accounted for only 3% of total pharmacy sales in value and 6% in volume.

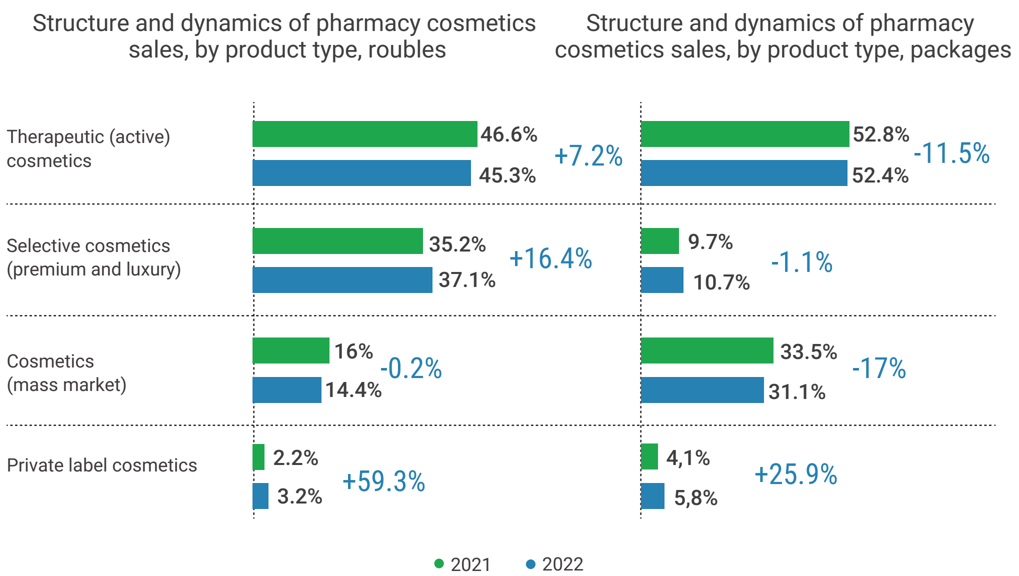


Figure 40

Structure of pharmacy sales by type of cosmetic product

Figure 41

Weighted average price of a cosmetic product in pharmacies

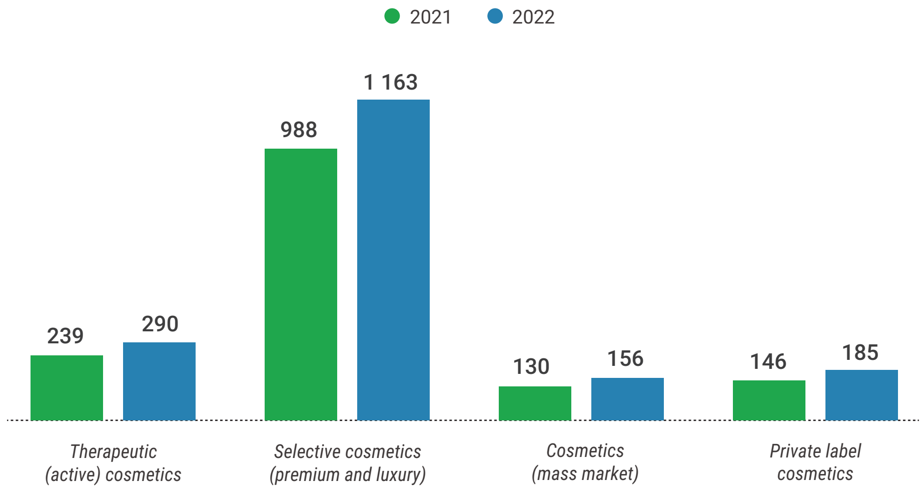
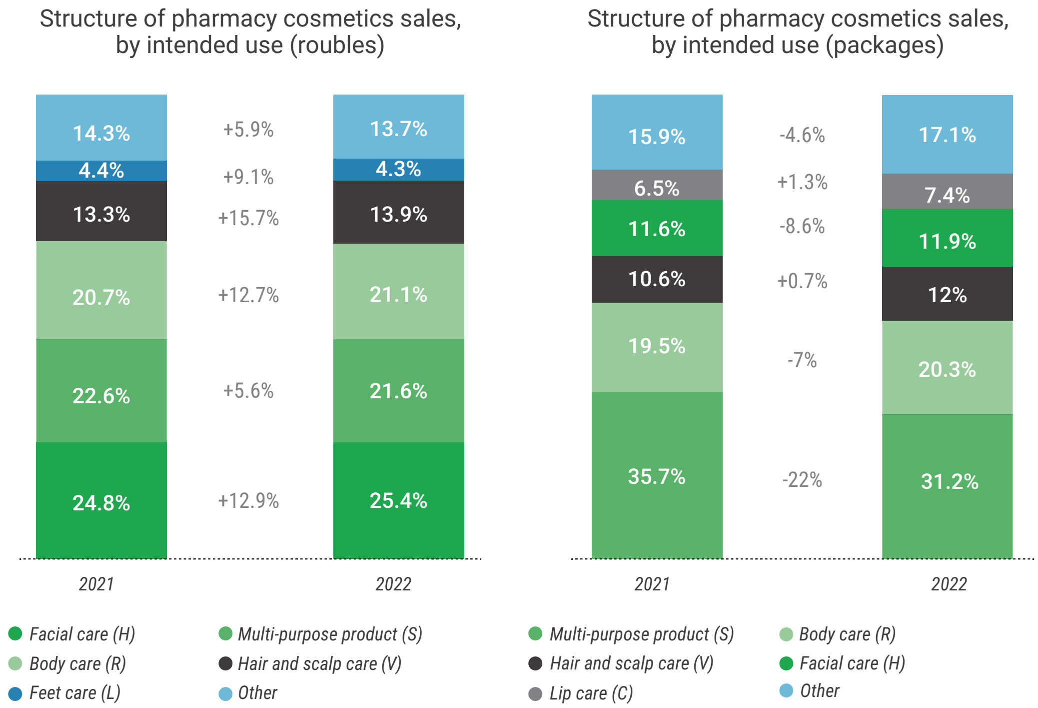


Figure 42

Cosmetics sales structure by intended use in 2022



In 2022, the average weighted price of a cosmetic product in retail pharmacy prices was 336 roubles per package. The price increased by 23.8% compared to 2021. Looking at each market segment, we can see that prices have increased in all categories. Private label cosmetics saw the largest increase, with the weighted average price per package rising 26.6% to 185 roubles compared to 2021. The price of active cosmetics per package increased by 21.2%, while the prices of mass market and premium cosmetics were up 20.2% and 17.7%, respectively.

Looking at cosmetics in terms of intended use, the most popular are still multi-purpose cosmetics (31.2% of sales in packages), intended for all types of consumers. Facial products have the highest percentage in roubles, 25.4%.

Five top-ranking groups showed positive sales dynamics. The highest growth rates were recorded for hair and scalp cosmetics (+15.7% in roubles), facial cosmetics (+12.9%) and body cosmetics (+12.7%). In volume terms, however, most of the groups saw a decline in sales, with the most significant fall in multi-purpose products (-22% in packages). At the same time, sales of lip care and hair and scalp cosmetics rose by 1.3% and 0.7%, respectively.

The largest share in the cosmetics sales structure by age belongs to cosmetics for all age groups (80% in value and 79.8% in volume). They are followed by cosmetics for babies and children (0-14 years): 8% in roubles and 13% in packages. In third place are cosmetics for young adults (over 25), with a market share of 5% in roubles. There is a preponderance of high-priced premium and luxury cosmetics in this category – 80.8% of value sales come from selective cosmetics. Middle-aged people (over 45) and teenagers and young adults (14-25) show a strong preference for high-priced cosmetics: in these categories, selective cosmetics account for around 76% and 79% of value sales, respectively. The segment of cosmetics for the elderly (over 60) shows the highest rates of decline in roubles (-17% compared to 2021).

Russian cosmetics are more popular than imported brands on the pharmaceutical market, with domestic cosmetics accounting for over 76.4% of volume sales. As for value sales, it should be noted that the market is almost equally divided, but imported products are slightly ahead (around 50.3% of sales).

Within segments, the ratio of domestic to imported cosmetics varies considerably (Fig. 43).

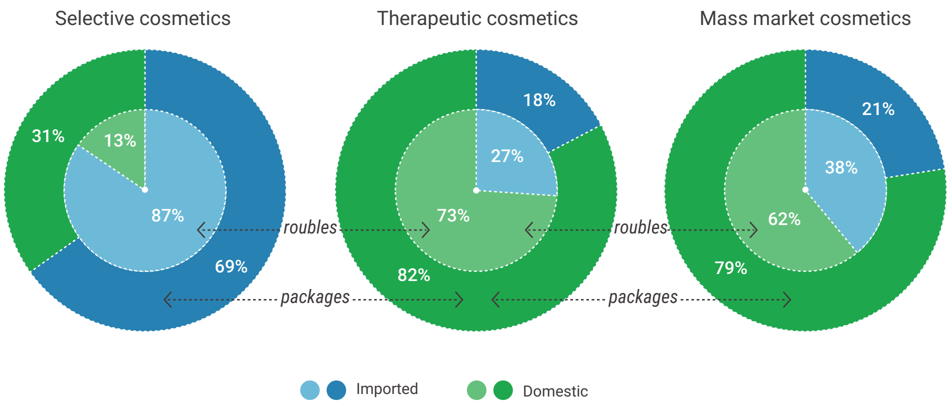


Figure 43

Pharmacy cosmetics sales by origin, according to type of cosmetic product, 2022

In 2022, premium cosmetics were mostly represented by imported products, which held 87% of the market in roubles and 69% in packages. The Russian brand Librederm accounts for 87.7% of domestic selective cosmetic sales in roubles.

By contrast, the therapeutic (active) cosmetics segment is dominated by Russian brands, which lead both in value (73%) and volume (82%).

The share of domestically produced cosmetics in the mass market segment grew by 3.8% in roubles and 1.5% in packages compared to the previous year. The main made-in-Russia brands are: Detskiy Krem (Baby Cream), EVO and Moyo Solnyshko (My Sunshine), with a combined market share of 18.1% in roubles.

Selective cosmetics

In 2022, pharmacies sold 15.9 million packages of premium cosmetics for about 18.5 billion roubles (at retail prices). Compared to last year, the number of packages sold decreased by 1.1%, while the amount of money spent increased by 16.4%. Librederm (-7%), the only brand in the top 10 to show a drop in sales, lost third place to Bioderma. A new brand, Topicrem, entered the ranking (+1).

ФL'Oreal's brand La Roche-Posay (+7% compared to 2021) holds the top spot. However, the market share of the French brand declined by 2.3% to 26.3%. La Roche-Posay cosmetics based on thermal spring water are specifically designed for problem skin, which is why over 40% of the brand's sales come from the Effaclar (for oily and problem skin) and Lipikar (for irritated and itchy skin) lines. In total, there are 280 full trade names in the brand's portfolio.

In second place was another L'Oreal cosmetic product under the Vichy brand (+8%), designed to maintain healthy and beautiful skin. Vichy's share of the selective cosmetics segment also declined by 1.4% to 17.8%. 33% of the brand's sales come from the anti-ageing category ([A13] Ageing skin, wrinkles): the Neovadiol range for menopause, Liftactiv anti-wrinkle and skin tightening products, Slow Age products for the first signs of ageing, and Capital Ideal Soleil sunscreens (the anti-ageing products in the range). In total, over 440 SKUs were sold in pharmacies with a weighted average price of 1,732 roubles.

Third place in the selective cosmetics category was taken by Bioderma Laboratories' brand Bioderma: its market share in value terms rose significantly from 8.9% to 11.3%, as sales increased by 48% compared to 2021. The product portfolio comprises 163 items, with facial products accounting for the largest share (around 50%). Within the brand, strong growth was seen in the following key ranges: Atoderm (+63% compared to 2021) for atopic, dry, very dry and sensitive facial and body skin; Sensibio (+52%) for sensitive skin prone to redness, irritation, allergies, couperose, rosacea and dermatitis; Sebium (+45%) for oily and combination skin prone to acne, helping to normalise sebum production, shrink pores and reduce oily shine; Hydrabio (+38%) for dehydrated and sensitive facial skin.

Topicrem dermocosmetics (+64%; +1 place) for daily care and the prevention and comprehensive treatment of various skin conditions showed the highest growth rate. Within the brand, cosmetics for dry and very dry, irritated skin (55%) and for atopic dermatitis (33%) top the list.

The leading premium brands have quite a high level of online sales. Topicrem (34% in roubles), Ducray (34%) and Bioderma (26%) had the highest percentage of eCom sales.

Therapeutic cosmetics

Manufacturers market active cosmetics as products that not only solve aesthetic problems, but also have therapeutic properties. This group of cosmetic products dominates the pharmacy market. Premium cosmetics mainly target facial skin problems, while active cosmetics have a wider range of indications. The largest share of sales in this product group comes from products for sprains, bruises, inflammatory joint diseases (9.5% in roubles), dry and very dry, irritated skin (9.1%), hair loss and baldness (8.6%).

The top 10 brands account for 27.2% of active cosmetics sales, which is significantly lower than in the luxury brands segment (88.5%). This is partly due to the fact that selective cosmetic ranges are very broad and aim to treat multiple conditions at once. Active cosmetics brands are usually marketed as products that address a specific condition. The category is therefore quite large: there are 977 therapeutic cosmetics brands on pharmacy shelves.

The ranking has changed significantly compared to 2021, with none of the brands maintaining their position from last year. The top 10 includes two new products – Esvicin (+5 places) and Sulsen (+4 places) for hair and scalp.

First place in 2022 was taken by Lactacyd (+9%), a daily intimate care range based on natural lactic acid that not only gently cleanses, but also protects women's health by preventing odour and discomfort. The fastest growing products in the top ten were Lactacyd Girl extra soft intimate hygiene gel 200ml (+73.7%) and Lactacyd daily gentle intimate hygiene mousse 150ml (+21.4%).

Alerana is a range of hair loss treatments and professional hair growth, treatment and restoration products for men and women. This is why 73% of the products manufactured under this brand are shampoos. In 2022, Alerana (+8%) moved up one spot to second place in the therapeutic cosmetics category.

Domestic brand Loshadinaya Sila fell to third place, with sales of the brand down 11%. Body care products account for 71.8% of the brand's sales in roubles, while hair and scalp products account for 18%.

Two new brands showed the highest year-on-year growth rates. Sales of Esvicin hair growth tonic lotion rose 36% and sales of Sulsen, another hair care range, were up 34%.

The largest share of online sales comes from Cetaphil (30% in roubles), Dry Dry (22%) and Lipobase (15%).

Mass market cosmetics

Multi-purpose cosmetics account for 32% of mass market products, mainly for cleansing (22% in roubles).

Only the leaders in the mass market cosmetics ranking – Johnsons and Detskiy Krem – held their positions from 2021. The top ten has four new brands: Organic Guru (new), Nivea (+8 places), Floresan (+4 places) and Gynocomfort (+4 places).

Johnson's children's cosmetics brand Johnsons (4.5% in roubles) took the top spot despite a 28% drop in sales. Detskiy Krem, a cosmetic product for children (4.1%), remains in second place. Four companies manufacture products under this

Table 23

Top 10 selective cosmetics brands in 2022

Ranking	Change compared to 2021	Brand	Sales, mln roubles	Share	Growth compared to 2021	Share of online sales in brand sales
1	-	La Roche-Posay	**4 860**	**26.3%**	**+7%**	**17%**
2	-	Vichy	**3 289**	**17.8%**	**+8%**	**17%**
3	+1	Bioderma	**2 093**	**11.3%**	**+48%**	**26%**
4	-1	Librederm	**2 084**	**11.3%**	**-7%**	**11%**
5	-	Avene	**1 204**	**6.5%**	**+19%**	**21%**
6	-	CeraVe	**963**	**5.2%**	**+47%**	**18%**
7	-	Uriage	**717**	**3.9%**	**+39%**	**19%**
8	-	Filorga	**437**	**2.4%**	**+20%**	**16%**
9	-	Ducray	**387**	**2.1%**	**+38%**	**34%**
10	+1	Topicrem	**338**	**1.8%**	**+64%**	**34%**

Table 24

Top 10 brands of active (therapeutic) cosmetics, 2022

Ranking	Change compared to 2021	Brand	Sales, mln roubles	Share	Growth compared to 2021	Share of online sales in brand sales
1	+1	Lactacyd	**782**	**3.5%**	**+9%**	**14%**
2	+1	Alerana	**772**	**3.4%**	**+8%**	**11%**
3	-2	Loshadinaya Sila (Horsepower)	**757**	**3.4%**	**-11%**	**7%**
4	+1	Lipobase	**730**	**3.2%**	**+29%**	**15%**
5	-1	911 Vasha Sluzhba Spaseniya (911 Your Emergency Service)	**645**	**2.9%**	**+1%**	**8%**
6	+1	Zinovit	**550**	**2.4%**	**+13%**	**14%**
7	-1	Cetaphil	**521**	**2.3%**	**+3%**	**30%**
8	+5	Esvicin	**472**	**2.1%**	**+36%**	**11%**
9	+1	Dry Dry	**466**	**2.1%**	**+17%**	**22%**
10	+4	Sulsen	**447**	**2.0%**	**+34%**	**11%**

brand name. Compared to 2021, Detskiy Krem's sales decreased by 9%. Avanta's EVO range of special products for skin and hair regeneration and health maintenance for special and daily care climbed to third place (+30% compared to 2021; +3 places) due to strong growth.

The most represented companies in the ranking are:

- Avanta – this manufacturer has 3 brands in the top 10 (EVO, Moyo Solnyshko, Avanta is also the leader among manufacturers of the Detskiy Krem brand);
- Johnson & Johnson – this manufacturer has 2 brands in the top 10 (Johnsons and Neutrogena).

Five of the top ten brands showed growth. As a result of a 32% increase in sales, Nivea moved up eight places to number 6 in the top ten in the mass market cosmetics segment. The cosmetic skin care products are manufactured by the German company Beiersdorf.

In addition to the EVO brand mentioned above, we should also mention the Floresan brand (+22%), which is affordable and has a wide range of products – most sales come from multi-purpose cosmetics, hair, body and facial care products. Over the year, the brand moved up four places in the ranking.

Gynocomfort cosmetics (+20%) for daily intimate area care and women's health improvement also moved up 4 ranks.

Kora saw the biggest fall in the ranking (-32%; -7 places). 37% of the brand's sales come from anti-ageing products and 32% from skin repair and regeneration products.

A distinctive feature of the ranking of mass market cosmetics sold in pharmacies is the variety of baby/children brands. 22% of products sold are for babies and children (0–14 years old). There are three children's brands in the 2022 ranking – Johnsons, Detskiy Krem and Moyo Solnyshko. These are the main brands in this category (they account for 54% in roubles of all mass market children's cosmetics sold through pharmacies).

The largest share of online sales comes from the following brands: Kora (12% in roubles), Gynocomfort (12%), and Floresan (11%).

Table 25

Top 10 mass market cosmetics brands, 2022

Ranking	Change compared to 2021	Brand	Sales, mln roubles	Share	Growth compared to 2021	Share of online sales in brand sales
1	-	Johnsons	**323**	**4.5%**	**-28%**	**6%**
2	-	Detskiy Krem (Baby Cream)	**294**	**4.1%**	**-9%**	**5%**
3	+3	EVO	**263**	**3.7%**	**+30%**	**10%**
4	+1	Moyo Solnyshko (My Sunshine)	**255**	**3.5%**	**+11%**	**7%**
5	-1	Neutrogena	**203**	**2.8%**	**-13%**	**10%**
6	+8	Nivea	**184**	**2.6%**	**+32%**	**7%**
7	new	Organic Guru	**183**	**2.5%**	**new**	**2%**
8	+4	Floresan	**180**	**2.5%**	**+22%**	**11%**
9	+4	Gynocomfort	**172**	**2.4%**	**+20%**	**12%**
10	-7	Kora	**161**	**2.2%**	**-32%**	**12%**

7. Pharmacy chains

AThe pharmacy market grew quite significantly in 2022: +15%. This trend should have had a positive impact on the financial position of all pharmacies. But that is not the case. This is not just because each pharmacy develops differently (although that is important as well). The situation is also heavily influenced by the participants themselves.

The attractiveness of the pharmacy business is evident from the record number of new pharmacies opened during the year. At the beginning of 2023, there were 70,400 pharmacies in Russia, almost 4,000 more than at the beginning of 2022. Such a high rate of growth in outlets has not been seen in the entire monitoring period: the previous maximum was in 2018, with around 3,000 new pharmacies. This resulted in a 6% increase in absolute terms, which means that average sales per store grew more slowly than the market as a whole, reaching just over 2 million roubles at the end of the year.

The leader in opening new stores was the pharmacy chain Aprel. During the year, 2,300 new pharmacies were added to the chain. Incidentally, this growth made it the first player to have more than 5,000 outlets (previously only marketing associations had that many members). Aprel had 5,372 stores at the end of the year.

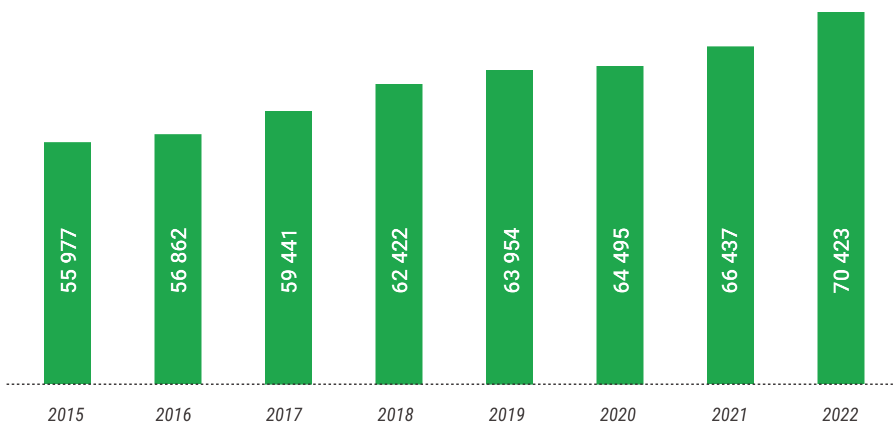
Other leaders in terms of growth in size are the federal chains, but their growth figures are significantly lower: Implosia – +680 outlets, Vita – just over 300 outlets, Pharmland – +330 outlets.

However, the number of stand-alone outlets and small chains continues to decline (by 1,250 in 2022).

The expansion of the chains is linked not only to organic growth, but also to the acquisition of regional players. However, this process used to be more obvious (large companies were acquired), but now it is more about taking over local chains. There are not many deals made in 2022. Among the active players is the pharmacy chain Rigla: in January 2022, Rigla acquired

Figure 44

Number of pharmacy outlets in Russia



12 pharmacy outlets of the Kirov chain Apteki Vyatki; in April-May it completed the acquisition of 34 outlets of the pharmacy chain SPAR Apteka in Tula and the Tula region; in October it completed the acquisition of 11 pharmacies of OOO Apteka – Upravleniye in the Tver region.

The largest deal (in terms of number of outlets) belongs to the chain Pharmland. In July 2022, the company acquired the Orenburg-based chain OrenLek consisting of 144 pharmacies. At the end of April 2022, it was also announced that Pharmland had initiated a deal to acquire the rights to 17 pharmacies of the Moscow-based chain Ekonom, but there was no information on its completion.

Companies that represent different partnerships are showing high growth rates. IRIS, for example, already includes 16 brands of its partner chains. In other words, the number of outlets in the partnership is growing, both through new members and through the development of the chains themselves. The resulting increase in pharmacies in the IRIS partnership for 2022 was about 580 outlets. The most significant transactions made by the participants are the following: Pharmaimpex acquired 64 pharmacies of Aptechnye Traditsii operating in central Russian cities in February; the chain Tvoy Doktor (Tula) acquired 68 outlets of the Moscow-based chain Vek Zhivi and also became the owner of the Voronezh-based chain Pharmiya (45 pharmacies).

In general, the capacity of the pharmacy market in 2022 was 1,677 billion roubles (+15% compared to the previous year). The market is still consolidating. In 2022, the combined share of the top 20 chains was 57%, 1.4% higher than in 2021.

Figure 46 shows the growth in sales and the number of outlets for the top 20 pharmacy chains in 2019-2022. In 2022, the top 20 had 33,600 pharmacies, only 20% more than in 2021. In the 2022 ranking, 10 chains had over 1,000 outlets, and all were ranked 1 through 10.

The leader of the ranking in terms of size is the chain Aprel, although it is still in second place in terms of sales. The chain Rigla tops the list in terms of sales with a share of 8.0%.

While analysing trends in the pharmacy market, we cannot help but wonder when the growth in the number of pharmacies operating in our country will come to an end; what factors will change the situation and lead to a reduction in the number of outlets. This is not likely to happen in 2023. The participants themselves say they will continue to grow. Aprel, for example, plans to open around 2,000 stores this year. Magnit has resumed opening new pharma-

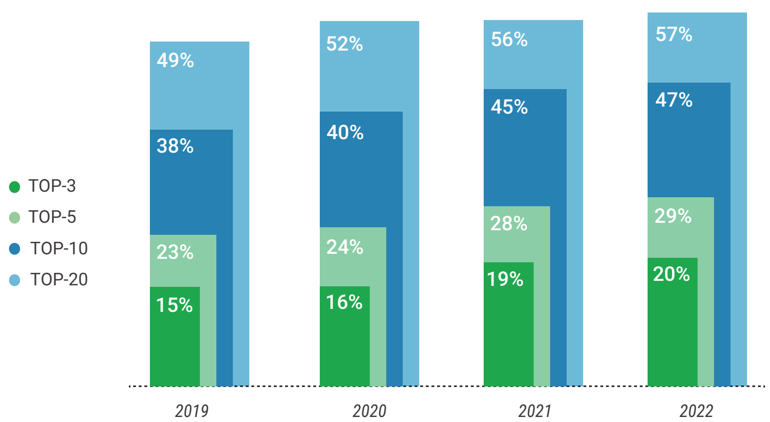


Figure 45

Concentration of the top 20 pharmacy chains cies, and Rigla is approaching the 4,000-pharmacy milestone (which means it will continue to grow).

Incidentally, if we compare the number of pharmacies in Russia and Europe, the density of pharmacies in Russia is higher. On average, there are 31 pharmacies per 100,000 people in Europe. In Russia there are 48 pharmacies. But of course, there are countries that exceed Russia's figure. Malta and Bulgaria, for example, have 51 pharmacies per 100,000 people. The countries with a similar number of pharmacies to Russia are Lithuania and Spain with 47 pharmacies each, and Latvia and Belgium with 44 pharmacies each. However, most countries have a much lower density of pharmacies: Germany – 24 pharmacies per 100,000 people, Hungary and the UK – 22 pharmacies each, Austria – 16 pharmacies, Denmark – 8 pharmacies.

What can slow down the growth of pharmacies is the legislative initiatives that are being widely discussed, some of which have already been passed and will be introduced soon.

In 2022, the final decision was taken to maintain a special register of pharmacists and healthcare professionals. From March 2023, it will be compulsory to enter information on pharmaceutical organisations and persons involved in the pharmaceutical business or training in professional medical or pharmaceutical education programmes into the Unified State Healthcare Information System. This information will be used to create a comprehensive register of pharmaceutical workers, containing individual details of every pharmacist in Russia. Such a register would make it possible to analyse the staffing of pharmacists and chemists throughout Russia and to forecast possible staff shortages both in particular specialities and in particular subjects of the Russian Federation.

If there is a shortage of staff in the pharmacy sector, it may be difficult to open new pharmacies as only those on the register will be able to work in pharmacies.

The Pharmaceutical Licensing Regulations, updated in March 2022, prevent sole traders from opening more than one pharmacy, and the Distance Selling Regulations, approved in March 2020, prevent sole traders from delivering medicines. The regulations came into force on September 1, 2022. One of the industry's fears

Figure 46

Dynamics of growth in sales and the number of outlets of the top 20 pharmacy chains

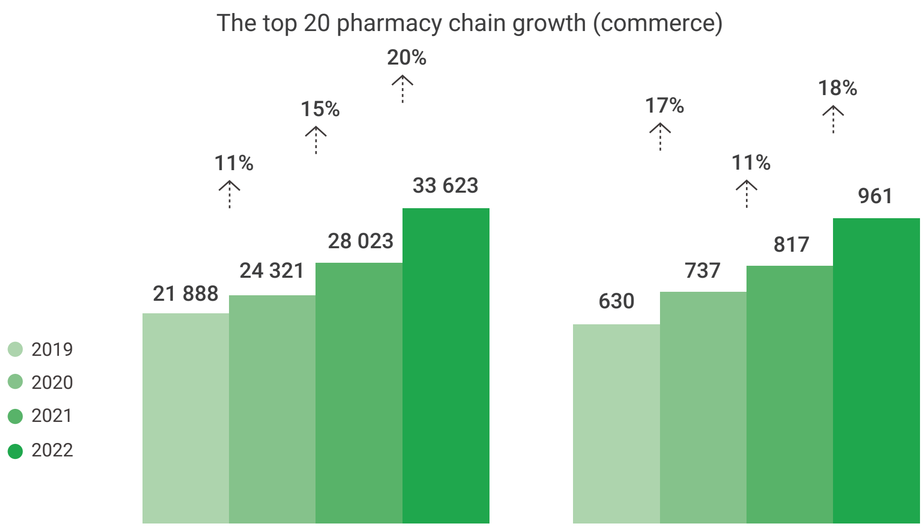


Table 26

Ranking of pharmacy chains by sales in 2022

Ranking	Pharmacy chains	Sales, billion roubles	Share in commercial segment, 2022	Sales increase compared to 2021	Number of outlets
1	Rigla	133.4	8.0%	18.4%	3 661
2	Aprel	112.4	6.7%	43.5%	5 372
3	IRIS	85.1	5.1%	21.1%	3 341
4	United AS ERKAFARM and MELODIYA ZDOROVYA	80.8	4.8%	-9.2%	2 037
5	Aptechnaya Set 36.6	67.3	4.0%	26.5%	1 814
6	Neo-Pharm	67.2	4.0%	19.6%	1 081
7	Implosia	64.6	3.8%	23.0%	4 308
8	Vita (Samara)	59.3	3.5%	20.9%	2 378
9	Planeta Zdorovya	57.5	3.4%	12.0%	2 325
10	Pharmland	54.4	3.2%	20.4%	1 873
11	E-apteka	26.7	1.6%	57.3%	276
12	Maxavit	24.8	1.5%	11.7%	858
13	Zdorov.ru	19.5	1.2%	10.9%	98
14	Pharmacevt+	18.9	1.1%	10.0%	624
15	Aloe	16.1	1.0%	33.6%	534
16	Apteka Nevis	15.8	0.9%	11.0%	626
17	Gubernskiye Apteki	15.2	0.9%	7.3%	404
18	Apteka-Timer	14.7	0.9%	-6.0%	838
19	Magnit	14.0	0.8%	4.0%	834
20	IDEA	13.0	0.8%	18.0%	341
21	Monastyrev.rf	11.1	0.7%	26.9%	184
22	Zdorovye (Ust'-Labinsk)	9.4	0.6%	9.3%	215
23	Edelweiss	9.3	0.6%	36.0%	287

Ranking	Pharmacy chains	Sales, billion roubles	Share in commercial segment, 2022	Sales increase compared to 2021	Number of outlets
24	Nadezhda-Pharm	**8.0**	**0.5%**	**13.1%**	**378**
25	Pharmeconom	**7.4**	**0.4%**	**19.0%**	**181**
26	Antey	**7.3**	**0.4%**	**9.0%**	**616**
27	Vasha No. 1	**7.3**	**0.4%**	**50.9%**	**102**
28	Garmoniya Zdorovya	**6.6**	**0.4%**	**32.2%**	**240**
29	Peterburgskiye Apteki	**6.5**	**0.4%**	**-5.0%**	**86**
30	Volgopharm	**5.6**	**0.3%**	**0.0%**	**154**
31	Vita-plus	**5.6**	**0.3%**	**32.8%**	**280**
32	Regional Pharmacy Warehouse (Chelyabinsk)	**5.4**	**0.3%**	**1.5%**	**287**
33	Aliya-Pharm	**5.3**	**0.3%**	**11.0%**	**170**
34	Economnaya Apteka (Crimea)	**4.8**	**0.3%**	**22.6%**	**122**
35	Sovetskiye Apteki	**4.7**	**0.3%**	**2.0%**	**398**
36	Bashpharmatsiya	**4.6**	**0.3%**	**9.0%**	**288**
37	Arbik	**4.5**	**0.3%**	**28.3%**	**198**
38	Nizhegorodskaya Oblastnaya Pharmatsiya	**4.1**	**0.2%**	**-12.0%**	**221**
39	MFK Severo-Zapad	**3.7**	**0.2%**	**24.0%**	**102**
40	Trika (Moscow)	**3.6**	**0.2%**	**5.0%**	**55**
41	O’Vita	**3.5**	**0.2%**	**14.0%**	**119**
42	Dialog	**3.4**	**0.2%**	**2.0%**	**78**
43	Serdtse Rossii	**3.3**	**0.2%**	**0.6%**	**202**
44	Floriya (Chita)	**3.2**	**0.2%**	**0.1%**	**122**

Ranking	Pharmacy chains	Sales, billion roubles	Share in commercial segment, 2022	Sales increase compared to 2021	Number of outlets
45	Semeynaya Apteka (Blagoveshchensk)	3.2	0.2%	28.0%	285
46	Lucky-Pharma	3.0	0.2%	14.0%	210
47	Apteka25.rf	2.8	0.2%	20.3%	25
48	Pharmiya	2.7	0.2%	-8.3%	108
49	Novosibirskaya Aptechnaya Set	2.7	0.2%	13.0%	70
50	Vita Nord	2.4	0.1%	9.0%	90
51	Fitopharm	2.3	0.1%	9.0%	202
52	Mir Lekarstv i Zabota	2.3	0.1%	8.2%	143
53	Tabletochka	2.1	0.1%	12.0%	92
54	Bryanskpharmatsiya	2.1	0.1%	-14.0%	141
55	Deshevaya Apteka	2.0	0.1%	-8.0%	80
56	Ekonom	1.7	0.1%	2.1%	16
57	Vita Apteka (Tomsk)	1.6	0.1%	22.0%	67
58	Aptechnye Traditsii	1.6	0.1%	-67.4%	117
59	Tattechmedpharm	1.5	0.1%	-0.5%	181
60	Mosoblmedservis	1.5	0.1%	15.0%	599
61	Evalar	1.4	0.1%	11.4%	47
62	AV i K	1.3	0.1%	78.8%	28
63	Pharmatsiya, Chuvash Republic State Unitary Enterprise	1.2	0.1%	7.0%	139
64	Moskovskiye Apteki	1.2	0.1%	81.9%	21
65	Narodnaya Apteka	1.2	0.1%	16.3%	25

is that the new regulations will lead to mass inspections of pharmacies and the withdrawal of licences from sole traders with more than one pharmacy.

In the spring of 2023, the State Duma will again discuss the idea of limiting the size of pharmacy chains. The bill in question was previously abandoned, but there is a good chance that the 2020 bill will be debated again. It would not only cap the chain's maximum market share in the region and in Russia as a whole, but also limit the amount of marketing bonuses. Chains with a market share of more than 20% in drug wholesaling and retailing would be restricted from expanding their premises. The share would be calculated for chains within federal cities, municipalities and urban districts. The drafters of the bill also proposed that the maximum amount of revenue from marketing contracts should be set at 5%.

It should be noted that the marketing unions and associations are also developing rapidly year after year: both the number of members of the associations and the participation of the chains themselves in the various marketing campaigns are increasing. In other words, pharmacies used to be members of only one association, but now they can choose different associations and cooperate with several of them at the same time, depending on the conditions offered by the associations for a particular manufacturer.

Among the marketing associations, ASNA is still in the lead with 17,000 members and a 15.8% share of the total pharmacy market.

The structural changes in the pharmacy market were triggered by the adoption of the Drug Distance Selling Law in 2020, which currently applies to over-the-counter drugs. Over the past two years, we have seen the rapid development of various services that offer both online ordering of pharmacy products and home delivery of OTC drugs.

While in 2015 only pharmacy marketplaces (Apteka.ru, ZdravCity, Eapteka, etc.) were present on the market, now you can reserve drugs on pharmacy aggregators (which provide information on availability and prices in pharmacies), on pharmacy chains' own websites, and on regular marketplaces (Yandex.Market, Ozon, Wildberries). It is these players that are taking

Table 27

Ranking of marketing associations by sales in 2022

***Note:** DSM Group's estimates. ISO 9001:2015, own data of companies*

Ranking	Marketing Association	Sales, billion roubles	Share in commercial segment, 2022	Sales increase compared to 2021	Number of outlets
1	ASNA	**265.0**	**15.8%**	**30.5%**	**17 056**
2	ProApteka	**186.5**	**11.1%**	**26.7%**	**10 026**
3	MFO	**152.0**	**9.1%**	**52.9%**	**7 758**
4	Sozvezdiye	**125.4**	**7.5%**	**35.8%**	**6 531**
5	Vesna	**38.3**	**2.3%**	**71.7%**	**3 112**
6	AnnA	**8.1**	**0.5%**	**12.5%**	**755**

market share from pharmacy marketplaces. In 2022, the share of pharmacy marketplaces fell from 66% to 60%. This is despite the emergence and development of new players.

ASNA continues to develop the Asna.ru website, which is accessed not only by the members of the marketing union. Customers can choose from more than 10,000 pharmacies across Russia. The distributor Pulse also joined the project. As a result, customers can now order the combined ASNA + Pulse products not only from the pharmacy's current stock, but also from the distributor's warehouse for next day delivery.

Meanwhile, Pulse itself launched its own marketplace on POLZA.ru in 2022, and the company also received authorisation for distance selling and home delivery of drugs. More than 8,000 partner pharmacies in 1,300 locations are connected to the service.

ZdravCity expanded its delivery coverage through Russian Post offices. The healthcare marketplace ZdravCity launched a pilot project in partnership with Russian Post to deliver orders to small and hard-to-reach locations. The project involves 1,200 Russian Post offices in 77 regions of the country.

Russian Post itself started delivering over-the-counter drugs as a pilot project in 5 offices in the Samara and Tver regions on September 1. In June, the company received authorisation from the Federal Service for Surveillance in Healthcare (Roszdravnadzor) for distance selling of drugs.

Regular marketplaces are trying harder to develop not only a reservation service but also round-the-clock home delivery of OTC drugs. For example, the marketplace Yandex.Market launched overnight express delivery of drugs in 1–2 hours in Moscow and St. Petersburg. It is also possible to order over-the-counter drugs and dietary supplements with 24-hour express delivery via Yandex.Food.

Delivery Club launched a free pickup service for drugs and other goods from pharmacies. The service is available to residents of Moscow, St Petersburg, Nizhny Novgorod and 22 other cities. The service now connects 1,200 outlets of 8 pharmacy chains. Since July 2022, it has also been possible to order drugs for overnight home delivery within 30 minutes. The new service is available in

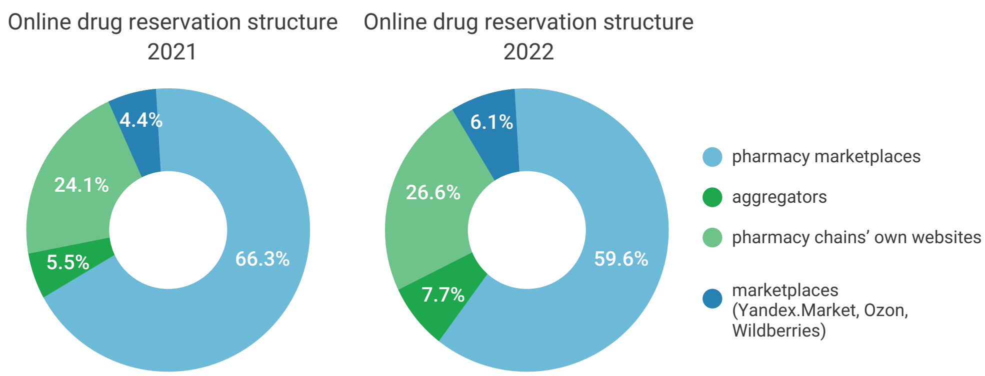


Figure 47

Online drug reservation structure

Table 28

Ranking of distance selling services by sales in 2022

Примечания:
** The sales are shown only for the products ordered online.*
*** The sales are shown only for the products ordered online.*

Source: *DSM Group's estimates. ISO 9001:2015, own data of companies*

Ranking	Distance selling service	Number of pickup points	Sales, billion roubles	Sales increase compared to 2021	Share in commercial segment, 2022
1	Apteka.ru	31 058	73.42	24%	4.38%
2	Eapteka *	10 103	23.9	55%	1.43%
3	ZdravCity	24 838	13.45	49%	0.80%
4	Uteka	47 643	7.9	164%	0.47%
5	Asna.ru	8 000	3.8	280%	0.23%
6	009.RF	27 000	1.2	-	0.07%
7	Ozon **	-	1.1	-	0.07%
8	SberMegaMarket **	-	0.8	-	0.05%
9	Yandex.Market	2 940	0.4	-	0.02%

Moscow and St Petersburg, with more than 80 pharmacies participating.

This allows customers to choose the best possible offer, in terms of both price and selection. As a result, the online pharmacy segment continues to grow at a high rate.

Pharmacy eCom sales in 2022 were approximately 194.3 billion roubles (drugs and parapharmaceuticals combined), accounting for 11.6% of the pharmacy market. While sales growth in the market as a whole was around 15%, online sales were 54% higher than in 2021. It should be noted that this way of purchasing drugs is currently more popular among Moscow residents. The share of pharmacy eCom in the capital is just over 20%, but there was no significant growth throughout 2022. Moscow seems to have reached its "psychological" maximum for online buying. However, pharmacy eCom is still growing in the regions: last year's share was 7-8%, now it is over 10%.

Perhaps additional growth in online pharmacy sales will be triggered by the authorisation of prescription drug delivery. At the end of October 2022, a law was signed that allows distance selling of prescription drugs as an experiment. According to the document, the experiment will take place from March 1, 2023 to March 1, 2026 in Moscow, the Belgorod region and the Moscow region. The government approved the criteria for listing prescription drugs for online sale. In Moscow, doctors will start writing electronic prescriptions for reimbursed drugs, which will be valid for up to a year.

It should be noted that the proportion of prescription drugs already exceeds the online reservation of OTC drugs. At year-end 2022, Rx drugs ordered online accounted for 64% of the total sales of all drugs (this figure is around 53% for the market as a whole). The weighted average price per package for prescription drugs is 2.4 times higher than that for over-the-counter drugs.

Finally, we would like to mention another legislative initiative that will come into force on September 1, 2023: in November 2022, a law was signed to revive compounding pharmacies in Russia. The law aims to bring back pharmacy-based production of drugs in individual doses prescribed by doctors for individual patients. According to the document, pharmacies, including veterinary pharmacies, will be allowed to make ointments, mixtures, powders, solutions and many other things that can be either pharmaceutical substances or ready-to-use prescription drugs.

About ten years ago, chemists were forbidden to make their own medicines that were already registered and had a pharmaceutical licence in Russia. This caused lots of compounding pharmacies across the country to close. The number and range of drugs that could be made "on the spot" without infringing the patent of any rights holder have decreased. Today, there are only 450 compounding pharmacies left nationwide.

The adoption of the Law on Compounding Pharmacies is one of the measures to support the pharmaceutical industry and increase the availability of drugs to the public.

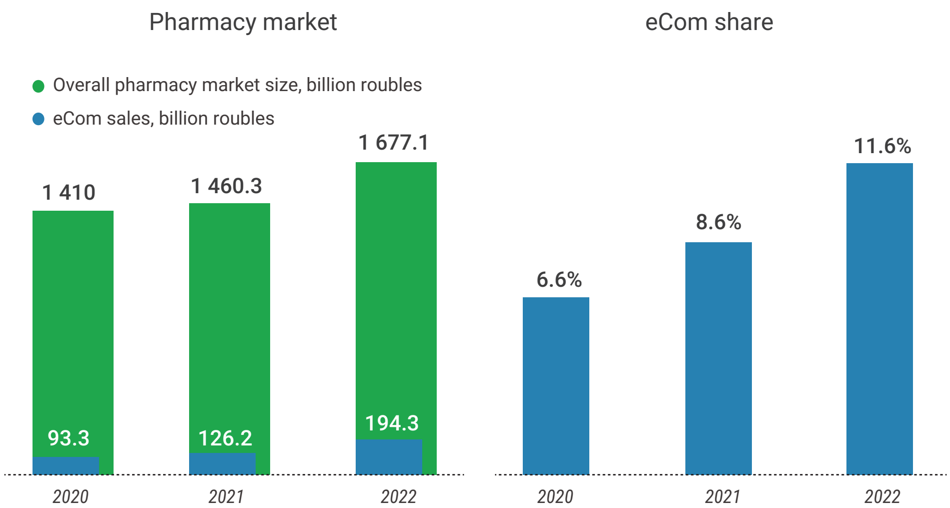


Figure 48

Pharmacy eCom dynamics, 2020-2022

8. Distributors

The challenges of 2022 once again confirmed the significance of distributors in the pharmaceutical supply chain. Fortunately, the western sanctions did not take their toll on the market players directly, though, of course, wholesalers had to tackle the same problems that everyone had: changing supply chains; payment difficulties faced by importers; price spikes for almost everything, from transport to drug costs.

The surge in demand back in March 2022 (similar to March 2020) was better controlled by distributors. To avoid the slump and 'out of stock' categories, companies resorted to a variety of tools: limiting volumes, reduced due dates and shift to prepayment terms, extra security such as bank guarantees and liability insurance, and raising prices for popular medicines. All these measures helped to prevent 'overstocking' of pharmacies and build necessary stocks until full supply resumption from abroad.

It is remarkable that the shopping «spree» was observed only in pharmacies, while the public sector saw no extra purchases during this period. In general, bidding was organised according to the annual schedule, and there was no overstocking of drugs in hospitals and authorised suppliers.

It is worth highlighting that the government (through some laws and acts) has never much regulated the relations of distributors with other market players. But in 2022, probably for the first time ever, this act appeared. Pharmacies have repeatedly reported about delivery problems and rising markups in spring 2022. As a result, the Ministry of Health has set deadlines for distributors delivering to pharmacies: Order of the Ministry of Health No. 267n dated April 18, 2022, was registered on April 25, 2022. The document prescribes 10 to 15 days delivery period, depending on destination: the maximum period shall be 10 business days for federal cities, municipal and city districts, for other territories — 15 business days from the date of application from a pharmacy.

The resolution, both in terms of observance by distributors, and government control, stirs debate. Poor data transfer and mismatch of actual stocks and accounting in the State Information System for the Monitoring of Movements of Medicinal Products may amount to tens of thousands of packs, thus to control the stocks using this system is no small task, which means misunderstanding the need and timeliness of delivering certain categories to pharmacies. On the other hand, pharmacies may pursue own benefit from the government order, since it regulates delivery obligations without taking into account the terms and conditions between the parties.

The adopted amendments to Federal Law 61-FZ on drug imports, may gain more popularity. If some medicines are out of stock due to the economic situation, it is permitted to import these categories in secondary packaging without Russian labels, but with stickers with the text in the Russian language.

The volume of the pharmaceutical market in distributor prices hit 2,195 billion roubles in 2022 (+11% YoY). The indicators are quite impressive. The market has been growing at double-digit rates for the second year in a row. It is noteworthy that if last year's market driver was the public sector, then in 2022, the key factor was the sales from pharmacies. This, by the way, is clearly observed in the wholesalers' behaviour, which have a strong focus on one or another part of the pharmaceutical market.

The relatively low growth (+6%) in the public sector is explained by decreased COVID-19 drug purchases (antibiotics, anticoagulants, etc.). The subsidised programmes retain the upward trend in drug purchases. The higher growth in the commercial segment was due to the surge in demand for expensive systemic medications in March, as well as the increased demand for medicines used against acute respiratory viral infections and flu at the end of the year, when the incidence rate surpassed the threshold.

At the end of 2022, the 10 largest distributors on the pharmaceutical market accounted in the aggregate for 72.1%, which is 0.7% lower than in 2021. The decreased concentration on the pharmaceutical market is associated with the composition of the top ten, only half of these companies are fully focused on stocking pharmacies, others have a high share in bid purchases. The lower pace in the public sector made some companies topple from their market positions.

If we compare the top 5 distributors in the commercial segment of the market, the average growth is at 11.8%, for the public segment the top 5 distributors are growing on average by 9.2%. It is important that top 5 rankings have no repetitions, the names in the top 5 are different. A company named below managed to tap into both top 10 rankings: this is Protek that focuses mainly on the pharmacy channels, yet has a distinct share in public tenders for drugs (circa. 10% of the overall gross turnover). By contrast, Pulse and Katren hold around 1% of their total sales on the public market.

The composition of distributors in the ranking has been quite stable in recent years, yet with the ever-lasting 'struggle' for top positions. Moreover, even leaders can change.

For the third year in a row, the leading position has been occupied by Pulse. The distributor's growth rate slowed down slightly in 2022, and the company's share nudged down 0.5%, but the gap between the second place is still big, almost one whole percent. Pulse continues focusing on the commercial market, enhancing its solutions for the pharmacy segment.

One of its scalable projects is an automated order picking line that, among other things, supports 3PL order processing. Planeta Zdorovya pharmacy chain transferred all its pharmacies in the presence regions of the Russian Federation for 3PL logistics to Pulse in 2022.

The distributor's diversification mostly targets the pharmacy segment. Having no own production, the company is a go-getter in projects that offer extra tools to the pharmacy retail. For example, Pulse has launched its own line of pri-

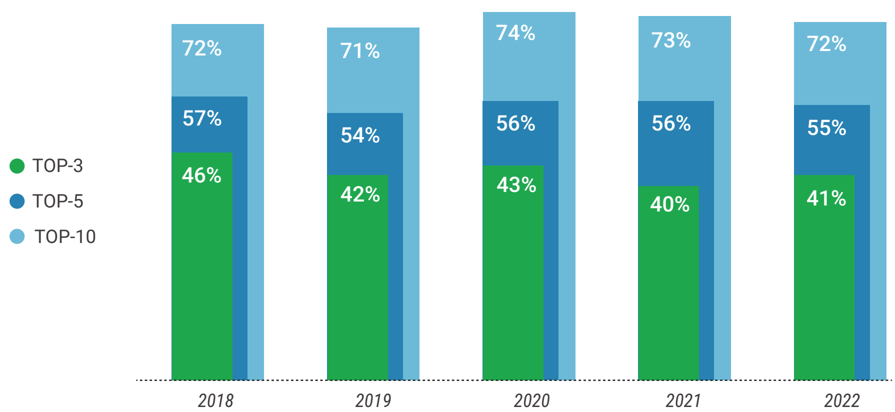


Figure 49

Concentration in the Distribution Segment

Table 29

Ranking of distributors on the pharmaceutical market, 2022

Note: *sales volumes are given in purchase prices inclusive of VAT (including sales volumes in the pharmacy segment and non-drugs; public procurement - drugs only)*

Ranking	Distributor	Value, billion roubles	Growth	Share
1	Pulse	311.6	7%	14.2%
2	Protek	292.1	17%	13.3%
3	Katren	288.1	12%	13.1%
4	R-Pharm	180.4	-10%	8.2%
5	Grand Capital	135.5	22%	6.2%
6	BSS	98.1	28%	4.5%
7	Pharmcomplect	90.0	-8%	4.1%
8	Irwin 2	71.9	4%	3.3%
9	Pharmimex	57.9	26%	2.6%
10	ProfitMed	56.8	-4%	2.6%
11	Lancet	50.6	29%	2.3%
12	Asfadis Association	50.5	10%	2.3%
13	Avesta Pharmaceuticals	43.5	5%	2.0%
14	Agroresursy	37.9	12%	1.7%
15	GDP	34.8	5%	1.6%
16	Magnit	23.8	0%	1.1%
17	ZdravServis	22.5	8%	1.0%
18	GC Euroservice	20.1	5%	0.9%
19	Pharmstore	19.5	-9%	0.9%
20	Primapharm	16.3	35%	0.7%
21	Pharmservice	15.8	-1%	0.7%
22	Severo-Zapad	14.3	14%	0.7%
23	Medipal-Onco	14.1	25%	0.6%
24	Medintorg	11.0	23%	0.5%
25	Trading house BF	4.7	-7%	0.2%
26	ArchiMed	4.5	3%	0.2%
27	Volgopharm	2.8	-43%	0.1%

vate labels — ComForte children's hygiene and care products.

Pulse also kick-started its marketplace on POLZA.ru in 2022, and obtained a permit for distance selling and home delivery of drugs. POLZA.ru appeared on the basis of Apteka Forte website. The service is connected to over 8 thousand partner pharmacies in 1.3 thousand communities. To date, the online pharmacy offers only self-pickup from any of its partner points after card or cash payment. The biggest pharmacy chains that have already plugged in are Farmlend and Planeta Zdorovya. Not limited to pharmaceuticals only, the expanded range available on the website is more lucrative for consumers.

Protek returned the second place in 2022 ranking with 13.3% share. The company demonstrated the maximum growth in sales among the top 3 members (+17%). The wholesale segment is only part of the big group of companies. At the end of 2021, Protek Group topped the pharmaceutical Expert-400 ranking of Russia's biggest companies published in Expert journal. The group ranked 67th in the overall list with over 314 billion rouble sales.

It continues developing across all directions. A new logistics centre CV Protek was commissioned in Kazan in summer 2022, it warehouses medicines, dietary supplements and medical devices (over 11 thousand SKUs) in pallets and boxes. The centre seeks to expand its range up to 20 thousand SKUs in 2023. In 2023, it is planned to finalise the creation of Pushkin cluster — Transservice logistics park in Moscow Oblast, which will serve not only this area, but also 10 other densely-polulated regions. It is also anticipated to commission two state-of-the-art terminals at once (TST-3 and TST-4): in January and at the end of September 2023.

For seamless deliveries, Mobile Driver mobile app has been launched. The app is a blend of advanced global practices geared towards better delivery both across B2B and B2C. Mobile Driver helps to build the best delivery route and offers map services for drivers on the go. The app has reduced route planning by 60% (from 4 to 1.5 hours) and drivers' time en route by 10%. Follow-up deliveries now take not 3-4 days, but are made on the next day. The service organises up to 1,000 delivery routes for 27,000 customers daily.

The app offers a full range of courier delivery options, including payment acceptance, being an extra driver of ZdravCity online service. Its development is given special priority in 2023. For this purpose, Zdravcity LLC became a standalone entity GC Protek in early July 2022. The company is looking to increase investments in ZdravCity and Moe Zdorovye projects.

Steering its manufacturing business growth, Protek has purchased three pharmaceutical companies: Bion LLC, a well-known manufacturer of pharmaceutical ingredients, Pharmintellect LLC and Khimpharmkomplekt LLC.

The top third distributor is Katren with +12% growth. The company is committed to the fast-paced development of its apteka.ru website expanding to 31,000 pharmacies. In the company's turnover, 25% orders by value are placed through apteka.ru service. According to VK (the owner of the official Russian app store RuStore), apteka.ru app ranks first in the category of popular downloaded health apps.

It is noteworthy that distributor Katren is one of the most experienced on the market. It will turn 30 in 2023.

Some players in the top 10 improved their status: the distributor BSS and Irwin 2 climbed one line up, and Pharmimex — two lines up.

Table 30

Top 10 distributors by segments

Ranking	Pharmacy segment		Public procurement	
	Дистрибутор	Share	Дистрибутор	Share
1	Pulse	**22.5%**	R-Pharm	**11.7%**
2	Katren	**21.1%**	Irwin 2	**8.2%**
3	Protek	**18.7%**	BSS	**5.2%**
4	Grand Capital	**9.9%**	Pharmimex	**5.0%**
5	Pharmcomplect	**6.6%**	GDP	**4.0%**
6	ProfitMed	**4.1%**	Lancet	**3.2%**
7	BSS	**3.9%**	Protek	**3.1%**
8	Agroresursy	**2.9%**	Primapharm	**1.9%**
9	Avesta Pharmaceuticals	**2.7%**	Severo-Zapad	**1.7%**
10	Asfadis Association	**2.1%**	Pharmservice	**1.7%**

The first among 'classical' distributors in the public segment (excluding producers also winning in and supplying under tenders) is R-Pharm. Its total turnovers are worth 180 billion roubles, 57% of which are budget-funded. R-Pharm won the title of Moscow's government supplier in 2021.

It focuses on its manufacturing segment and hi-tech drug localisation. Thus, it is not surprising that the company has become the leader among private Russian pharmaceutical companies by media coverage (according to Medialogia service). The total number of media reports mentioning R-Pharm Group in 2022 was 6,414.

R-Pharm runs several manufacturing sites in Yaroslavl Oblast. Moreover, the company has opened Biotechnology and Industrial Pharmacy department at Yaroslavl State Medical University (YSMU). This is part of the educational programme initiated by R-Pharm and adopted in the region: the creation of R-Pharm training centre at Pastukhov Yaroslavl Industrial Economic College, a course of lectures from pharmaceutical experts at specialised Yaroslavl universities and colleges. All these projects contribute to the emerging «centre of biotech excellency» in the region.

The group is also expanding its reach: R-Pharm is about to build a pharma plant under the first investment contract in St. Petersburg with counter-obligations of the government. The unprecedented offset agreement will be concluded in St. Petersburg. According to the bidding terms, a winner must build a pharmaceutical plant in the city within three years at its own expense. In the next seven years, the city will purchase medicines from the investor for its own needs, according to the bid, the total cost will not exceed 8.7 billion roubles.

R-Pharm Group has also become the key shareholder of Pervy Elektronny Retsept (1ER) LLC. The company owns 51% interest in one of the e-prescription system operators. It is implementing a system of electronic prescriptions, connecting more than 30 regions of Russia.

The second among the state procurement companies is Irwin 2 (its share grew from 5.9% in 2021 to 8.2% in 2022). The company is actively involved in deliveries under government programmes Krug Dobra, health initiatives for patients with cancer and cardiovascular diseases, as well as the supply of anti-COVID and orphan drugs.

High growth rates are demonstrated by Lancet that climbed from the 13th to 11th line in the overall ranking. It commissioned a new pharmaceutical warehouse located in Podolsky district of Moscow Oblast in February 2022. The total area of the logistics centre is 7,600 m^2, which is 2.5-fold more than that of warehouses previously used by the company.

As mentioned above, the ranking of distributors has been relatively stable in recent years. However, one of its regular players has toppled off its position since 2022. Biotec ceased its wholesale operations and left the public segment due to its owner’s prosecution. And though there is no official judgement yet, the risk of bankruptcy is very high.

In late 2022, news leaked out that one more distributor, ProfitMed, faced difficulties and was expecting insolvency. Last year, the company ranked 10th with 2.6% share. 32 claims worth 390 million roubles were filed against ProfitMed in November-December 2022. One of its lenders is Sberbank, which has some ProfitMed’s products pledged, including goods worth 532.2 million roubles.

In recent years, GDP has focused on public procurement. The distributor ranked 5th in 2022. GDP is the former distribution unit of 36.6 Pharmacy Chain, it started working independently from 2021. But its owner changed in late 2022 after the takeover by Dominanta Group.

Thus, chances are some more «usual» names may disappear from the distributors’ ranking in 2023 with new players to come.

9. Production

One of the core problems faced by drugmakers in 2022 was logistics. The ever-tightening sanctions levied since late February had a knock-on effect on conventional transport routes; as a result, companies had not only to reconsider their supply chains, but also search for other suppliers of drug components and materials. This was a critical task both for international and domestic manufacturers.

In the face of Russia's political events, many big-league foreign drug manufacturers announced partial exits from Russia:

• Johnson & Johnson, Bristol-Myers Squibb, Roche, AbbVie, Eli Lilly, Novartis, Sanofi, GlaxoSmithKline, Takeda Pharmaceutical and Astellas Pharma have reported that they suspend new clinical trials, Gilead Sciences is about to halt the creation of new clinical trial sites in Russia;

• MSD (Merck & Co), Eli Lilly, Bayer, Pfizer, Novartis, Takeda have discontinued new investments in Russia;

• Novartis is stopping, and Sanofi is scaling back on its commercial operations in Russia, Gilead Sciences announces partial suspension of business operations;

• Eli Lilly, Bayer, Sanofi and GlaxoSmithKline have cut back on advertising and promos in Russia;

• Reckitt Benckiser shares its plans to sell the Russian business to third parties or own employees based in Russia;

• Bristol-Myers Squibb started the transfer of its Russian business to Swixx BioPharma back in May;

• Eli Lilly has halted exports of its Cialis, a treatment for erectile dysfunction, to Russia;

OAbbVie reports that it wholly suspends aesthetic pipeline;

• MSD (Merck & Co) has declared that it will no longer deliver smallpox, rubella, measles and mumps vaccines to Russia. The company seeks to preserve the sales of its drugs that have no substitutes.

Of course, there are no manufacturers that have pulled out of Russia completely, and, most importantly, supplies of medicines still continue. Nevertheless, Russia is running low on pharmaceuticals, since one of the ways to put new high-tech drugs on the market was through clinical trials, which are mandatory prior to marketing authorisation.

Almost 50% of pre-scheduled clinical trials of innovative drugs pending marketing authorisation were abandoned or suspended in Russia in H1 2022. This is cited in the Bulletin of the Association of Clinical Research Organisations (ACTO) for H1 2022. In general, according to the bulletin, in the first half of this year, the Russian Ministry of Health issued 425 permits for clinical trials (+28% YoY), including 111 for international multi-centre clinical trials (-27%) for further marketing authorisation in the country. Yet, 16-18% trials were terminated or cancelled in Q2 2022, and 50-55% were halted or not started by drug manufacturers. According to the Public Registry of Medicines, 79 clinical trials were finished, terminated or suspended from January to October (more details are unavailable).

In addition, the "withdrawal" of foreign companies from the advertising market and cuts in marketing budgets also affect the final structure of consumption. Without the usual marketing pace, the sales of these pharmaceutical brands have started a downward trend. It is obvious that this is not a quick process, and habits and brand loyalty do not change overnight. Domestic companies are eager to occupy vacated market niches. Therefore, the growing sales of exactly Russian medicines were not surprising in H2.

Here, it is noteworthy that Russian companies had amplified activity long before the today's events. The «import substitution» trend has been observed for many years pushing up the manufacturing and expansion of drug range.

Thus, according to Rosstat, the Russian pharmaceutical industry produced 8.6% more medicines and medical supplies in 2022 vs. 2021. If we look at the changes throughout the year, it is clear that drugmakers have faced the first difficulties in sourcing foreign pharmaceutical ingredients since the second half of the year. Russia's drug manufacturing has grown to hit 29.5% during 5 months compared with the same period, while it was almost 22% for 9 months of 2022, and just 14% throughout 11 months. While, for example, the output of medicines and medical supplies has lost 30.7% in December vs. December 2021.

It is noteworthy that the ongoing COVID-19 pandemic and 'sanctions' have not had any major impact on the development prospects of the Russian producers: new pharmaceutical pipelines in 2022 were largely linked to the development of anti-COVID treatments, vaccines, and the emerging market need to compensate for the shortage of some imported medicines.

For example, to meed the growing demand for thyroid drugs, Renewal launched L-Thyroxine Renewal line in a short time. The previous demand for levothyroxine sodium had been satisfied by almost only foreign brands.

In 2022, Pharmasyntez launched the production of two more anti-COVID-19 drugs, having acquired an almost complete portfolio of medicines for the etiotropic coronavirus treatment: Remdeform (INN remdesivir), Favibirin (INN favipiravir), Kovipir (INN molnupiravir) and Mirobivir (INN nirmatrelvir + ritonavir).

The manufacturing sites announced or launched in 2022 include a number of projects related to the release of active pharmaceutical ingredients and end-to-end production.

Several new projects emerged in 2022 regarding localisation of foreign producers in Russia:

- In 2022, on its Kaluga site, Novo Nordisk launched the first stage localisation of ultra-long-acting insulin Tresiba (100 IU/mL) in FlexPen syringe pens.

- The Russian-based biopharmaceutical company Nanolek and Sanofi Pasteur (a company of Sanofi Group) have released the first batch of the meningococcal vaccine Menactra on the site in Kirov Oblast. As part of this vaccine localisation, it is planned to make up to 3.5 million doses annually.

- Petrovax Pharm has announced that it is looking to localise the full-cycle production of the biosimilar of agalsidase beta for the treatment of orphan Fabry disease in partnership with ISU Abxis, South Korea. 2 billion roubles will be invested in a new biotech pilot site. The drug to be made from the own substance is expected to appear on the market in early 2025.

- Pharm Aid, a joint venture of the state corporation Rostec and Dubai-based Ishvan Pharmaceuticals, will localise the full-cycle production of live and inactivated vaccines (rotavirus, chicken pox and HPV vaccines, with potential other vaccines in its pipeline in the future). 9 billion roubles will be invested in the construction of a biopharmaceutical manufacturing site in Kaluga Oblast anticipated to be launched in late 2024.

- It has been resolved to complete the construction of the plant abandoned by Pfizer and NovaMedica in order to launch the release of domestic vaccines. Namely, Pharm Aid seeks to localise the full-cycle production of rotavirus vaccines by 2029.

Table 31

Key production sites launched on the Russian pharmaceutical market in 2022

Initiator	Region	Description	Capacity	Investments
Renewal (PFK Obnovlenie)	Novosibirsk Oblast	The company is about to launch the production of 80 new medicines in 2023, which are alternatives to foreign brands. The first stage is already completed: soft dosage forms line (ointments, gels, and liniments) was launched. In the next 6 months, 3 more production shops will be opened		3.5 billion roubles
Binnopharm Group	Obolensk, Moscow Oblast	Upgrade of Alium site shop, which involves ramping up sachet dosage form production. Initially, the production of 2 anti-cold drugs will be launched, and the manufacturer seeks to produce 3 more drugs in sachets by late 2022	Ramping up sachet production up to 50 million pcs. annually	100 million roubles
Binnopharm Group	Kurgan, Kurgan Oblast	The reconstruction of premises and installation of new equipment helped to ramp up production of anti-fever drugs, NSAIDs, mucolytic syrups and suspensions at Sintez plant in Kurgan	6 million bottles annually	
Federal Medical and Biological Agency (FMBA) on the premises of the Saint Petersburg Scientific Research Institute of Vaccines and Serums	Saint Petersburg	Launch of Konvasel subunit recombinant COVID-19 vaccine	Up to 2 million vaccines monthly, and depending on demand thereafter	
IST-Pharm LLC (GC Pharmasyntez)	Ussuriysk, Primorsky Krai	The company has launched the construction of its new plant, which involves expanding the product portfolio and creating import-substituting production of parenteral (intravenous) nutrition solutions listed as Vital and Essential Drugs and intravenous anesthetics (INN propofol). The opening is scheduled for Q3 2023	800 million doses annually Anticipated annual output 790 thousand packs	750 million roubles
Pharmasyntez-Nord JSC (GC Pharmasyntez)	Saint Petersburg	The company has obtained a permit to commission a scientific and industrial complex for the development and production of medicines treating cancer and autoimmune diseases, as well as endocrine-related disorders. Moreover, the site will become the largest platform manufacturing Sputnik Light vaccine against COVID-19.		4.5+ billion roubles
Pharmasyntez JSC (GC Pharmasyntez)	Irkutsk, Irkutsk Oblast	Looks to launch the production of bronchial spasmolytic at Irkutsk-based plant, which will appear on the market from Q1 2024	136 million capsules with inhalation powder and 867 thousand inhalation aerosols annually	1 billion roubles

Initiator	Region	Description	Capacity	Investments
Nanolek LLC	Kirov Oblast	The design of the new plant wing for the new-cycle vaccine manufacturing will be completed by the summer of 2022. And it is planned to launch the production of the first fully domestic HPV vaccine in 3 years	Up to 8 million ready-to-use HPV vaccines	3.5+ billion roubles
Amedart LLC	SEZ Technopolis Moscow, Moscow	Import-substituting production of medicines has been launched, including against HIV and cancer. In addition, the site has launched the production of immunosuppressants and drugs for the treatment of kidney failure, and it seeks to launch the production of insulin. In total, the manufacturer's portfolio includes more than 60 products, all of which are listed as Vital and Essential Drugs	Up to 15 million packs of all medicines annually Where: up to 10 million HIV drugs annually up to 1 million anti-tumour drugs annually	1.5+ billion roubles
Rusatom Healthcare (State Atomic Energy Corporation Rosatom (ROSATOM)) on the premises of Karpov R&D Institute of Physical Chemistry	Obninsk, Kaluga Oblast	The company has obtained a permit for the construction of a radiopharmaceutical plant. The portfolio will include a wide range of radiopharmaceuticals and APIs, highly-demanded products based on iodine 131, samarium 153, molybdenum 99 and promising radiopharmaceuticals with lutetium 177, actinium 225 and radium 223. The manufacturer anticipates to release the first lot in 2024.	89 thousand Curie units annually	9 billion roubles
Pharmstandard-UfaVITA OJSC	Ufa, Republic of Bashkortostan	In December 2022, the company launched full-cycle production of clotting factor 8 drug (trade name Eightoplasm) for the prevention and treatment of type A hemophilia. According to the manufacturer, the hemostatic drug will be commercialised in Q1 2023.	350 thousand bottles annually 5.9 million packs annually	1.58 billion roubles
Pharmstandart-Leksredstva JSC	Kursk Oblast	The company seeks to create large-scale production of common essential medicines: paracetamol, validol, citramon, askofen, etc. The launch of the line is expected in March 2023.	400 million packs annually This will almost double the output	1.9 billion roubles
Solopharm (Grotex LLC)	Saint Petersburg	In April, a new plant for the production of solid dosage forms, capsules and tablets was launched. As a result, the range of drugs has expanded from 36 to 84 names. The new lines will release heart, nervous system, GIT, trauma care, lung medications and general practice drugs	2 billion tablets and capsules annually	3.5 billion roubles

Initiator	Region	Description	Capacity	Investments
Petrovax Pharm LLC	Moscow Oblast	Launch of the new, fourth injectable dosage forms line The manufacturer intends to ramp up the production of essential drugs and vaccines through expansion	50+ million doses annually	1.6 billion roubles
Petrovax Pharm LLC	Podolsk, Moscow Oblast	In Q3 2023, the manufacturer anticipates to complete the second construction phase. The new lines will release substances, biotech products and vaccines against cancer, autoimmune, infections and orphan diseases. For example, a drug for Fabry disease therapy		2 billion roubles
Premium Standart Technopolis LLC	SEZ Technopolis Moscow, Moscow	Construction of a site for the production of pharmaceutical packaging (for medicines and skincare), instructions for use and blister foil by 2024. In the future, the company also seeks to produce new pharmaceutical, perfumery and skincare products: gel and ointment tubes		1.1 billion roubles
Generium-Next LLC (Generium JSC as founder)	SEZ Technopolis Moscow, Moscow	Launch of a shop for secondary packaging and production of drugs for the treatment of bronchial asthma, cardiovascular, rare and hereditary diseases, including Gaucher disease and cystic fibrosis. By 2024, the company plans to construct its own full-cycle plant from substance and finished dosage form release to primary and secondary packaging	150+ thousand product units annually by 2024	Investments in the plant construction will be circa. 5 billion roubles by 2024 The Industrial Development Fund has approved 2 billion rouble loan under Priority Projects programme
Severnaya Zvezda NPJSC	Leningrad Oblast	The second production complex releasing solutions for injections, eye drops and sprays was commissioned	140 million vial packs, 13 million drops packs and 10 million spray packs annually	1+ billion roubles
Argumentum Pharma LLC	SEZ Dubna, Dubna, Moscow Oblast	The company has obtained a permit for a new fill-finish production site. The plant will release sterile drugs in vials, bottles, pre-filled syringes and cartridges. The new facility will develop and manufacture liquid dosage forms, including hormone-based medicines. The company anticipates development and mass production of some Vital and Essential Drugs, as well as medicines not yet made in Russia. Final site construction is scheduled for Q3 2023	Site for sterile drugs in vials and bottles: 48 million units annually Lyophilisation: 1.5 million bottles annually Site for sterile medicines in pre-filled syringes and cartridges: 7 million packs annually Output of hormone-based lines: 48 million pcs. annually	1.5 billion roubles

Initiator	Region	Description	Capacity	Investments
Betaren Pharma LLC	SEZ Dubna, Dubna, Moscow Oblast	In 1.5-2 years, the company is looking to launch liquid and solid dosage form lines for the treatment of blood disorders, cardiovascular diseases, diabetes, as well as peripheral and central nervous system diseases		1+ billion roubles
The Medsintez Plant LLC in cooperation with iVFarma	Novouralsk, Sverdlovsk Oblast	A new shop for the production of biotech substances for women's reproductive health was opened. It will produce Primapur, the first Russian drug of recombinant follicle-stimulating hormone (FSH) for the treatment of human infertility. This will be end-to-end manufacturing: both substances and finished dosage forms released in pre-filled disposable syringe pens	Up to 30g substance, up to 1 million disposable syringe pens annually	
Biokhimik JSC (GC Promomed)	Saransk	A tablet line for medicines, namely antiviral and hepatoprotective drugs, NSAIDs and HIV medications, was launched. The production of sachet forms is underway	1 billion tablets annually	1.8+ billion roubles
Bright Way Industries LLC (GC Bright Way Group)	SEZ Technopolis Moscow, Moscow	The construction of the full-cycle scientific and industrial complex was completed ahead of schedule. The hi-tech site is about to develop and manufacture therapeutic drugs for the respiratory, musculoskeletal, digestive systems, antimicrobial drugs and other medications (over 80 VED names)		3.4 billion roubles
Rapharma JSC (GC Protek)	Lipetsk Oblast	A site of soft dosage forms for gels and ointments was put into operation. The first drug manufactured on site was Amelotex Gel in a new 100g tube.	10 million tubes annually	
OTCPharm Pro JSC (a company of OTCPharm JSC)	Krabrovo Tech Park, Kaliningrad	In January 2023, the company plans to commission a pharmaceutical site releasing a wide range of medicines: antiviral, antiseptic and anti-inflammatory drugs, NSAIDs, combined analgesics, antifungals and anxiolytics		4.7 billion roubles
Retinoids JSC	urban district Balashikha, Moscow Oblast	New lines of import-substituting pharmaceuticals, namely medications for skin conditions, have been launched		Circa. 150 million roubles
Evalar CJSC	Biysk, Altai Krai	The company has finally refitted and expanded the lines of synthetic drugs for soft gelatin capsules	250+ thousand capsules hourly	100 million roubles

• The government of Moscow Oblast and Advanced Group, India, have signed an agreement to localise the production of cancer medicines in the region and a synthesis site for pharmaceutical substances. The volume of investments in the first phase of the project is estimated at 1.5 billion roubles, of which 1 billion roubles will be spent on the construction of a manufacturing site, and 500 million roubles on the pharmaceutical pipeline. Advanced will invest about 5 billion roubles in the second phase, a new synthesis site for substances with up to 500 tonne annual output. The start of construction is scheduled for Q1 2023, and the completion — for Q1 2027.

• On its Hemofarm site in Obninsk, Stada launched the production of Edarbi, a hypertension therapy drug, with 20, 40 and 80 mg dosage versions, in September 2022.

• Roche, Switzerland, will localise its drug Evrisdi (INN risdiplam) in Russia for the treatment of spinal muscular atrophy (SMA). The localisation process has already been launched on Dobrolek site in Moscow (PharmEco Group). The drug localised in the Russian Federation will be available for sale from July 2023.

Another mechanism for the support and development of the production of own substances in Russia is Special Investment Contract (SPIC). In 2022, a resolution was adopted to reduce the minimum conclusion period for SPIC to 1.5 months. However, this measure is not much popular among pharmaceutical companies. Just one project was implemented in 2022: the Chuvash Republic and Volperox LLC signed a special investment contract (SPIC 2.0) to organise the anthraquinone-based production of hydrogen peroxide at Khimprom PJSC. The production launch is scheduled for late 2023 — early 2024. The investments in the project will reach 9.7 billion roubles.

Another format of long-term cooperation in the pharmaceutical industry is the «offset agreement», i.e. a long-term supply agreement with investment counter-obligations. Moscow Oblast and PSK Pharma signed such agreement in September 2022. The manufacturer undertakes to fulfill at least 1 billion rouble investment obligations by 2025, and deliver the agreed supplies of medicines for the therapy of cardiovascular diseases, asthma, rheumatoid arthritis, pulmonary hypertension, idiopathic thrombocytopenic purpura, and hyperphosphatemia in adult patients with chronic renal failure by 2031. Another condition is the end-to-end manufacturing, including the synthesis of APIs, of at least 3 drugs in 2 different dosage forms.

Today, nine offset agreements are being fulfilled in Russia in various areas with investment counter-obligations — in Moscow, Moscow Oblast and Samara Oblast, and the Republic of Bashkortostan.

The government of the Russian Federation, supports drugmakers here. Thus, Decree No. 2141 (dated November 25, 2022) was approved in November to make the simplified procedure of granting drug manufacturing licenses regular from 2023.

All measures to support domestic manufacturers aim to reach the targets in the share of domestic products: 53% by 2024. At the end of 2022, localised drugs accounted for 44.5% in value (-1.5% vs. 2021). The changes were due to the growth in the public sector: financing the purchase of expensive programmes pushed up the share of imported drugs in this segment, which has affected the overall market. Thus, the share of medicines manufactured abroad and purchased through tenders was 46.8% in 2021 (42.7% in 2022). The import substitution in the public segment strongly affects the structure of purchases of specific INNs, and some emerging domestic drugs lead to almost complete displacement of foreign alternatives (eculizumab, bevacizumab, linezolid, etc.). But new original drugs put on the market are more expensive and most often turn out to be imported. As a result, the overall outcomes of shifting to localised drugs are neutralised.

The commercial segment sees a weak, yet evident consumer refocus on localised drugs (45.7%) nudging up 0.2% share. More aggressive marketing by domestic companies and reduced activity of foreign manufacturers also push up the sales of domestic medicines.

The volatility in 2022 manufacturer ranking is now much lower. The leaders (top 3) were able to retain the positions occupied back in 2021.

In 2022, the top 20 manufacturers held in aggregate a 46.8% share. Bayer was a leader in 2022. Sales growth: +6.4% vs. 2021. As before, second comes Novartis, with a 3.4% share. Sanofi still ranks as the third.

Due to the highly growing purchases in public programmes, AstraZeneca and Merck & Co moved up 8 positions in the ranking — this is the maximum result in top 20.

There are six Russian companies in the ranking, while there were only four last year. The «newcomers» are Pharmstandard and Ozon, with high sales in the commercial segment.

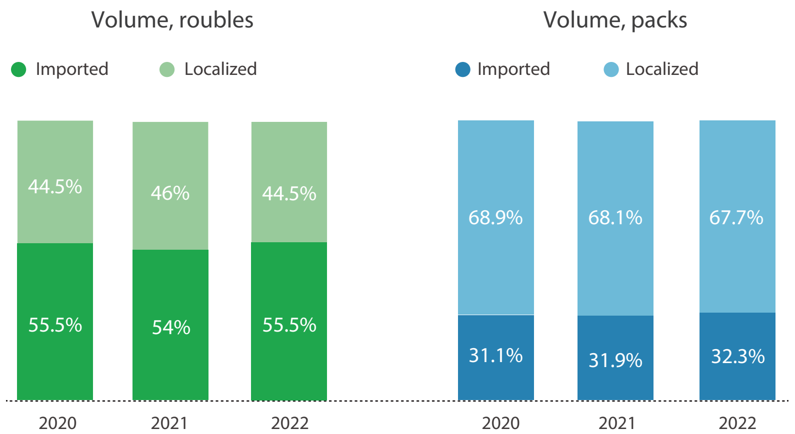


Figure 50

Drug sales by origin

Table 32

Top 20 producers by sales volumes on the Russian pharmaceutical market in 2022

Ranking	Change against 2021	Producer	Sales volume, million roubles	Growth against 2021	Share
1	-	Bayer	**84 787.9**	**6.4%**	**3.8%**
2	-	Novartis	**76 180.6**	**6.7%**	**3.4%**
3	-	Sanofi	**71 953.0**	**4.0%**	**3.2%**
4	+1	GlaxoSmithKline	**62 536.7**	**16.8%**	**2.8%**
5	+8	AstraZeneca	**60 588.5**	**52.3%**	**2.7%**
6	+8	Merck & Co	**58 220.0**	**54.7%**	**2.6%**
7	-	Johnson & Johnson	**58 016,7**	**15.8%**	**2.6%**
8	-4	OTCPharm	**55 291.9**	**0.0%**	**2.5%**
9	+2	F.Hoffmann-La Roche	**54 740.6**	**34.0%**	**2.4%**
10	-4	Pfizer	**54 163.8**	**3.9%**	**2.4%**
11	-1	Stada	**50 768.3**	**19.6%**	**2.3%**
12	-4	Biocad	**48 178.1**	**6.1%**	**2.1%**
13	-4	Abbott	**46 453.6**	**7.5%**	**2.1%**
14	+2	Servier	**42 444.0**	**22.6%**	**1.9%**
15	-3	Teva	**40 240.8**	**0.4%**	**1.8%**
16	+3	KRKA	**39 168.2**	**17.6%**	**1.7%**
17	+3	Pharmasyntez	**38 595.8**	**15.9%**	**1.7%**
18	-	Binnopharm Group	**36 627.5**	**7.4%**	**1.6%**
19	+2	Pharmstandard	**34 452.7**	**7.3%**	**1.5%**
20	+3	Ozon	**34 039.1**	**13.4%**	**1.5%**

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